Results and financial structure of firms in 2009

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Introduction

In the December issue of the Economic Review each year, the National Bank describes developments reflected in the annual accounts of non-financial corporations. By the autumn, the Central Balance Sheet Office does already have a representative sample of the annual accounts for the previous year. The conclusions drawn on the basis of this sample can therefore be extrapolated relatively reliably to the population as a whole.

This article is composed of four sections. The first one briefly describes the methodology and population studied. The second section presents an extrapolation of the main profit and loss account items for the 2009 financial year. Section three assesses the financial situation of companies as regards profitability and solvency. Finally, section four highlights the links between risk of failure and the distribution of financial ratios.

1. Methodology and description of the population

1.1 Methodology

The Central Balance Sheet Office has collected data on the accounts of non-financial corporations since the end of the 1970s. For that purpose, firms are required to submit their annual accounts using a standard form no later than seven months after the end of the financial year. The data are then adjusted if necessary in order to meet the required quality standards. So, by September, it is possible to carry out an initial analysis. However, each year, the nature of the data available for the latest financial year examined, in this case 2009, raises questions of methodology.

Owing to the fact that some firms are late in filing their annual accounts, the population relating to 2009 is incomplete. Moreover, firms that file late generally tend to be in a structurally less favourable financial position than firms which file their accounts within the allotted time. Table 1 shows, for the 2008 financial year, the significant differences between companies according to the time of filing their annual accounts: companies that submitted theirs after 31 August 2009 were significantly less profitable, less solvent and less liquid. In all probability, the data currently available for 2009 therefore give an overly optimistic view of reality.

TABLE 1 **FINANCIAL SITUATION OF COMPANIES ACCORDING TO ANNUAL ACCOUNTS FILING DATE** [1]

(medians, 2008 financial year)

	Annual accounts filed up to 31 August 2009 inclusive	Annual accounts filed after 31 August 2009
Net return on equity	7.8	6.3
Degree of financial independence	32.2	23.4
Liquidity in the broad sense	1.3	1.1

Source: NBB.
(1) The ratios are defined in Annex 1. Their significance is explained in section three.

TABLE 2   COMPOSITION AND REPRESENTATIVENESS OF THE CONSTANT SAMPLE 2008-2009

	Corporations in the 2008-2009 sample	All non-financial corporations in 2008	Representativeness of the sample, in %
Number of companies	**174,657**	**299,968**	**58.2**
Large firms	13,439	17,770	75.6
SMEs	161,218	282,198	57.1
Manufacturing industry	13,200	21,778	60.6
Non-manufacturing branches	161,457	278,190	58.0
Value added (€ million)[(1)]	**127,543**	**167,056**	**76.3**
Large firms	104,233	126,081	82.7
SMEs	23,310	40,975	56.9
Manufacturing industry	36,203	46,408	78.0
Non-manufacturing branches	91,340	120,648	75.7

Source : NBB.
(1) For firms in the constant sample, the balance sheet total taken into account is the figure for 2008.

Because of this double bias, the 2009 data are not directly comparable with those for previous years. To ensure comparability, we use the constant sample method. The sample for 2008-2009 is made up of firms that filed annual accounts for both the 2008 and the 2009 financial year and that met the following conditions :
– both sets of annual accounts relate to a financial year lasting 12 months ;
– the annual accounts relating to 2008 were filed before 31 August 2009 ;
– the annual accounts relating to 2009 were filed before 31 August 2010.

The method involves extrapolating the 2009 results on the basis of developments observed in the constant sample : the 2009 figures are obtained by applying the rate of change of the sample to the final figures for 2008. It is therefore assumed that the trends seen in the sample are representative of those affecting the population as a whole. As verified in previous editions of this article, this assumption is largely borne out since, in the vast majority of cases, the estimates give a good indication of the direction and scale of actual movements.

Table 2 describes the composition of the constant sample for 2008-2009, which covers 174,657 companies, or almost 58 % of all annual accounts filed in 2008. The representativeness measured in terms of value added is much higher, reaching 76 %. This difference can be attributed to the fact that it is mainly small (or very small) firms that file their accounts late. As a result,

the coverage rate for large companies is much higher, in terms of both the number of companies and value added.

1.2 Grouping according to size and branch of activity

The universe of non-financial companies forms a heterogeneous population within which different trends can be observed. Thus, for further analysis, overall trends must be parsed into smaller groups according to size and branch of activity. For one thing, the financing methods and, more broadly, the financial situations of companies differ according to size. Moreover, each branch of activity is subject to specific economic conditions that influence trends in the annual accounts.

Companies are sorted into size categories based on the format they use to file their accounts. According to the Company Code, small unlisted companies may use a simplified format, whereas large companies and small publicly-traded companies must use the complete format. Under the Company Code, a company is considered small if it has not exceeded one of the following limits during the past two financial years :
– average annual number of workers : 50 ;
– revenues (excluding VAT) : € 7,300,000 ;
– total balance sheet : € 3,650,000 ;
unless the average annual number of workers exceeds 100 units.

In all other cases, companies are considered to be large[1].

In this article, in keeping with the Company Code, we define large companies as those using the full format to file their annual accounts. Other companies, that is, those using the simplified format, are considered SMEs. In 2008, as shown in table 2, the latter group represented the vast majority of the population studied (282,198 companies, or 94 % of the total). In terms of value added, however, the large companies were clearly predominant, with 75 % of the total.

Since last year, distinction between firms according to their branch of activity has been based on the European nomenclature introduced on 1 January 2008, which gave rise to the Belgian version, Nace-Bel 2008[2]. It is the 2008 nomenclature which is used in this article, instead of the Nace-Bel 2003 nomenclature. Since the data below are published at high levels of aggregation, this change does not alter the statistics to any great extent. Some of

the figures are nevertheless no longer comparable with past data. For example, the new "information and communication" grouping contains activities that were not included before, such as telecommunications, publishing or computer activities.

For purposes of presentation and interpretation, the structure we use here differs slightly from the official nomenclature. Table 3 presents the breakdown of companies and their value added on this basis for financial year 2008. The corresponding Nace-Bel divisions are presented in Annex 2. Non-manufacturing companies represent the vast majority, at nearly 93 % of companies studied. The sectors with the largest number

(1) If the financial year is shorter or longer than 12 months, the revenue criterion is pro rated. If the company is linked to one or more companies, the criterion covering the average annual number of workers is calculated using the number of workers of all of the linked companies, and the revenue and balance sheet criteria are calculated on a consolidated basis. For more information, please refer to the Belgian Accounting Standards Commission opinion number CNC 2010-5 (www.cnc-cbn.be).
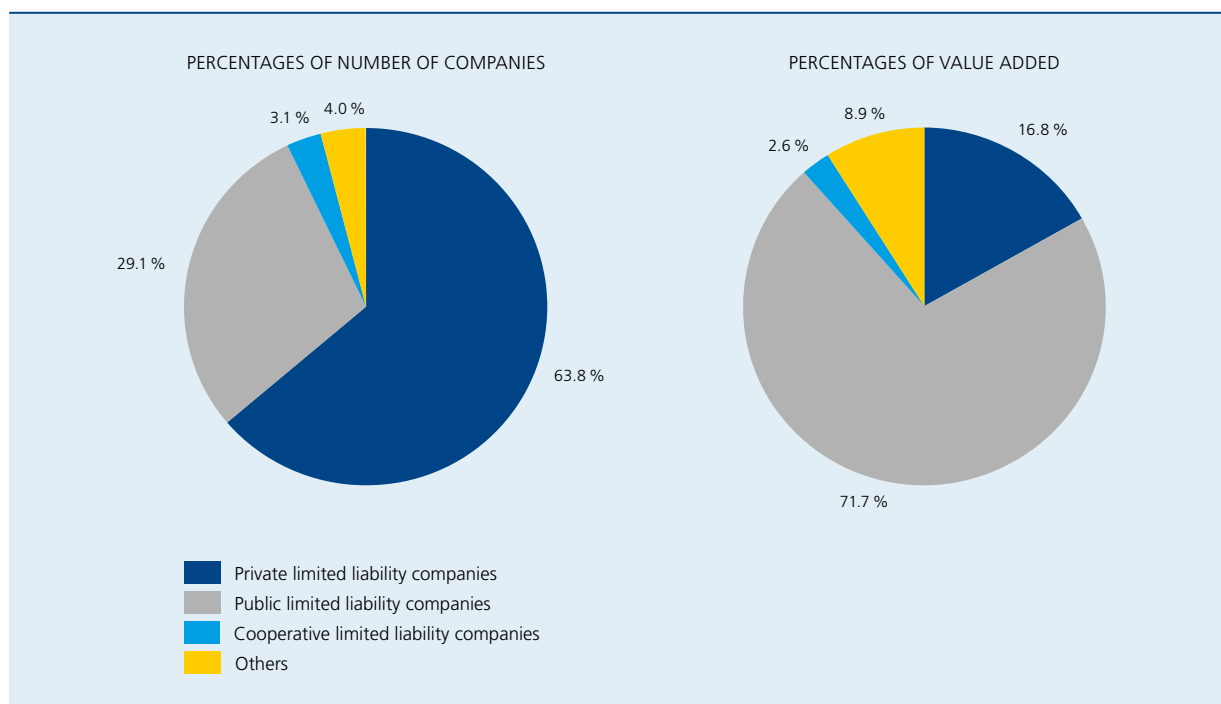
(2) See Regulation (EC) N° 1893/2006 of the European Parliament and Council of 20 December 2006. For more detailed information on the Nace-Bel 2008 classification, go to http://statbel.fgov.be.

TABLE 3   BREAKDOWN OF COMPANIES BY BRANCH OF ACTIVITY (2008)

	Number of companies	% of total	Value added (€ million)	% of total
Manufacturing industry	21,778	7.3	46,408	27.8
of which:				
Agricultural and food industries	3,770	1.3	6,579	3.9
Textiles, clothing and footwear	1,654	0.6	1,642	1.0
Wood, paper products and printing	3,796	1.3	3,248	1.9
Chemicals and pharmaceuticals	778	0.3	10,408	6.2
Metallurgy and metalworking	4,503	1.5	7,568	4.5
Metal manufactures	2,460	0.8	9,095	5.4
Non-manufacturing branches	278,190	92.7	120,648	72.2
of which:				
Wholesale and retail trade	78,642	26.2	35,890	21.5
Transportation and storage	10,894	3.6	15,522	9.3
Accommodation and food service activities	18,573	6.2	2,935	1.8
Information and communication	14,198	4.7	11,742	7.0
Real estate activities	29,364	9.8	4,561	2.7
Other service activities	64,148	21.4	23,637	14.1
Energy, water supply and waste	1,128	0.4	8,588	5.1
Construction	38,351	12.8	12,219	7.3
Total	299,968	100.0	167,056	100.0

Source: NBB.

