Recent developments in the financial situation of firms

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Introduction

Each year, in the December issue of the Economic Review, the Bank describes the developments reflected in the annual accounts of non-financial corporations. By the autumn, the Central Balance Sheet Office already has a representative sample of annual accounts for the previous year. The conclusions based on that sample can therefore be extrapolated to the population as a whole.

This year, the analysis was particularly difficult because of the transposition into Belgian law of Directive 2013/34/EU on the annual financial statements, consolidated financial statements and related reports of certain types of undertakings. The new provisions make a number of changes, including significant revision of the concepts of large and small undertakings within the meaning of the Company Code and introducing the concept of a micro-company. They also modify the content of the annual accounts and the accounting treatment of certain items such as research costs and exceptional results. Applicable to financial years from 1 January 2016 onwards, these new rules imply an unprecedented break in the series of Central Balance Sheet Office data, causing various problems of interpretation and comparability. On the occasion of these changes, the population studied was totally revised, as were the analysis procedures. The first part of this article deals with these various methodological aspects. As every year, the second part presents the aggregate picture concerning the main items of the operating account. The third part assesses the financial situation of the firms on the basis of such factors as their profitability and solvency ratios. The fourth part looks into the participation links between firms as indicated by the information in the annual accounts.

1. Methodological aspects

1.1 Impact of the EU Directive on financial statements

The Law and the Royal Decree of 18 December 2015 transposed into Belgian law Directive 2013/34/EU of the European Parliament and of the Council of 26 June 2013 on the annual financial statements, consolidated financial statements and related reports of certain types of undertakings. The new regulations apply to financial years starting after 31 December 2015. Their main implications are discussed below.

New size criteria and new annual accounts formats were introduced. A firm is now considered small – and can therefore use an abbreviated format – if on the closing date of the last financial year it does not exceed one of the following limits:

- annual average number of employees: 50 FTE[(1)];
- turnover (excluding VAT): € 9 000 000 (against € 7 300 000 previously);
- balance sheet total: € 4 500 000 (against € 3 650 000 previously).

The Law also introduces the concept of "micro-companies", a concept which did not exist before. Micro-companies are small firms – according to the size criteria mentioned above –

(1) The threshold of 100 FTE which automatically implied submission of full-format accounts even if the turnover criteria and balance sheet total were not exceeded has been dropped. The concept of the number of employees has also been extended to take account of company employees working abroad.

which are not linked to any subsidiary or parent company and do not exceed more than one of the following limits:
– annual average number of employees: 10 FTE;
– turnover (excluding VAT): € 700 000;
– balance sheet total: € 350 000[1].

Micro-companies can use a special format, the "micro" model, to file their annual accounts. That model comprises a balance sheet and a profit and loss account which are the same as in the abbreviated model, but with a smaller annex.

As in the past, firms which do not meet the criteria applicable to small companies have to file accounts in the full format. It should be noted that companies listed on the stock market have to use the full-format model regardless of their size.

Furthermore, while the size criteria previously had to be calculated on a consolidated basis for firms belonging to a group, the new legislation specifies that the criteria now apply on an individual basis, except for parent companies and companies forming a consortium (whose size must still be measured on a consolidated basis).

The appearance of micro-companies and the change in the size criteria imply a break in the data series, and consequently problems of interpretation and comparability. In particular, there are significant revisions to the concepts of large and small firms within the meaning of the Company Code. Apart from the adjustment of the thresholds, their application at the level of each legal entity rather than at consolidated level significantly alters the scope of the financial analysis according to size. The financial mechanisms operating within groups of firms in fact have marked repercussions on the accounting position of companies: among other things, they affect the capital, intra-group claims and debts, the structure and stability of the profit and loss account, and the cash flow (notably via cash pooling).

Table 1 presents the changes in the type of format filed by companies following introduction of the new models at the Central Balance Sheet Office at the beginning of April 2017. We find that 83 % of companies which had filed full-format accounts for 2015 did the same for 2016. That proportion could change in the future as it is likely that not all firms have already adjusted to the new regulations. The changes were much greater in regard to the number of abbreviated format accounts, since more than half of them switched to a microformat in 2016[2]. It must be remembered that, in practice, and as was already the case previously, it is generally impossible to check whether firms respect the size criteria, owing to the complexity of the parameters to be considered and the non-availability of certain key data such as turnover, which is not reported in the vast majority of abbreviated and micro formats.

Finally, the new legislation changes the presentation and/or recording of various items. One of the most notable changes is that the profit and loss account no longer includes a section on the exceptional result: from now on, exceptional elements have to be broken down within the operating result and the financial result, as non-recurring income and charges. The new Law also reserves different treatment for research costs and development costs: the former have to be written off during the year, while the latter can still be capitalised. The impact of this last change is assessed in section 2.3.

1.2 Population studied

On the occasion of the break in the series mentioned above, the population studied and the analysis procedures

(1) For details of the rules on application of these criteria, see Opinion of the Accounting Standards Board of 13 April 2016 (CNC 2016/3).
(2) As regards companies which did not file accounts for 2015 but did do so for 2016, by far the majority were new start-ups

TABLE 1 CHANGE IN THE TYPE OF FORMAT FILED BY FIRMS
(companies filing their 2016 accounts after 15 April 2017)

Format filed for 2015	Format filed for 2016		
	Full format	Abbreviated format	Microformat
Full format	15 150	2 923	94
Abbreviated format	552	117 220	123 036
No accounts filed	328	10 713	3 823

Source: NBB.

were totally revised. The population studied now broadly corresponds to companies in the non-financial sector (S11) as defined by the National Accounts Institute.

However, certain categories of firms are excluded from this group. The main exclusion concerns public enterprises, as the financial analysis principles normally applied to private companies cannot be directly transposed to them in the great majority of cases: except in a few cases, these companies are not active on normal competitive markets and are distinguished by a series of specific characteristics relating to such matters as regulation, pricing, funding method (subsidies) and company object. Most of them are public utility companies in a (natural) monopoly situation, such as public transport companies, network distribution companies (electricity, gas, water, etc.) and companies managing public infrastructures (airports, ports, etc.): they also include public enterprises of a social character or those acting in the public interest, such as social housing companies, nursing homes, care homes, economic development agencies, environmental management companies, etc. Almost all these companies (of which there are several hundred) were thus excluded from the analysis on the basis of the list of public entities drawn up by the National Accounts Institute. Only public enterprises active on sufficiently competitive markets were retained in the population, such as Proximus group companies.

The population was filtered further to eliminate as many holding companies and treasury centres as possible: these companies were identified on the basis of the share of their balance sheet represented by financial fixed assets and intra-group claims. Finally, some companies with a specific legal form were excluded, as were those in the process of judicial winding-up.

The population thus defined comprises just under 333 000 sets of annual accounts for the 2015 financial year, i.e. the last complete financial year.

1.3 Constant sample

As every year, the annual accounts relating to the last financial year studied – in this case 2016 – were not all available at the time of the analysis. That is because a considerable number of sets of annual accounts are filed late or fail the arithmetical and logical checks conducted by the Central Balance Sheet Office. The data relating to 2016 are therefore estimated on the basis of a constant sample. The sample comprises firms which filed annual accounts covering a 12-month financial year for both 2015 and 2016. The method involves extrapolating the 2016 results according to the changes seen within the sample, which are presumed to be representative of the changes affecting the population as a whole. As verified in previous editions of this article, that assumption is largely borne out: in the majority of cases, the extrapolations give a good indication of the direction and scale of the real movements.

This year's sample was drawn on 11 September 2016. It comprises 256 502 sets of annual accounts, or 75.2 % of the total number of sets of accounts filed for the 2015 financial year. Measured in terms of value added, the rate of representativeness comes to 82.3 %. While the representativeness is similar to that of previous samples in terms of the number of firms, it is slightly lower in terms of value added. That is due to an increase in the number of annual accounts failing the Central Balance Sheet Office checks (particularly as a result of problems in interpreting the new legislation) or filed in PDF format (which implies manual entry at the Central Balance Sheet Office and lengthens the processing time).