CHART 1   BREAKDOWN OF COMPANIES BY LEGAL FORM

PERCENTAGES OF NUMBER OF COMPANIES

PERCENTAGES OF VALUE ADDED

3.1 %   4.0 %

29.1 %

63.8 %

8.9 %

2.6 %

16.8 %

71.7 %

- Private limited liability companies
- Public limited liability companies
- Cooperative limited liability companies
- Others

Source : NBB.

of companies are distribution (retail and wholesale), "other service activities" (including business services), construction and real estate. In terms of value added, the manufacturing industry's share of the national total is much more significant (27.8 %), because this sector is dominated by large companies, particularly in the fields of chemicals, pharmaceuticals, basic metals and fabricated metal products.

Annex 3 specifies the breakdown of value added by branch of activity and by size. The value added of SMEs is overwhelmingly generated by the non-manufacturing sectors, including business services, retail distribution and construction. Among large companies, manufacturing's share is significantly higher, at 32.5 %, and comes mainly from companies that belong to large international groups. We should emphasise that, in most cases, the activities of companies within a given sector tend to differ according to size. For example, in distribution activities, many SMEs are present in retail distribution, whereas large companies are more oriented towards wholesale distribution and distribution centres. Similarly, in the "information and communication" group, SMEs tend to focus on IT consulting, whereas large companies are more present in telecommunications.

Lastly, chart 1 presents the breakdown of companies by legal form. It shows that most of the population is comprised of the principal limited liability forms, i.e. private limited liability companies (SPRL, 63.8 % of companies studied), public limited liability companies (29.1 %) and cooperative companies (3.1 %). The legal forms of the remaining companies (4.0 %) include notably civil companies, ordinary limited partnerships and partnerships limited by shares, general partnerships, social-purpose companies, and state-controlled companies. In terms of value added, the proportions flip heavily in favour of public limited companies, which represent 71.7 % of the total, compared with 16.8 % for private limited liability companies, 2.6 % for cooperative companies and 8.9 % for all other legal forms.

2. Trends in the components of the operating result

In this section, we show how trends in the components of the operating result relate to trends in general conditions in 2009. For more information on overall economic conditions, please see the Bank's most recent reports.

2.1 Economic conditions

Belgium felt the full brunt of the global economic recession in 2009. Over the full year, GDP shrank by an average of 2.8 % in real terms, the most severe contraction since World War II. Between 1960 and today, GDP had only contracted three other times on an annual basis : by 1.5 % in 1975, by 0.3 % in 1981 and by 1 % in 1993.

As with most developed economies, when the financial crisis took a turn for the worse in late 2008, economic activity was already in a slowing phase due notably to the spike in commodity prices. Stemming from the extreme tensions triggered in September 2008 by the failure of US investment bank Lehman Brothers, the recession spread quickly during the final quarter of 2008 and early 2009, principally because of the paralysis of a portion of world trade and industrial production. Plunging stock markets, the tightening of lending conditions and, more generally, the highly uncertain economic outlook that prevailed at the time also heavily influenced the behaviour of Belgian consumers and companies. As a result, in addition to exports, both household consumption (consumer spending and home buying) and business consumption (via gross fixed capital formation and inventory drawdowns) weighed heavily on activity.

The recession was somewhat less severe in Belgium than elsewhere. Lacking the major structural imbalances – with respect to external accounts, private sector debt and the real estate market – that plagued certain other euro area countries, the Belgian economy proved relatively resilient. For example, the construction sector was not hit by a bursting real estate bubble, as was the case in Ireland and Spain.

As in the euro area, Belgian GDP growth returned to positive territory in the third quarter of 2009, but has remained relatively weak ever since. Just as general economic conditions were the principal factor in triggering the recession, they also contributed to the start of the recovery via a rebound in external demand and confidence, along with an easing of financial tension. Public authorities did much to create the conditions for the rebound, preventing a collapse of the financial system and taking steps to cushion the most immediately detrimental impacts of the crisis.

Whereas the recession phase ended in mid-2009, the severity of the financial crisis and the broad downturn in growth took a heavy toll on households and companies in 2009. With the exception of general government consumption and investment, every other component of end demand was a significant drag on GDP trends,

while the simultaneous drop in imports led to a neutral contribution from net exports (table 4). In general, the pronounced downturn in economic activity has had significant and lasting repercussions on production capacities, the make-up of end demand, and the formation of primary income. The most recent economic developments are analysed in another article in this issue of the Economic Review.

Looking more specifically at companies, businesses faced an unprecedented drop in demand in late 2008 and early 2009, fuelled primarily by the plunge in foreign trade. Prospects remained uncertain after that, including with respect to financing conditions. Under these circumstances, companies made large-scale adjustments. Many industrial companies suspended some or even all of their production and drastically reduced their inventories. While this phenomenon subsided considerably in the second half, more than one-third of the drop in GDP in 2009 was attributable to this massive inventory reduction. Furthermore, companies substantially adjusted the level of production factors employed. As a result, gross fixed capital formation contracted by 7.5 % in real terms, in stark contrast to performances over the previous five years, during which companies increased their investment expenditure by roughly 5 % per year on average.

TABLE 4   GDP AND MAIN CATEGORIES OF EXPENDITURE

(seasonally and calendar adjusted volume data ; percentage changes compared to the previous year, unless otherwise stated)

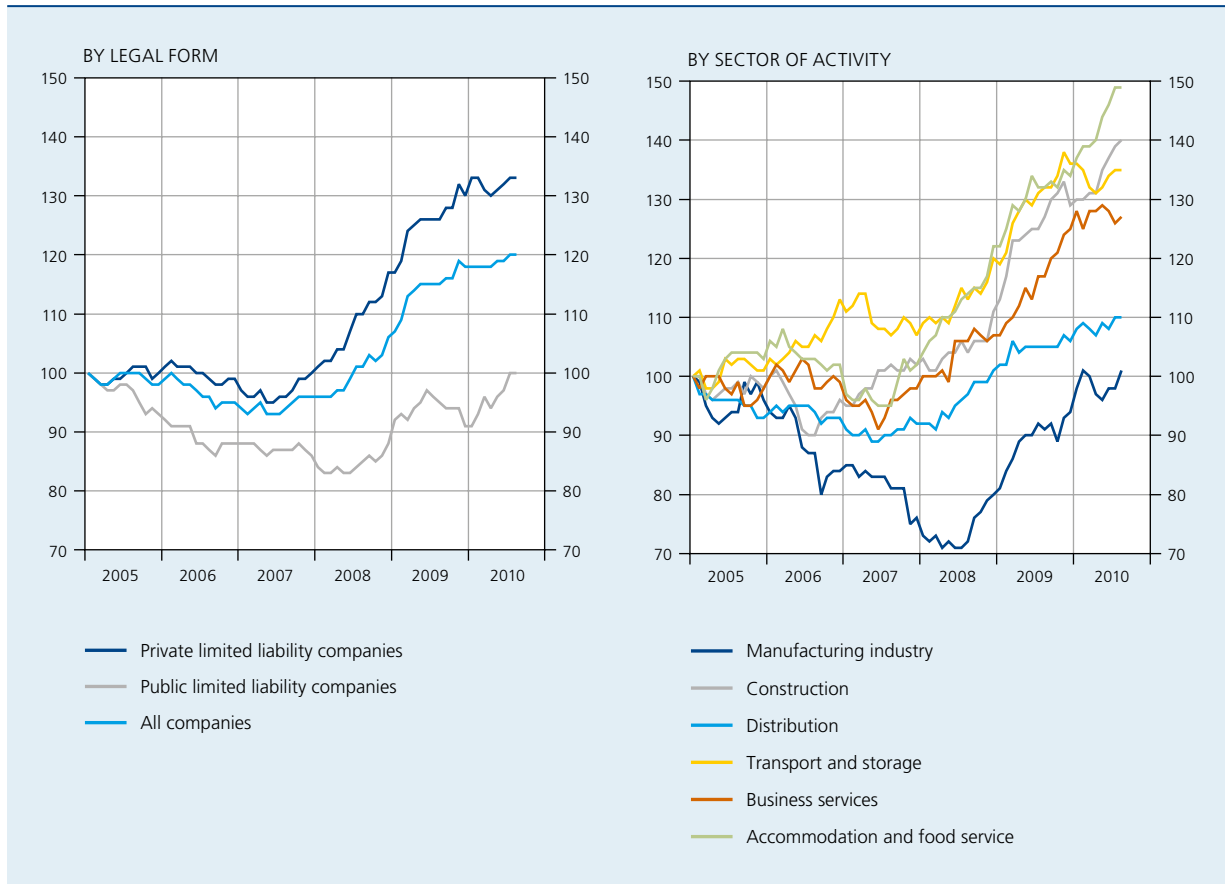|	2007	2008	2009
Household consumption expenditure[1]	1.7	1.4	–0.2
Final consumption expenditure of general government	2.1	2.5	0.4
Gross fixed capital formation ...	6.3	2.4	–4.9
Enterprises	7.9	3.4	–7.5
Housing	3.4	–0.6	–3.0
General government	4.2	5.5	10.3
Change in inventories[2]	0.1	0.0	–1.0
Exports of goods and services ..	4.3	1.4	–11.4
Imports of goods and services ..	4.4	2.8	–10.9
p.m. Net exports of goods and services[2]	*0.1*	*–1.0*	*–0.5*
GDP	2.8	0.8	–2.7

Source : NAI.
(1) Final consumption of households and non-profit institutions.
(2) Contribution to the change in GDP.

CHART 2

CHART 2   NUMBER OF BUSINESS BANKRUPTCIES IN BELGIUM

(12-month moving average, January 2005 = 100)

BY LEGAL FORM

BY SECTOR OF ACTIVITY

— Private limited liability companies
— Public limited liability companies
— All companies

— Manufacturing industry
— Construction
— Distribution
— Transport and storage
— Business services
— Accommodation and food service

Sources : FPS Economy, SMEs, Self-employed and Energy, own calculations.

Lastly, general economic conditions had an impact on the vulnerability of Belgian companies, which can be gauged using the number of bankruptcies reported by the Commercial Courts to the Crossroads Bank for Enterprises (Banque-carrefour des enterprises). During the second half of 2007, when economic growth began to slow, the number of bankruptcies started to rise, and then subsequently shot up : the total number of company bankruptcies rose by 10 % in 2008 and 11 % in 2009 (chart 2). The wave of failures first affected private limited liability companies (+31 % in 2008-09), although public limited companies were not spared (+6 %). Every sector of activity was affected by the trend, particularly business services, logistics, accommodation, food service activities and construction. In industry, the trend began a few months later, but then spread vigorously once companies began having to deal with the full impact of weaker world trade.

2.2 General trends in operating result

Under these conditions, the total value added created by non-financial corporations, i.e. the difference between the proceeds of sales and the cost of goods and services purchased from suppliers, fell by 4 % in 2009 (table 5, current prices). This was the first decline for more than 15 years. The drop continued a trend that began in 2008, during which the growth in value added had already slowed substantially compared with the previous five years.