2. Aggregate developments in the operating account

2.1 Economic situation in 2016

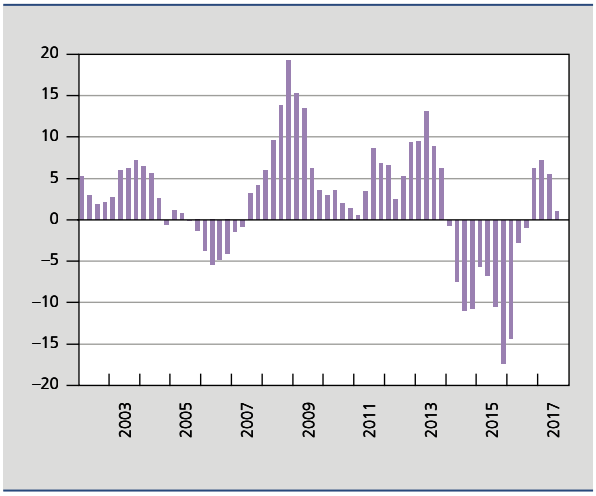
In line with the two preceding years, economic growth remained moderate in 2016: over the year as a whole, the volume of GDP grew by 1.5 % (compared to 1.4 % in both 2015 and 2014). Economic growth therefore proved to be firmly anchored, despite the repercussions of the terrorist attacks which affected the tourism sector, hotels and restaurants. Business confidence was clearly rising throughout the year. The Bank's 2016 Annual Report and the economic projections published in another article in this Economic Review give a detailed account of the economic climate prevailing in Belgium.

Against that backdrop, the decline in the number of bankruptcies recorded in 2014 (–8.6 %) and in 2015 (–9.1 %) continued over 2016 as a whole, although the pace was slower (–6.1 %)[1]. At the end of these three consecutive years of decline, the number of bankruptcies in 2016 reached its lowest level since 2009. However, it should be noted that the year-on-year change in 2016 masks a turnaround during the year,

(1) It must be remembered that there is a negative correlation between the quarterly growth of bankruptcies and GDP growth, with a coefficient of –0.47 over the period 2001-2017. The introduction of a time lag of one or two quarters between the two variables results in a less marked correlation (–0.35 with a time lag of one quarter, –0.21 with a time lag of two quarters).

CHART 1 NUMBER OF BUSINESS BANKRUPTCIES IN BELGIUM (1)

(percentage changes compared to the corresponding quarter of the previous year)



Source: FPS Economy, SMEs, Self-employed and Energy, own calculations.
(1) Data smoothed by a three-quarters-centred moving average.

as the number of bankruptcies began rising again from the third quarter of 2016. This increased vulnerability is very largely attributable to Brussels firms, and more especially those active in the hotel and catering sector, construction, business services, trade and transport. The March 2016 terrorist attacks and various problems concerning urban planning are often invoked to explain this rise in vulnerability in the capital. In contrast, the increase in bankruptcies was very small in the Flemish Region and the Walloon Region.

It must also be said that various factors may distort the bankruptcy statistics as indicated by the data reported by the commercial courts to the Crossroads Bank for Enterprises. For instance, the conditions for applying the Law on Continuity of Enterprises were tightened up in 2013 and 2015, leading to a steep fall in the number of debt moratoriums granted by the commercial courts and, in all probability, triggering the bankruptcy of firms which would previously have qualified for a moratorium. Similarly, internal organisational aspects in the commercial courts may cause bottlenecks followed by catching up in the processing of the data submitted to the Crossroads Bank for Enterprises.

2.2 Aggregate developments in the operating account

In the economic environment described above, the total value added created by non-financial corporations, i.e. the difference between sales revenues and the cost of goods and services provided by third parties, increased by 4.8 % at current prices in 2016 (see table 2). However, it must

TABLE 2 DEVELOPMENTS IN THE MAIN AGGREGATES OF THE OPERATING ACCOUNT

(at current prices)

	Percentage changes compared to the previous year						€ million	Percentages of value added
	2011	2012	2013	2014	2015	2016 e	2016 e	2016 e
Value added	**4.3**	**0.9**	**1.5**	**1.8**	**3.2**	**4.8**	**178 648**	**100.0**
Staff costs (–)	5.2	2.8	1.8	1.1	1.1	2.5	97 810	54.7
Other cash operating expenses (1) (–)	7.4	2.3	0.5	-0.2	4.3	6.7	9 593	5.4
Gross operating result	**2.6**	**-2.2**	**1.3**	**3.1**	**6.3**	**8.0**	**71 246**	**39.9**
Depreciation and write-downs (2) (–)	5.5	3.5	2.4	2.4	0.1	13.0	35 084	19.6
Other non-cash operating expenses (3) (–)	–14.1	12.0	4.4	-35.3	26.0	18.1	1 138	0.6
Net operating result	**0.8**	**-7.9**	**0.0**	**5.4**	**12.3**	**3.1**	**35 024**	**19.6**

Source: NBB.
(1) Mainly operating taxes and charges.
(2) On tangible and intangible fixed assets and start-up costs (item 630).
(3) Write-downs on inventories, orders in progress and trade receivables, plus contingency provisions.

be pointed out that the aggregate changes in the profit and loss account are increasingly distorted by one-off operations in a small number of firms, belonging in most cases to multinational groups. Examples may include the reorganisation of commercial transactions or the method of invoicing fellow group companies based abroad. Although such operations do not generally affect the economic reality of activity, they may cause considerable variations in the operating account of the Belgian companies concerned. That was the case in 2016, a year in which significant operations of this type affected the results of the pharmaceuticals industry. If that branch is excluded from the analysis, the total value added grew by 3.3 % in 2016, a rate comparable to that in 2015.

The value added that a business generates enables it to cover its operating expenses and make an operating profit on the excess. Taking all firms together, staff costs – which represent the major part of the operating expenses – increased by 2.5 % in 2016. That rise was due mainly to the expansion of employment, up by 1.8 % in full-time equivalents, by far the biggest increase in the past five years. After having more or less stagnated in 2015, hourly labour costs in the private sector declined in 2016, owing to new reductions in employers' contributions effective from 1 January and 1 April, the deferred effects of the index jump on certain sectoral indexation mechanisms, and the modest rise in negotiated pay increases.

After taking account of the residual cash operating expenses [1], the gross operating result was up by 8.0 % in 2016, a further improvement compared to previous years. Excluding the pharmaceuticals industry, the increase came to 4.2 %. Overall, this new rise in the gross operating result reflects an expansion of activity combined with cost moderation, particularly as regards wages and commodities. Although commodity prices did edge upwards during 2016, they are still well below the average for preceding years, when they had fallen steeply.

After staff costs, the main operating expenses are depreciation and write-downs on tangible and intangible fixed assets, and start-up costs. While the rate of increase in these costs had fallen steadily since 2011, dropping to virtually zero in 2015, it jumped to 13 % in 2016. However, this development, which considerably depresses the net operating result, is hardly significant since it largely reflects the changes in the method of recording research costs, discussed below.

(1) Mainly operating taxes and charges

(2) See Opinion of the Accounting Standards Board of 10 October 2012 (CNC 2012/13).

(3) More specifically, this is the deduction for investment in environment-friendly R&D and the tax credit for R&D.

2.3 Recording of research costs and impact on the result

Up to 2016, subject to certain conditions, Belgian law allowed businesses to capitalise research and development (R&D) costs incurred during the year as intangible fixed assets, and then to write them off gradually. However, pursuant to Directive 2013/34/EU, which aims to harmonise the structure and content of annual accounts at European level, it is now only permissible to capitalise the development costs.