The value added that a company creates allows it to cover its operating costs and, with the surplus, generate a net operating profit. Net operating profit reflects how efficiently a company carries out its ordinary commercial activities, independent of its financing policy and any exceptional items.

Staff costs account for the largest share of operating costs : in 2009, they represented more than 59 % of value

TABLE 5   TRENDS IN THE MAIN COMPONENTS OF OPERATING RESULT

(current prices)

	Percentage changes compared to the previous year					€ million	As % of value added
	2005	2006	2007	2008	2009 e	2009 e	2009 e
Value added	4.6	6.1	5.1	2.8	–4.0	160,448	100.0
Staff costs .... (–)	3.0	4.3	5.2	5.3	–0.3	94,842	59.1
Depreciation and downward value adjustments[1] .... (–)	3.7	5.3	6.2	6.6	3.5	29,462	18.4
Other operating expenses .... (–)	6.5	12.8	–9.8	11.3	–5.0	10,406	6.5
Total operating expenses	*3.4*	*5.2*	*4.0*	*6.0*	*0.1*	*134,710*	*84.0*
Net operating result	9.2	9.3	8.9	–8.8	–20.8	25,738	16.0

Source : NBB.
(1) On tangible and intangible fixed assets and start-up costs (item 630).

added. After rising at an average annual pace of 4.1 % during the previous five years, they fell slightly in 2009, by 0.3 %, for the first time in more than ten years. This unusual movement is largely attributable to the reduction in the number of workers employed. Companies made massive and prolonged use of systems that gave them some flexibility in the use of their workforce, among which temporary lay-offs and measures adopted as part of the government's stimulus plan (such as the suspension, under certain conditions, of the labour contract for employees, or the encouragment of shorter working weeks).

After personnel costs, depreciation of tangible and intangible fixed assets are the second-largest source of operating costs. In 2009, after three years of increasing rapidly, their growth slowed to only 3.5 % following the sharp downturn in investment. The downturn was basically attributable to the unprecedented collapse in end demand and the under-utilisation of production capacities. According to the results of the quarterly survey of the manufacturing industry, the production capacity utilisation rate fell from 82.4 % in the third quarter of 2008 to a record low of 70.1 % in the first quarter of 2009. It subsequently recovered to 74.3 % in the fourth quarter. This situation led companies to cancel or postpone planned investment.
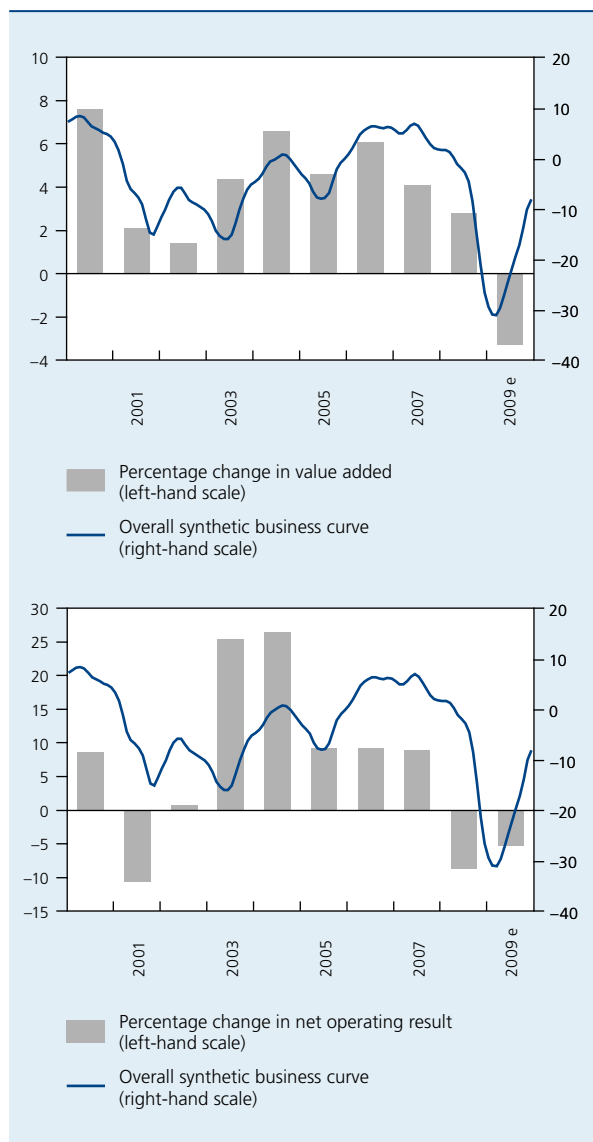
Determined primarily by staff costs and depreciation, total operating costs thus levelled off in 2009, up just 0.1 %. For the second straight year, growth in operating costs well exceeded growth in value added, resulting in yet another particularly sizeable contraction in net

operating result, by 20.8 %. Net operating result thus fell by nearly 30 % in the span of two years – a level unheard of since companies began filing their annual accounts with the Central Balance Sheet Office. Economic conditions thus took a heavy toll on companies' commercial performances. However, it is important to remember that operating profit had more than doubled between 2002 and 2007.

The movements in value added and operating results can also be compared with the Bank's business survey indicator, which measures business confidence (chart 3). The indicator fell sharply starting in September 2008, reaching an all-time low in March 2009. Survey data then show a marked recovery from summer 2009, largely attributable to more favourable business expectations for economic activity. Progress has not been as impressive with respect to assessments of current business. These trends are mirrored by movements in the value added and operating results of non-financial companies, whose trends in 2008 and 2009 were among the least flattering of the past 25 years.

Over the past ten years, growth in the value added and operating results of SMEs has been more rapid (chart 4). Given that small and medium-sized enterprises are focused more heavily on services activities than are large companies, they have been less affected by the decline of industry in the developed economies during last decades. This long-term trend held true in 2008 and 2009, when manufacturing sectors were hit particularly hard by the downturn in the global economy (see section 2.3). With

Percentage change in value added
(left-hand scale)

Overall synthetic business curve
(right-hand scale)

Percentage change in net operating result
(left-hand scale)

Overall synthetic business curve
(right-hand scale)

Source : NBB.

respect to operating profit, for example, SMEs did a much better job of containing the losses (–13 %) than large companies did (–33 %) over the two-year period.

2.3 Results by branch of activity

In the manufacturing industry, 2009 trends in value added and operating result were among the worst ever recorded (table 6). After two years of decline, value added at current prices fell yet again, by 6.8 %. Operating costs also fell, but to a lesser extent, such that operating result continued the decline begun in 2008, losing another 21 % in

2009. Over the past two years combined, manufacturing companies' operating results fell by more than 40 %.

Because production processes are increasingly international and foreign markets ever more important, the collapse in world trade was felt most harshly in the manufacturing sectors. In this respect, the trends in the various industrial sectors are largely attributable to their degree of interconnectedness with the rest of the world. Chart 5 shows the relationship between trends in industrial production and openness to export markets calculated based on input-output tables. In the first half of 2009, the most pronounced decline in production was seen in industries with the greatest export focus, particularly in basic metals, fabricated metal products (transport equipment, electrical equipment, etc.) and textiles. Conversely, sectors that export little, such as energy, publishing and food production, were less sensitive to the economic slowdown. These trends are mirrored in the value added and operating result figures for the various manufacturing sectors, as drawn from the profit and loss accounts (table 6). It is in basic metals, fabricated metal products and textiles that these two aggregates fell the most sharply over the past two years. Conversely, while agriculture and food production, chemicals and pharmaceuticals were affected by the immediate impact of the recession in 2008, their performances rebounded considerably in 2009.

Value added also fell significantly in non-manufacturing sectors in 2009, by 3.0 %, continuing the contraction that began in 2008. At the same time, staff costs and depreciation continued to increase, resulting in the biggest drop in operating result for more than 15 years (–20.6 %). Economic conditions did the most damage to market-related services, most of which experienced a decline in value added, and in certain cases a sizeable decline in operating result. Logistics and transport activities, like the wholesale distribution sector, were directly hit by the contraction in industrial activity in Belgium and Europe in general, for which they are a significant input. Furthermore, business service providers – for example, IT consulting companies – had to deal with the cost-cutting measures adopted by their clients at a time of heightened economic uncertainty. Lastly, the drop in consumer spending hurt, among other sectors, retail distribution, accommodation and food service activities.

Other sectors held up better, particularly construction. The building industry's value added was virtually unchanged in 2009, while the 6.3 % decline in its operating result was minor compared with other sectors. While it did have to deal with reduced housing investment, the sector was

CHART 4   VALUE ADDED AND NET OPERATING RESULT ACCORDING TO SIZE

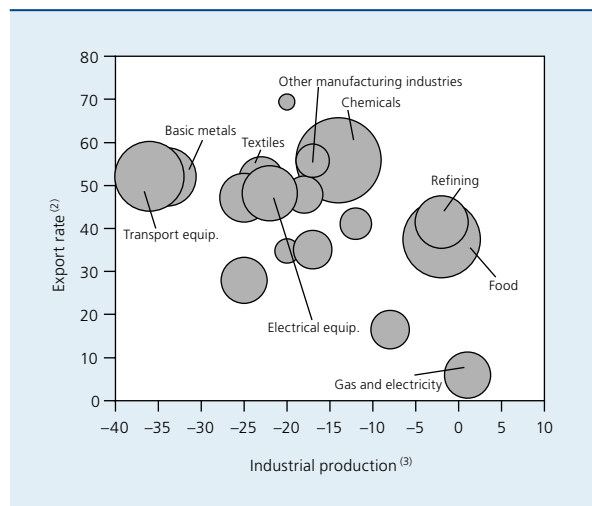(percentage change compared with the previous year)

VALUE ADDED

NET OPERATING RESULT

■ Large companies   ▨ SMEs
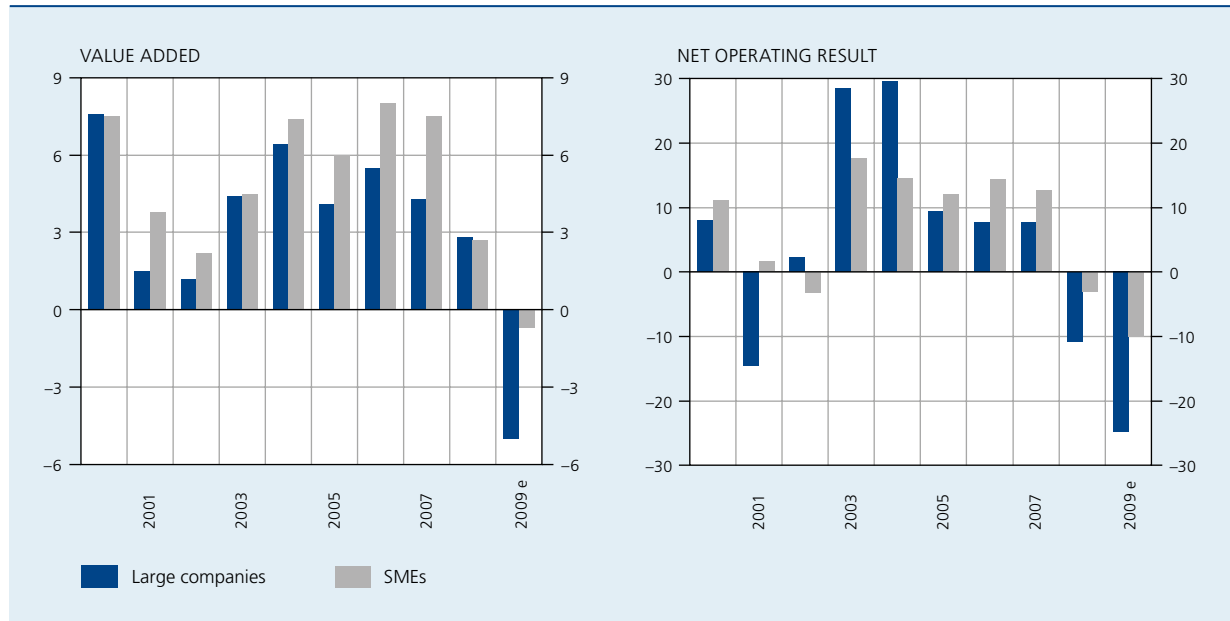
Source : NBB.

buoyed by public authorities' economic stimulus measures, including increased public infrastructure spending and tax incentives for new construction, renovation and

energy efficiency. Furthermore, unlike other European countries, Belgium did not experience a bursting housing market bubble.

CHART 5   DEGREE OF OPENNESS TO EXPORTS AND TRENDS IN INDUSTRIAL PRODUCTION[1]

Other manufacturing industries

Chemicals

Basic metals

Textiles

Refining

Transport equip.

Food

Electrical equip.

Gas and electricity

Export rate[2]

Industrial production[3]

Source : NBB, Annual Report.
(1) The size of the circles is proportional to the sector's share of total industrial production, calculated based on input-output tables from 2000.
(2) The export rate is measured by the ratio between exports and total available resources. It is calculated based on input-output tables from 2000.
(3) Percentage change in first halfyear of 2009 industrial production compared with the previous year.

3. Changes in the financial situation of firms

The financial analysis that follows is based on the theory of interpretation of the annual accounts, from which several ratios have been taken. The financial ratios are presented in global form and as medians. The globalised ratios are obtained by taking the sum of the numerators for all firms and dividing it by the sum of their denominators. The median is the central value in an ordered distribution : for a given ratio, 50 % of firms have a ratio above the median and 50 % have a ratio below it.

The two measures, which respond to different concerns, are complementary. Since it takes account of each firm according to its real weight in the numerator and the denominator, the globalised ratio primarily reflects the situation of the largest firms. In contrast, by indicating the situation of the central firm, the median reflects the movement in the population in general : the median is influenced equally by each of the firms, regardless of size. As a microeconomic measure, the median is preferable

TABLE 6   VALUE ADDED AND NET OPERATING RESULT BY BRANCH OF ACTIVITY

(percentage changes compared to the previous year)

	Value added		Net operating result		p.m. Percentage share of the branches in total value added in 2009 e
	2008	2009 e	2008	2009 e	
Manufacturing industry	–3.1	–6.4	–27.3	–21.2	27.1
of which:					
Agricultural and food industries	5.2	7.5	–1.0	41.0	4.4
Textiles, clothing and footwear	–13.1	–9.9	–69.9	16.6	0.9
Wood, paper products and printing	–6.4	–5.7	–28.5	–28.4	1.9
Chemicals and pharmaceuticals	–2.5	1.5	–34.6	16.0	6.6
Metallurgy and metalworking	–8.1	–16.6	–43.1	–77.5	3.9
Metal manufactures	–3.2	–11.3	–20.7	–39.4	5.0
Non-manufacturing branches	5.2	–3.0	–1.1	–20.6	72.9
of which:					
Wholesale and retail trade	0.3	–6.1	–14.3	–34.4	21.0
Transportation and storage	9.1	–7.7	16.7	–81.7	8.9
Accommodation and food service activities	3.1	–1.7	–8.8	–42.4	1.8
Information and communication	3.0	0.0	4.6	–13.6	7.3
Real estate activities	13.5	–3.2	19.4	–12.4	2.8
Other service activities	9.0	–2.3	4.9	–10.1	14.4
Energy, water supply and waste	7.8	4.8	12.7	17.4	5.6
Construction	6.2	–0.3	1.9	–6.3	7.6
Total	2.8	–4.0	–8.8	–20.8	100.0

Source: NBB.

to a simple average, because it is barely affected by the extreme values of certain companies.

Starting last year, in order to get a better understanding of the different strata of the population, the perspective of the analysis has been widened to cover the entire distribution: in the tables in Annex 4, the median data are supplemented by the first and third quartiles (Q1 and Q3) as well as by the tenth and ninetieth percentiles (P10 and P90). The interquartile range is also given to provide an idea of the dispersion of the distribution.

3.1 Profitability

Profitability concerns firms' ability to generate profits. It can be assessed by using the net return on own funds. This figure, also referred to as return on equity, is the net profit after tax divided by equity capital. This ratio expresses the return obtained by shareholders, after deduction of all expenses and taxes. Over a sufficiently long period, the return on equity has to exceed the return on a risk-free investment in order to provide shareholders with a risk premium. Due to the volatility of exceptional results, the net profit figure used here excludes exceptional items in order to provide a more representative picture of companies' recurring performances.

In 2009, the globalised return on equity came to 5.6 % for large companies and 6.4 % for SMEs (chart 6). Whereas the ratio fell for the second year in a row for large companies, SMEs managed to stabilise their ratio after, it must be said, a drop of more than 2 points in 2008. For the fourth consecutive year, the globalised profitability of SMEs was higher than that of large
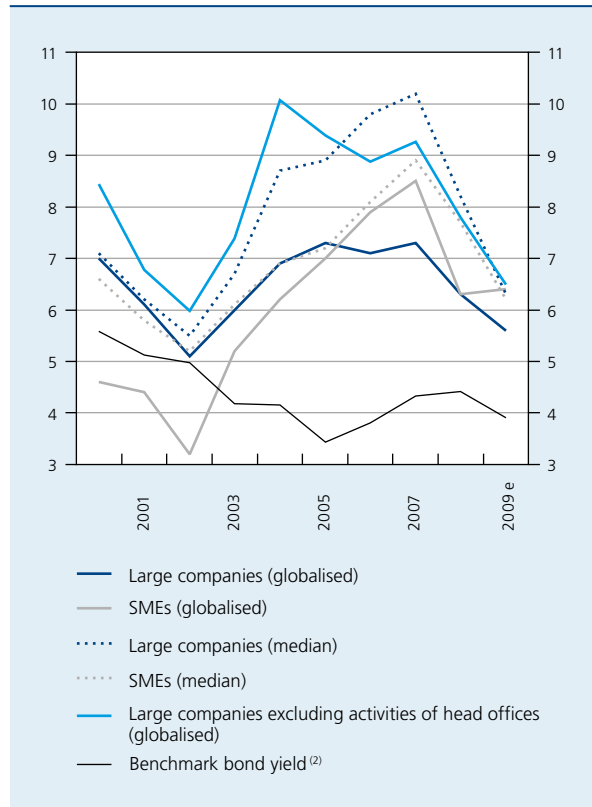
companies, but the latter group's ratio is hindered by the weight of equity capital in the "activities of head offices" (sub-category 70.100 of the Nace-Bel 2008 classification). While more than one-third of the equity capital of the population studied is concentrated in this sector, it represents barely more than 1 % of total value added. If we exclude the few hundred companies that fall into this sector from our calculation, the large companies ratio turns out to exceed that of the SMEs over the long term.

The trend in median ratios shows that the economic downturn has affected the population as a whole. In the span of two years, median profitability fell by 3.9 points in large companies and 2.7 points among SMEs. While 2009 saw yet another significant contraction in financial performances, profitability ratios managed to stay above the lows recorded during the previous downturn, i.e. in 2002. This factor testifies to companies' resilience in the face of an exceptionally severe deterioration in economic conditions.

Combined with ongoing economic uncertainty, the drop in profitability has also encouraged companies to be more conservative in their earnings allocation policies. The number of large companies distributing profits and the sums distributed both shrank in 2008 and 2009, breaking with the upward trend of the past decade. The same correction was seen in SMEs, but only starting in 2009 and to a lesser extent.

The spread between government bond yields and corporate profitability is an interesting measure for evaluating the risk premium available to shareholders. Whereas the spread widened steadily between 2003 and 2007, it has narrowed considerably since then, principally due to weaker company performances, as the OLO benchmark rate has not moved very much in terms of its yearly average. Over 2008 and 2009, equity investments thus lost much of their appeal relative to so-called risk-free investments. It is important to use some caution when making such a comparison, given that shares and government bonds are different financial instruments and, moreover, the vast majority of firms examined here are not listed on the stock exchange.

Annex 4 widens the angle of the analysis by presenting the detailed distribution of the net return on total assets before tax and debt servicing. This ratio is better for analysing the entire distribution because it is available for all firms, unlike the return on equity which can only be calculated in the case of positive equity capital. It has the advantage of being independent of firms' financing structure, and is therefore also referred to as economic profitability. The table shows that over the past two years, both the most profitable and the least profitable segments of the population have been affected by the weakening of profitability.

Lastly, looking at the percentage of companies experiencing a loss is a good way to evaluate companies' ability to generate revenues from their business activities. Despite a significant decline between 2002 and 2007, this percentage jumped sharply over the past two years studied, climbing from 33.2 % in 2007 to 38.4 % in 2009 (table 7). The trend reversal was evident in every sector of activity. In 2009, the accommodation, food service, textiles, wood products, transport and real estate sectors had the largest number of loss-making companies. The fewest were found in the energy, construction, business services, and basic metals sectors.

CHART 6   NET RETURN ON EQUITY (1) AND BENCHMARK BOND YIELD

(percentages)

Large companies (globalised)

SMEs (globalised)

Large companies (median)

SMEs (median)

Large companies excluding activities of head offices (globalised)

Benchmark bond yield (2)

Source : NBB.
(1) Excluding exceptional results.
(2) Gross yield on the benchmark bond (Belgian 10-year OLO government bonds).

TABLE 7 PERCENTAGE OF LOSS-MAKING COMPANIES[1], BY BRANCH OF ACTIVITY

(percentages)

	2005	2006	2007	2008	2009 e
Manufacturing industry	**31.6**	**30.8**	**28.7**	**33.0**	**38.3**
of which:					
Agricultural and food industries	33.5	35.9	33.6	40.0	36.1
Textiles, clothing and footwear	39.0	37.3	36.4	43.4	47.5
Wood, paper products and printing	34.8	33.0	31.2	36.3	44.7
Chemicals and pharmaceuticals	31.2	32.1	29.1	34.2	35.2
Metallurgy and metalworking	26.5	24.1	20.6	25.0	34.4
Metal manufactures	28.8	27.3	27.0	28.6	37.3
Non-manufacturing branches	**35.7**	**34.7**	**33.6**	**35.8**	**38.4**
of which:					
Wholesale and retail trade	35.9	35.1	33.6	36.4	38.8
Transportation and storage	34.4	31.2	29.7	35.2	42.3
Accommodation and food service activities	48.9	49.2	48.3	51.0	52.9
Information and communication	35.5	33.8	31.8	31.8	36.9
Real estate activities	42.1	41.8	41.2	43.9	43.3
Other service activities	31.9	30.3	29.5	30.6	34.2
Energy, water supply and waste	28.5	27.7	26.1	30.4	34.0
Construction	29.3	27.9	27.0	29.5	32.9
Total	**35.4**	**34.4**	**33.2**	**35.6**	**38.4**

Source: NBB.
(1) Negative item 9904 (Profit or loss for the year).

3.2 Solvency

Solvency concerns the ability of firms to honour their commitments, whether short- or long-term. This article analyses it on the basis of three concepts: the degree of financial independence, the extent to which borrowings are covered by the cash flow, and interest expense on financial debt.

The degree of financial independence is equal to the ratio between equity capital and total liabilities. If the ratio is high, the firm is independent of borrowings, which has two beneficial effects: first of all, financial expenses are low and therefore do not weigh heavily on profits; in addition, if necessary, the firm can easily contract new debts on favourable terms. The degree of financial independence can also be interpreted as a measure of the firm's financial risk, since the remuneration of third parties is fixed, unlike the firm's results, which fluctuate over time. Section four of this article examines the relationship between financial independence and the risk of bankruptcy.

In 2009, the globalised financial independence ratio reached 50.7% for large firms and 37.1% in the case of SMEs (chart 7). The upward trend of recent years continued: over the past ten years, the ratio for large firms has gained 10.1 points, and that for SMEs 5.3 points. Since 2005, this upward trend has been stimulated by the new tax allowance for risk capital ("notional interest"). This measure has attracted massive inflows of foreign capital into Belgium with the acquisition of equity stakes in Belgian companies. The foreign counterparties in these deals are generally affiliated companies or companies with capital ties to the target company. If we exclude the "activities of head offices" sector (Nace-Bel 70.100), for which these inflows have been particularly significant, the large company ratio looses 6 points. However, annual changes remain roughly the same.

The trend of improving solvency cuts across the entire population, as shown by the median ratios. In ten years, these ratios have risen by 8.8 points for large companies and 3.6 points for SMEs. While chart 7 gives a picture of constantly improving solvency, an examination of the entire distribution, presented in Annex 4, shows that the trend has principally benefited the most solvent segments of the population. As a result, interquartile ranges have gradually widened over the past decade, from 41.5 % to 49.1 % for large companies and from 48.0 % to 55.3 % for SMEs. With respect to SMEs, the declines in the first quartile and the tenth percentile show a sizeable portion of the population moving against the general trend. It is also significant to note that the percentage of companies with negative equity capital has risen over the past ten years, from 14.7 % in 2000 to 16.8 % in 2009.

The degree of financial independence and its reciprocal, the degree of indebtedness, provide a picture of the general balance of assets and liabilities. While this yardstick is necessary to diagnose solvency, it is insufficient in that it does not allow us to measure companies' ability to repay their debts or the level of cost that those debts entail.

CHART 8   DEGREE TO WHICH BORROWINGS ARE COVERED BY CASH FLOW
(percentages)

- Large companies (globalised)
- SMEs (globalised)
- Large companies (median)
- SMEs (median)

Source : NBB.

CHART 7   DEGREE OF FINANCIAL INDEPENDENCE
(percentages)

- Large companies (globalised)
- SMEs (globalised)
- Large companies (median)
- SMEs (median)
- Large companies excluding activities of head offices (globalised)
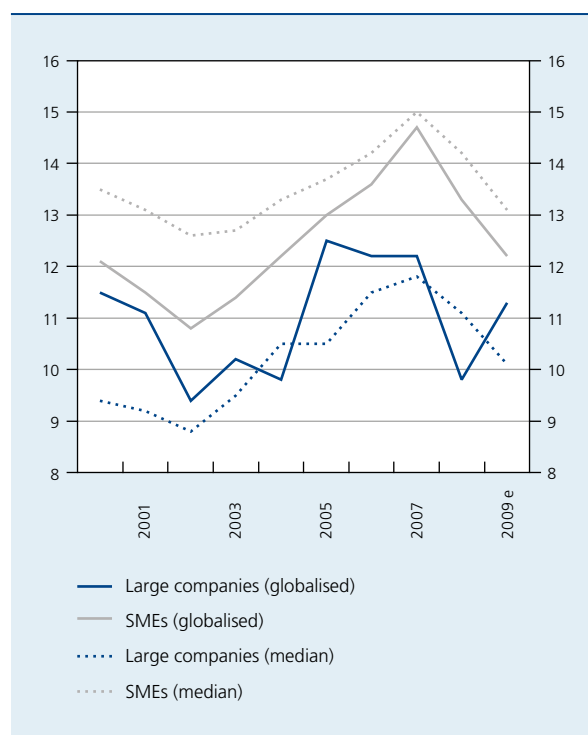
Source : NBB.

The degree to which borrowings are covered by cash flow, which measures the proportion of debts that the firm could repay by allocating the whole of the year's cash flow to paying them back, indicates the firm's repayment capability [1]. The converse of that ratio indicates the number of years which it would take to repay all the debts at a constant cash flow. The information supplied by this ratio supplements that provided by the ratio of financial independence, as a high level of indebtedness may very well be mitigated by a substantial repayment capability, and vice versa.

In 2009, the cash flow coverage ratio generally continued the downward trend it began in 2008 (chart 8). Only the globalised ratio for large companies recovered, bouncing back to 11.3 %, due principally to significant capital gains on the sale of fixed assets in the agriculture and food industry. The globalised ratio for SMEs fell again under the combined impact of weaker cash flow

(1) Cash flow is the net flow of cash generated by the company, i.e. the difference between income received and expenditures paid. As a result, cash flow, which represents the company's ability to finance its operations, is fundamental to the company's development, as it can be used to finance new investments, repay debts or distribute profits.

CHART 9

AVERAGE INTEREST EXPENSES
ON FINANCIAL DEBT

(percentages)

- Large companies (globalised)
- SMEs (globalised)
- Large companies (median)
- SMEs (median)
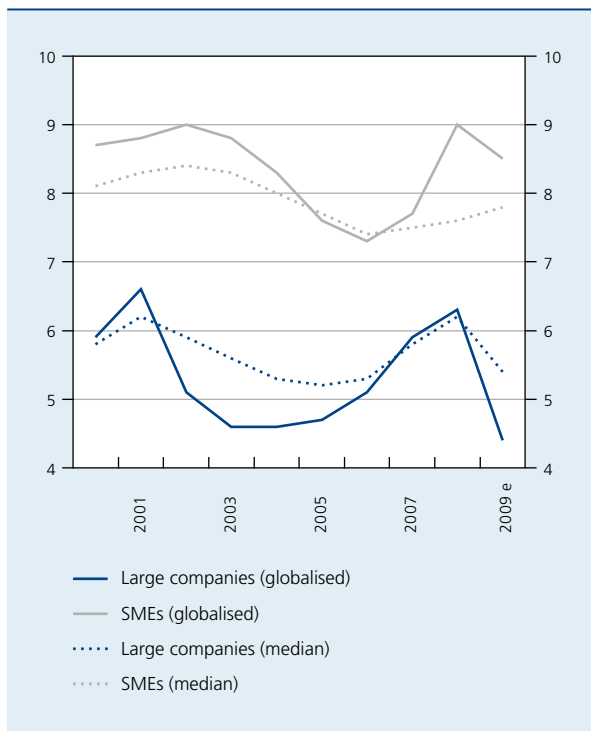
Source : NBB.

and higher debts. The median ratios for both categories of companies lost ground, as did the distribution as a whole (see Annex 4). This deterioration in companies' ability to repay their debts takes some of the shine off the gains made over the same period in terms of financial independence.

The level of average interest expense on financial debt is a way to measure the cost of using external financing sources. In 2009, after increasing for several years, the ratio fell considerably, particularly among large companies. This trend reflects the lower interest rates applied to new bank loans, which began in November 2008 and continued throughout 2009 as a result of rapid monetary policy easing in the euro area. It is important to underline that at the same time, however, companies faced a tightening of other lending conditions on the part of financial institutions. Against a backdrop of economic downturn and increased risk for lenders, and given the ongoing reorganisation of the financial sector, banks frequently require greater guarantees, as well as making smaller loans and charging more in fees.

4. Financial ratios and risk of failure

The Bank is currently developing a financial health indicator for companies that file their annual accounts with the Central Balance Sheet Office. The indicator is conceived as a weighted combination of variables. This combination is achieved through a logistic regression which discriminates between failing companies and non-failing companies. This section presents some of the early results from this effort, in particular the relationship between the risk of failure and the distribution of financial ratios.

The definition of failure is based on a legal criterion : a company is considered to have failed if it has faced bankruptcy or judicial administration. While there is no set definition of a troubled company, the concepts of bankruptcy and judicial administration can be considered close approximations, in light of their legal basis. Bankruptcy assumes that a company has ceased payments and is uncreditworthy[1]. The status of judicial administration, which was replaced by new procedures in 2009, was intended for companies temporarily unable to repay their debts[2]. In this respect, and given the span of financial years being studied (1995-2008), past judicial administration proceedings are considered to be a failure event. Bankruptcies represent more than 95 % of these events.

The Law of 31 January 2009 on business continuity puts greater emphasis on prevention and creates new procedures to replace judicial administration[3]. When the analysis was being conducted, the Crossroads Bank for Enterprises didn't identify yet companies employing these procedures, so it was impossible to evaluate the impact of the law. However, this does not diminish the result, given that the primary goal was to arrive at an objective notion of financial health.

In this section, a company is considered to have failed if it has been involved in bankruptcy or judicial administration proceedings within 1,095 days (i.e. 3 × 365 days) following the closing date of its annual accounts. Other companies are considered as non-failing. The date of failure used is the date upon which the company's legal status changed (to one of bankruptcy or judicial administration) at the Crossroads Bank for Enterprises.

(1) Law of 8 August 1997 on bankruptcies, amended by the Law of 4 September 2002. Article 2 : A tradesman is in a state of bankruptcy if two conditions are met : he must have durably ceased payments and he must be uncreditworthy.
(2) Law of 17 July 1997 on judicial administration. Article 9 §1 : Judicial administration can be opened for any debtor tradesman who cannot settle his debts in due time or if relatively short-term difficulties that oblige him to suspend payments threaten the survival of his business.
(3) The law contains two principal options. The first has to do with confidential amicable agreements that troubled companies may reach with one or more of their creditors. The second has to do with judicial reorganisation, which is split into three procedures : amicable agreements prior to proceedings, judicial reorganisation by collective agreement, and transfer of the company under judicial supervision.

On this basis, it is possible to examine the relationship between financial situation and risk of failure. The population studied refers to the 2006 financial year and includes 213,468 companies, which is a large enough number to draw material conclusions. The distributions presented below use a division in regions of financial ratios. These regions correspond to equal intervals of ratios and, to neutralise the influence of extreme values on the distribution range, the division does not take into account values lower than the 1st percentile or higher than the 99th percentile.

As a result, in chart 10, the first region corresponds to values for degree of financial independence of less than –120.5. Subsequent regions correspond to ratio intervals of 4.5:
– the region 2 corresponds to values greater than or equal to –120.5 and less than –116;
– the region 3 corresponds to values greater than or equal to –116 and less than –111.5;
– ...
– the region 49 corresponds to values greater than or equal to 90.2 and less than 94.7;
– the region 50 corresponds to values greater than or equal to 94.7.

Chart 10 presents the three-year failure rate, alongside with the cumulative frequency curve of companies studied, for each of the 50 regions of the financial independence ratio. In the case of region 33, for example, the chart shows: i) that the region comprises 2.2 % of failing companies (histogram, left-hand scale); and ii) that 40 % of the companies are located in regions 1 to 33 (cumulative frequency curve, right-hand scale), which means they have a financial independence ratio of under 23 %.

The histogram illustrates the clearly negative relationship between financial independence and risk of failure: the three-year rate of failure drops from nearly 14 % in region 1 to less than 0.5 % in region 50. The relationship is not linear and is notably characterised by a plateau between regions 4 and 21. But overall, the lower the degree of financial independence, the higher the risk of failure. This relationship is just what we would expect to find, given how intimately the notion of solvency is tied up with the issue of bankruptcy.

Chart 10 also shows that the distribution of the ratio is heavily asymmetric. A minority of companies are concentrated in the regions with low financial independence:

CHART 10   FAILURE RATE AND CUMULATIVE FREQUENCY BY REGION OF FINANCIAL INDEPENDENCE

(2006 financial year, 213,468 companies)

Percentage of failing companies [2] (left-hand scale)

Cumulative percentage of all companies (right-hand scale)

Regions of financial independence [1]
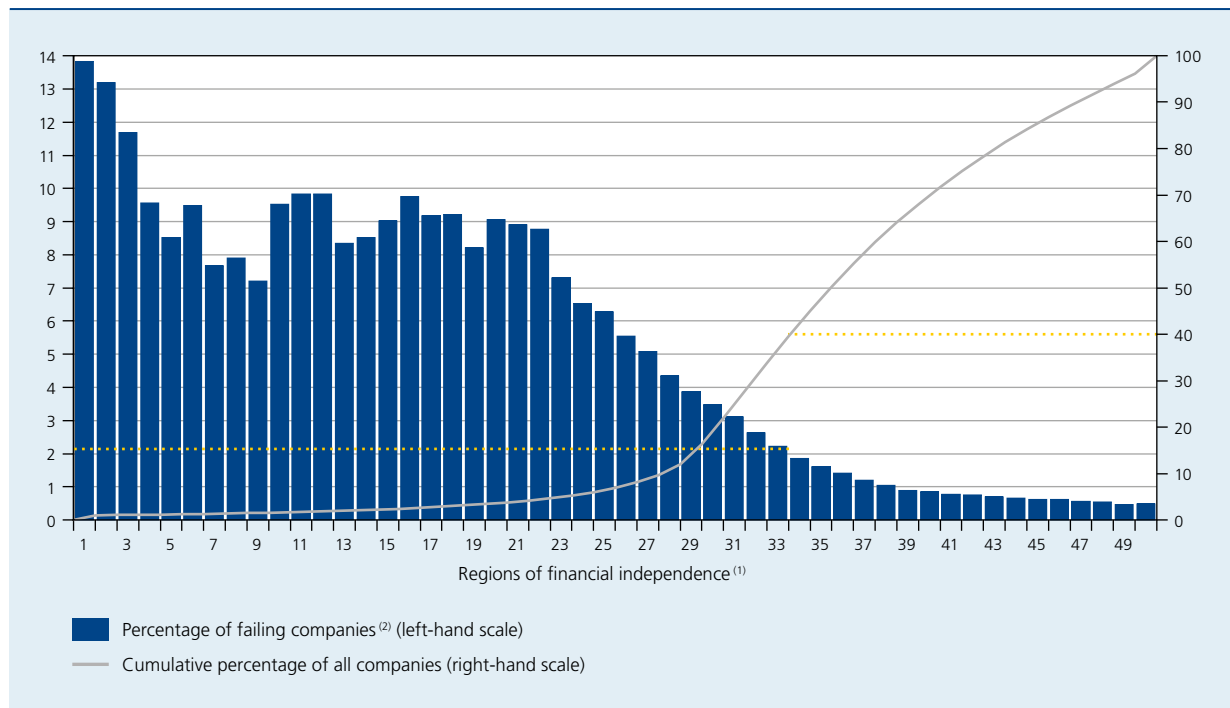
Source: NBB.
(1) The regions correspond to 4.5 % intervals of the financial independence ratio, between the 1st percentile and the 99th percentile:
region 1 = -∞ ; –120.5[; region 2 = [–120.5 ; –116[; region 3 = [–116 ; –111.5[; … ; region 49 = [90.2 ;94.7[; region 50 = [94.7 ; +∞.
(2) Average centred on three regions.

the cumulative frequency curve indicates, for example, that the first 20 regions (i.e. those with highly negative financial independence) contain less than 4 % of the companies studied.

Chart 11 is created along the same lines as chart 10, but deals with the level of short-term indebtedness. This ratio divides debts payable within one year (item 42/48 of the annual accounts) by total liabilities (item 10/49), multiplied by 100. In univariable logistic regressions, the degree of short-term indebtedness proved to be the most discriminating of the ratios studied.

Chart 11 allows us to see that there is a clearly positive relationship between short-term indebtedness and risk of failure: when indebtedness increases, so does the risk of failure. This relationship is also what we would expect to find, as heavily indebted companies are naturally more vulnerable.

As with the degree of financial independence, the relationship is not linear and is characterised by a plateau beyond region 33, i.e. once short-term indebtedness rises above

119.1 %. This plateau suggests that, from a certain level onwards, indebtedness no longer has an effect on the risk of failure: the companies in region 50 (i.e. those with short-term indebtedness of over 176.7 %) are very nearly as likely to fail as the companies in region 33 (i.e. those with short-term indebtedness of between 115.5 % and 119.1 %).

Chart 12 is yet another example, this one dealing with the net profitability of total assets. It shows that there is a negative relationship between profitability and the risk of failure. The rate of failure falls from 13.3 % in region 1 (net profitability less than –40.8 %) to 3.1 % in region 50 (net profitability above 62.4 %).

As with the other two ratios, the relationship is not linear and is characterised by a slight but steady increase in the rate beyond region 27, i.e. for companies that are very profitable (profitability above 15.1 %). This counterintuitive increase is almost entirely attributable to the smallest companies, for which the small denominator (total assets) makes the ratio more volatile and, thus, less meaningful. Furthermore, the cumulative frequency curve shows that this upswing in the rate of failure is due to a minority of

CHART 11 FAILURE RATE AND CUMULATIVE FREQUENCY, BY REGION OF SHORT-TERM INDEBTEDNESS
(2006 financial year, 213,468 companies)

Regions of short-term indebtedness [1]

■ Percentage of failing companies [2] (left-hand scale)

— Cumulative percentage of all companies (right-hand scale)
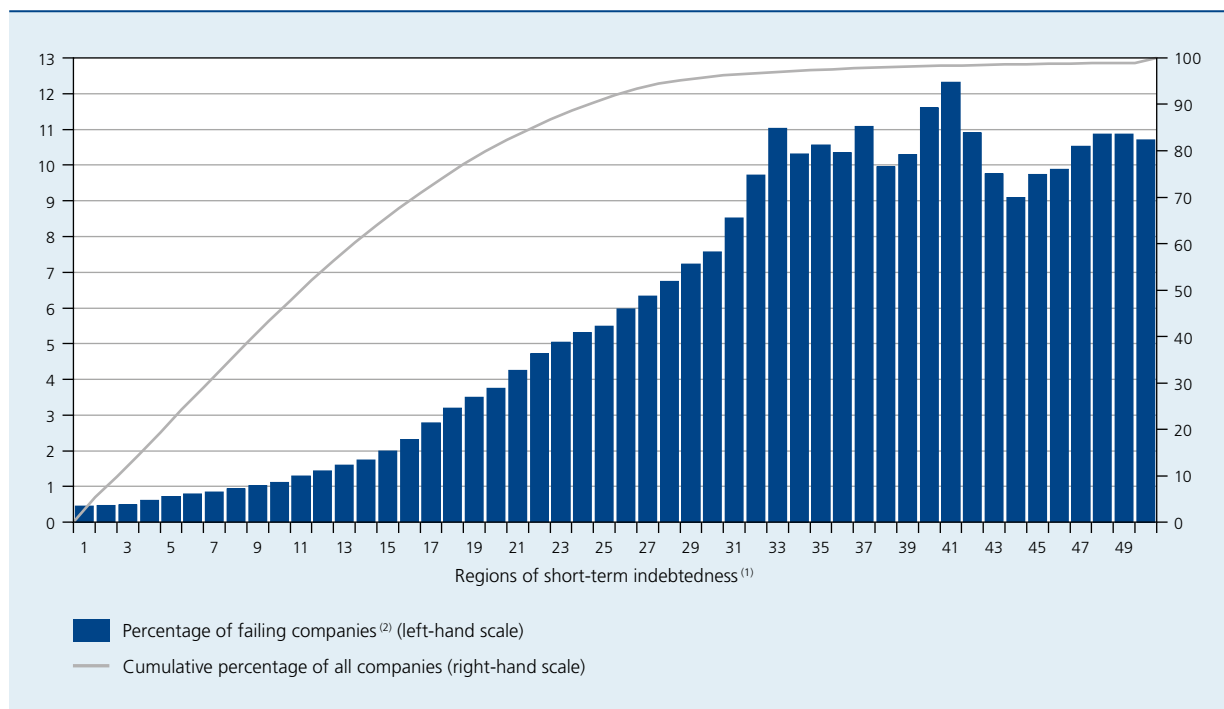
Source: NBB.
(1) The regions correspond to 3.6 % intervals of short-term indebtedness ratios, between the 1st percentile and the 99th percentile: region 1 = [0 ; 4.0[; region 2 = [4.0 ; 7.6[; region 3 = [7.6 ; 11.2[; ...; region 49 = [173.1 ; 176.7[; region 50 = [176.7 ; +∞.
(2) Average centred on three regions.

CHART 12   FAILURE RATE AND CUMULATIVE FREQUENCY, BY REGION OF PROFITABILITY

(2006 financial year, 213,468 companies)

Regions of net profitability of total assets [1]

■ Percentage of failing companies [2] (left-hand scale)

— Cumulative percentage of all companies (right-hand scale)
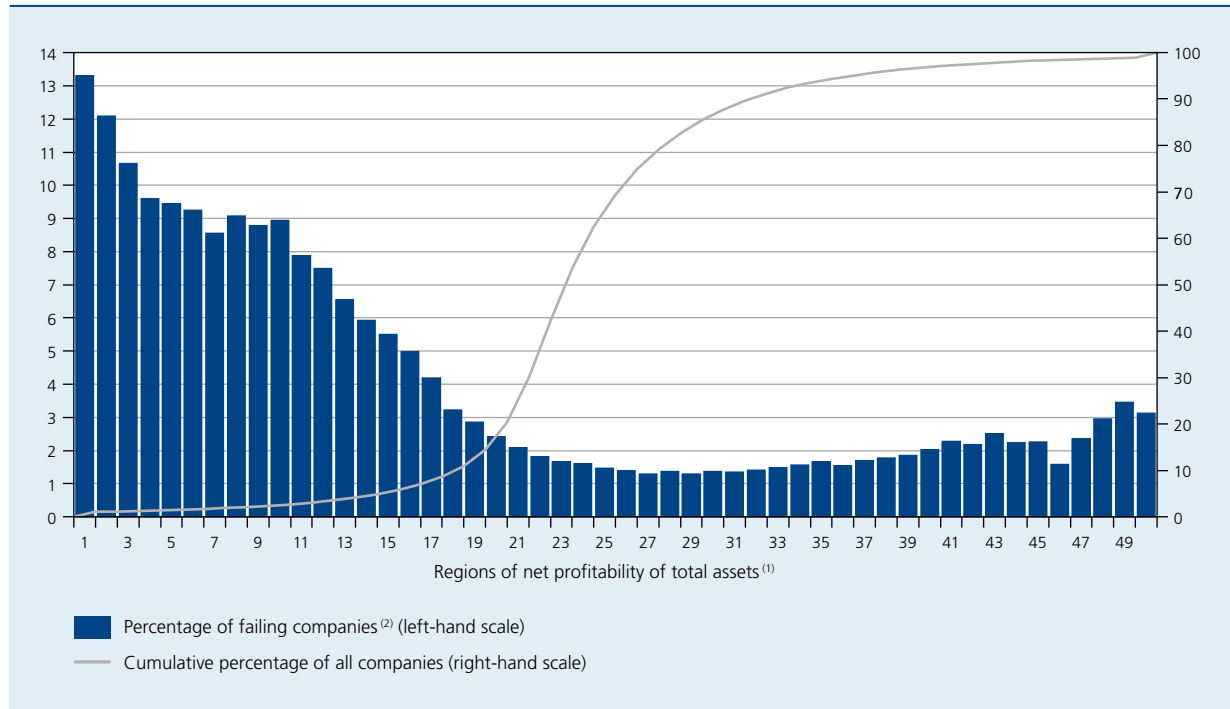
Source : NBB.

(1) The regions correspond to 2.15 % intervals of profitability ratios, between the 1st percentile and the 99th percentile :
region 1 = -∞ ; –40.8[; region 2 = [–40.8 ; –38.6[; region 3 = [–38.6 ; –36.5[; ... ; region 49 = [60.3 ; 62.4[; region 50 = [62.4 ; +∞.
(2) Average centred on three regions.

companies. It also shows that the distribution of profitability is much more symmetrical than that of financial independence : the extreme regions at both ends comprise a very small percentage of companies.

We also studied the financial trajectory of failure events. To this end, we identified each annual account with respect to its proximity in time to the failure. For a given annual account, the time until failure is defined as the difference between the failure date and the closing date of the financial year. Each annual account was assigned one of the following codes :

– DEF01 : if time to failure ≤ 365 days ;
– DEF02 : if 365 days < time to failure ≤ 730 days ;
– DEF03 : if 730 days < time to failure ≤ 1,095 days ;
– ...
– DEF10 : if 3,285 < time to failure ≤ 3,650 days ;
– NODEF : if the annual account was filed by a company with no failure within the 3,650 days following the closing date of the financial year.

This classification allows us to verify the intuition that a company's financial situation becomes less favourable

as the failure event approaches. Chart 13 illustrates this observation in the form of box plots for four ratios : degree of financial independence, net profitability of assets, cash flow coverage of borrowings, and interest charges as a proportion of liabilities. An explanation of box plots is provided in the inset on p. 133.

Chart 13 shows regular trajectories as we move from the NODEF group (companies with no failure over a 10-year period) to the DEF01 group (companies with a failure within one year) : the more imminent the failure, the worse the decline in financial situation. In the vast majority of cases, this deterioration affects the entire distribution, from the 10th to the 90th percentile. This observation holds particularly true in the final years preceding a failure, i.e. for companies in categories DEF01, DEF02 and DEF03.

The distribution of most of these ratios tends to be disperse, what visually diminishes the gaps between the various groups of companies. However, the differences are no less significant. With respect to financial independence, for example, the 90th percentile of the DEF01 group (26.5) is lower than the median of the NODEF group (30.1).

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CHART 13

DEGREE OF FINANCIAL INDEPENDENCE

NET PROFITABILITY OF TOTAL ASSETS
BEFORE TAX AND DEBT SERVICING

DEGREE OF CASH FLOW COVERAGE OF BORROWINGS

INTEREST EXPENSE AS A PROPORTION OF LIABILITIES
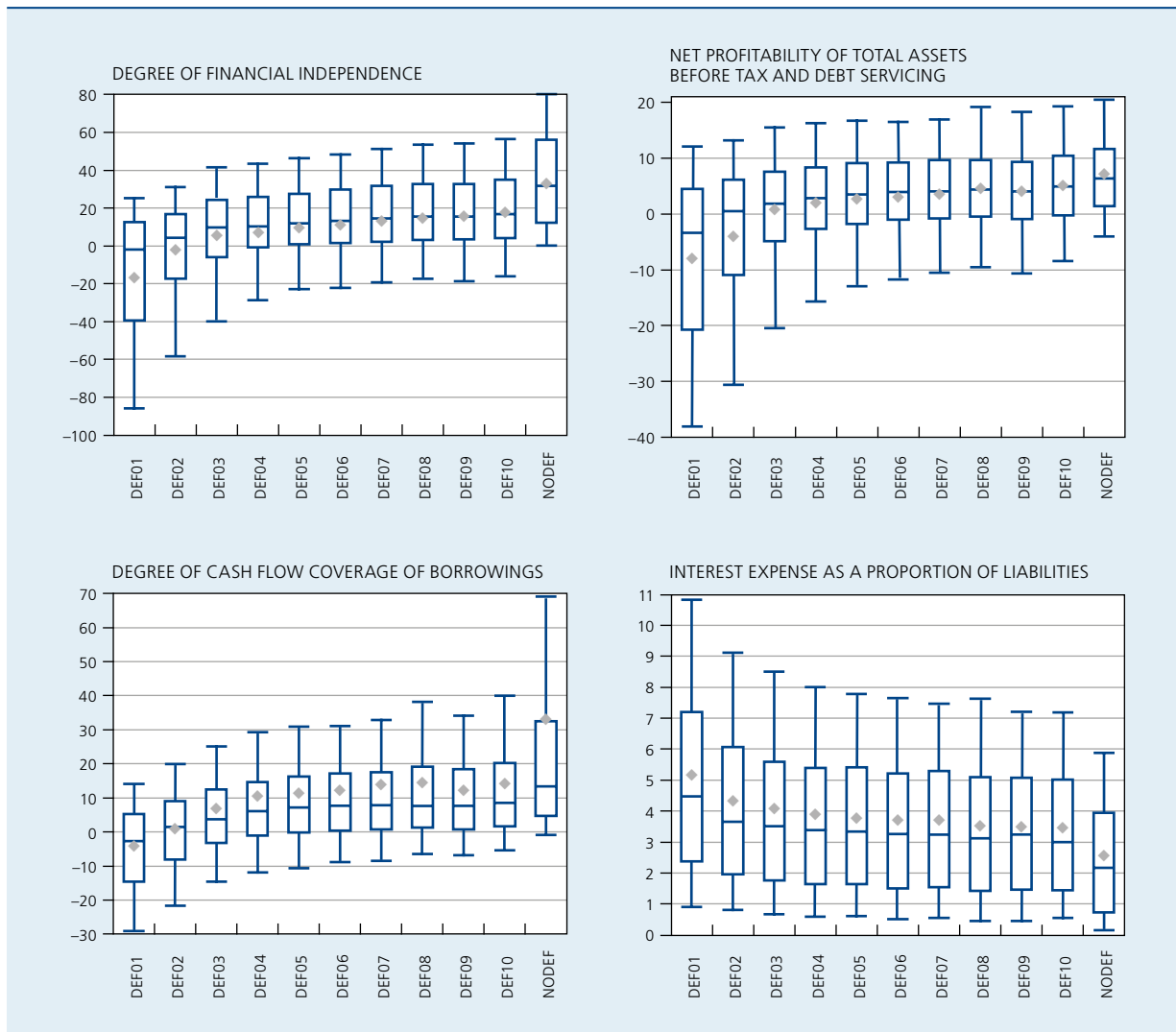
Source : NBB.

In the case of interest charges as a proportion of liabilities, the first quartile of the DEF01 group (2.4) is higher than the median of the NODEF group (2.1).

Conclusion

In 2009, Belgium felt the full brunt of the global economic recession. Over the full year, GDP experienced its most severe contraction since World War II. As in the euro zone as a whole, Belgian GDP growth returned to positive territory in the third quarter of 2009, but has remained relatively weak ever since. Whereas the recession phase thus ended midway through the year, the severity of the financial crisis and the broad downturn in

growth took a heavy toll on households and companies. Businesses faced an unprecedented drop in demand in late 2008 and early 2009, fuelled primarily by the plunge in foreign trade. Prospects remained uncertain after that, including with respect to financing conditions. Under these circumstances, companies made large-scale adjustments. Many industrial companies suspended some or even all of their production, drastically drew down their inventories, and significantly reduced their gross fixed capital formation. Vulnerability also increased : the total number of company failures rose by 10 % in 2008 and 11 % in 2009.

These conditions weighed heavily on the operating performances of non-financial companies. Their total value

Box plots

Box plots (also known as box-and-whisker plots) are a visual representation tool introduced by US statistician John W. Tukey in 1977[1]. They offer a way to visualise differences in distribution between populations, including dispersion and asymmetry. The box plots presented in this article correspond to the following characteristics:
– the top end of the upper whisker corresponds to the 90th percentile;
– the top of the box corresponds to the third quartile;
– the line in the box corresponds to the median;
– the bottom of the box corresponds to the first quartile;
– the bottom end of the lower whisker corresponds to the 10th percentile;
– the grey point corresponds to the winsorised mean[2].
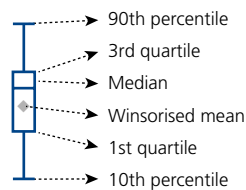
(1) See Tukey J. (1977), *Exploratory Data Analysis*, Addison-Wesley, Reading.
(2) Mean calculated using a distribution winsorised at the 1st and 99th percentiles: for each fiscal year, values below the 1st percentile are assigned the value of the 1st percentile, whereas values above the 99th percentile are assigned the value of the 99th percentile. This transformation makes it possible to neutralise the impact of extreme values when calculating the mean.

added at current prices fell by 4 % in 2009. This was the first decline in more than 15 years. The drop continued a trend that began in 2008, during which the growth in value added had already slowed compared with the previous 5 years. At the same time, personnel costs fell slightly, by 0.3 %, due to a reduction in the number of workers employed as staff and companies' use of systems allowing a certain amount of flexibility in workforce scheduling. As for depreciation, after three years of brisk increase, this growth slowed in 2009 in the wake of a sharp downturn in investment. As a result, total operating costs, determined primarily by staff costs and depreciation, levelled off in 2009, up just 0.1 %.

For the second straight year, growth in operating costs well exceeded growth in value added, resulting in yet another particularly sizeable contraction in the net operating result, by 20.8 %. In the space of two years, it fell by nearly 30 % – a level unheard of since companies began filing their annual accounts with the Central Balance Sheet Office. While economic conditions did take a heavy toll on companies' commercial performance, it is important to remember that operating profit had more than doubled between 2002 and 2007.

Because the production process is increasingly international and foreign markets ever more important, the collapse in world trade was felt most harshly in the manufacturing sector. In this respect, the trends in the various industrial branches of activity are largely attributable to their degree of interconnectedness with the rest of the world: the most pronounced decline in production was seen in industries with the greatest export focus.

In 2009, the globalised return on equity for large companies fell for the second year in a row, whereas SMEs managed to stabilise their ratio after, it must be said, a drop of more than 2 points in 2008. The trend in median ratios shows that the economic downturn affected the entire population: in the span of two years, median profitability fell by 3.9 points at large companies and 2.7 points at SMEs. A study of the entire distribution shows that both the most profitable and the least profitable segments of the population have been affected by the weakening of profitability. Combined with ongoing economic uncertainty, the drop in profitability has also encouraged companies to be more conservative in their earnings allocation policies. The number of large companies distributing profits and the sums distributed both shrank in 2008 and 2009, breaking with the upward trend of the past decade. The same correction was seen at SMEs, but only starting in 2009 and to a lesser extent.

Globalised and median financial independence improved yet again in 2009, building on the upward trend of the past 15 years. Since 2005, this upward trend has continued as

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a result of the new tax allowance for risk capital (notional interest), which has generated substantial increases in equity capital. An examination of the entire distribution, however, shows that the trend has principally benefited the most solvent segments of the population, and that a sizeable portion of SMEs has not participated in the gains.

The final section of the article highlights the links between the risk of failure and the distribution of financial ratios. It emerges that there is a highly negative relationship between financial independence and the risk of failure : the greater the financial independence, the lower the risk of failure. The same type of relationship can be derived for other ratios, including profitability and indebtedness. Statistical analysis also shows that the more imminent the failure, the worse the decline in financial situation, and in the vast majority of cases, this deterioration affects the entire distribution, from the 10th to the 90th percentile.

Annex 1

DEFINITION OF THE RATIOS

	Item numbers allocated	
	full format	abbreviated format
1. Return on equity		
Numerator (N)	9904	9904
Denominator (D)	10/15	10/15
Ratio = N/D × 100		
Conditions for calculation of the ratio:		
12-month financial year		
10/15 > 0 [1]		
2. Net return on total assets before tax and debt servicing		
Numerator (N)	9904 + 650 + 653 − 9126 + 9134	9904 + 65 − 9126 + 67/77
Denominator (D)	20/58	20/58
Ratio = N/D × 100		
Condition for calculation of the ratio:		
12-month financial year		
3. Degree of financial independence		
Numerator (N)	10/15	10/15
Denominator (D)	10/49	10/49
Ratio = N/D × 100		
4. Degree to which borrowings are covered by cash flow		
Numerator (N)	9904 + 630 + 631/4 + 6501 + 635/7 + 651 + 6560 − 6561 + 660 + 661 + 662 − 760 − 761 − 762 + 663 − 9125 − 780 + 680	9904 + 631/4 + 635/7 + 656 + 8079 + 8279 + 8475 − 8089 − 8289 − 8485 − 9125 − 780 + 680
Denominator (D)	16 + 17/49	16 + 17/49
Ratio = N/D × 100		
Condition for calculation of the ratio:		
12-month financial year		
5. Average interest expense on financial debt		
Numerator (N)	650	65 − 9125 − 9126
Denominator (D)	170/4 + 42 + 43	170/4 + 42 + 43
Ratio = N/D × 100		
Condition for calculation of the ratio:		
12-month financial year		
6. Degree of short-term indebtedness		
Numerator (N)	42/48	42/48
Denominator (D)	10/49	10/49
Ratio = N/D × 100		
7. Interest expense as a proportion of liabilities		
Numerator (N)	650	65
Denominator (D)	10/49	10/49
Ratio = N/D × 100		
Condition for calculation of the ratio:		
12-month financial year		

(1) Condition valid for the calculation of the median but not for the globalised ratio.

Annex 2

	NACE-BEL 2008 divisions
Manufacturing industry	**10-33**
of which:	
Agricultural and food industries	10-12
Textiles, clothing and footwear	13-15
Wood, paper products and printing	16-18
Chemicals and pharmaceuticals	20-21
Metallurgy and metalworking	24-25
Metal manufactures	26-30
Non-manufacturing branches	**01-09, 35-82, 85.5 and 9** [1]
of which:	
Wholesale and retail trade	45-47
Transportation and storage	49-53
Accommodation and food service activities	55-56
Information and communication	58-63
Real estate activities	68
Other service activities	69-82
Energy, water supply and waste	35-39
Construction	41-43

(1) Except 64, 65, 75, 94, 98 and 99.

Annex 3

BREAKDOWN OF VALUE ADDED BY SIZE AND BY BRANCH OF ACTIVITY (2008)

	Large companies		SME	
	Value added (€ millions)	% of total	Value added (€ millions)	% of total
Manufacturing industry	40,964	32.5	5,444	13.3
of which :				
Agricultural and food industries	5,809	4.6	770	1.9
Textiles, clothing and footwear	1,325	1.1	317	0.8
Wood, paper products and printing	2,439	1.9	809	2.0
Chemicals and pharmaceuticals	10,291	8.2	117	0.3
Metallurgy and metalworking	6,046	4.8	1,521	3.7
Metal manufactures	8,383	6.6	712	1.7
Non-manufacturing branches	85,117	67.5	35,531	86.7
of which :				
Wholesale and retail trade	25,749	20.4	10,141	24.7
Transportation and storage	12,732	10.1	2,789	6.8
Accommodation and food service activities	1,226	1.0	1,709	4.2
Information and communication	10,214	8.1	1,528	3.7
Real estate activities	2,078	1.6	2,483	6.1
Other service activities	16,212	12.9	7,424	18.1
Energy, water supply and waste	8,348	6.6	240	0.6
Construction	5,522	4.4	6,696	16.3
Total	126,081	100.0	40,975	100.0

Source : NBB.

Annex 4

DISTRIBUTION OF NET RETURN ON TOTAL ASSETS BEFORE TAX AND DEBT SERVICING
(percentages)

	2000	2005	2006	2007	2008	2009 e
Large companies						
90th percentile	19.7	23.2	23.9	24.3	23.1	20.5
3rd quartile	10.0	11.9	12.6	12.9	12.0	10.2
Median	4.3	4.7	5.1	5.5	4.9	3.8
2nd quartile	0.8	1.0	1.3	1.5	1.0	0.0
10th percentile	−6.4	−5.6	−4.6	−4.7	−5.9	−9.7
Interquartile range	*9.1*	*10.9*	*11.3*	*11.4*	*11.0*	*10.2*
SME						
90th percentile	24.6	25.8	26.4	27.8	27.8	25.5
3rd quartile	12.6	12.9	13.3	14.0	13.5	12.3
Median	5.3	5.1	5.3	5.7	5.3	4.6
2nd quartile	0.1	−0.4	−0.2	0.0	−0.4	−1.0
10th percentile	−10.1	−13.0	−12.5	−11.9	−13.4	−15.9
Interquartile range	*12.5*	*13.3*	*13.5*	*14.0*	*14.0*	*13.3*

Source : NBB.

TABLE 2 DISTRIBUTION OF DEGREE OF FINANCIAL INDEPENDENCE

(percentages)

	2000	2005	2006	2007	2008	2009 e
Large companies						
90th percentile	79.0	83.3	84.5	85.8	86.0	88.4
3rd quartile	51.5	57.0	58.4	59.7	60.9	63.9
Median	26.2	30.8	31.7	32.2	32.7	35.1
2nd quartile	10.0	12.4	13.5	13.6	13.7	14.8
10th percentile	0.4	0.1	0.5	0.4	0.2	0.2
Interquartile range	*41.5*	*44.6*	*44.8*	*46.1*	*47.3*	*49.1*
SME						
90th percentile	83.4	84.6	85.1	85.6	86.3	88.0
3rd quartile	57.0	59.7	60.0	60.8	61.5	63.7
Median	28.7	30.5	30.9	31.1	31.4	32.5
2nd quartile	9.1	8.8	8.7	8.8	8.5	8.4
10th percentile	−14.9	−20.7	−20.9	−20.6	−20.9	−25.8
Interquartile range	*48.0*	*50.9*	*51.3*	*52.0*	*52.9*	*55.3*

Source : NBB.

TABLE 3 DISTRIBUTION OF DEGREE TO WHICH BORROWINGS ARE COVERED BY CASH FLOW

(percentages)

	2000	2005	2006	2007	2008	2009 e
Large companies						
90th percentile	52.0	61.4	69.6	73.5	75.4	74.6
3rd quartile	23.8	26.5	29.0	30.5	30.2	29.1
Median	9.4	10.5	11.5	11.8	11.1	10.1
2nd quartile	2.0	2.0	2.5	2.6	1.9	1.2
10th percentile	−4.8	−4.9	−4.2	−4.5	−5.7	−9.9
Interquartile range	*21.8*	*24.5*	*26.5*	*28.0*	*28.4*	*27.9*
SME						
90th percentile	76.8	85.9	90.0	96.4	96.7	97.6
3rd quartile	33.2	35.7	37.1	39.4	38.7	37.3
Median	13.5	13.7	14.2	15.0	14.2	13.1
2nd quartile	3.3	2.6	2.9	3.2	2.4	1.8
10th percentile	−7.2	−9.8	−9.2	−8.6	−10.3	−14.1
Interquartile range	*29.8*	*33.1*	*34.2*	*36.2*	*36.3*	*35.5*

Source : NBB.