According to the Belgian Accounting Standards Board [2], the research phase corresponds to "all original work systematically conducted in the hope of gaining an understanding and new scientific or technical knowledge", while the development phase concerns "the actual implementation of designs or studies for the production of materials, appliances, products, processes, systems or services which are new or considerably improved, by using discoveries made or knowledge acquired, before the start of commercial production". The development phase is therefore certain and specific in character, whereas the research phase is not.

In Belgium, certain tax provisions aim to promote R&D in companies [3]. The use of these schemes is connected with the existence of fixed assets in the accounting statements of the firms concerned, and hence the capitalisation of these R&D expenses. Since research costs can no longer be recorded as assets, the transposition into Belgian law of the EU Directive was accompanied by special accounting treatment for these costs. All expenditure incurred in respect of research during a financial year beginning after 31 December 2015 and recorded as intangible fixed assets must be written off immediately and in full : the amount of the investment and the – identical – amount of the amortisation are both shown in the *ad hoc* annex. At the end of the financial year, as the net book value of the intangible asset in question is zero, it is not included in the balance sheet. It should be noted that research costs incurred in previous years qualify for a transitional arrangement : they can continue to be shown under the assets and remain subject to the amortisation rules previously in force. Development costs can still be capitalised and written off over the life of the intangible fixed asset created. The maximum period for writing off these assets is now ten years, compared to the previous five-year limit.

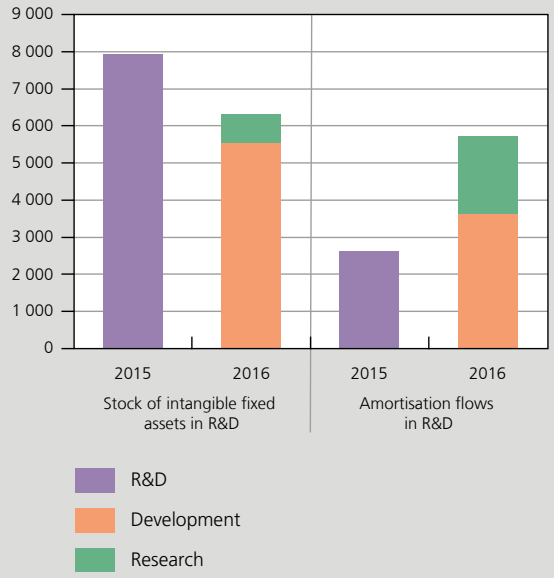
To take account of these changes, the table in the annex concerning R&D costs incorporated in the full-format model[1] was split for the financial years commencing after 31 December 2015, so as to show development costs and research costs separately, as well as the depreciation and write-downs affecting their book value.

The analysis of the available data for firms which filed full-format accounts for both 2015 and 2016 shows that the total amount of R&D costs recorded as assets declined by 20 % between 2015 and 2016, while at the same time the amortisation flows doubled (see chart 2). In 2016, research costs recorded under the assets still represented 12 % of total R&D costs: this concerned the residual value of the research costs previously capitalised and not yet entirely written off. Amortisation of research costs amounted to 37 % of the total. It must be pointed out that this expenditure is heavily concentrated: in 2016, fewer than 40 firms reported having incurred research costs, and more than two-thirds of that expenditure was incurred by a single firm in the pharmaceuticals industry.

However, the new tables in the annex were not used uniformly by all firms. For example, some companies did not complete the items in question, whereas they explicitly refer to the impact of the new rules in their management report. It is therefore tricky to estimate the exact impact of the new rule. However, if we neutralise the change in the amortisation of R&D between 2015 and 2016, the net operating result of companies as a whole would have grown by 12.2 %, compared to barely 3.1 % without any adjustment.

CHART 2 IMPACT OF THE CHANGE IN THE METHOD OF WRITING OFF RESEARCH COSTS

(€ million, large firms[1])

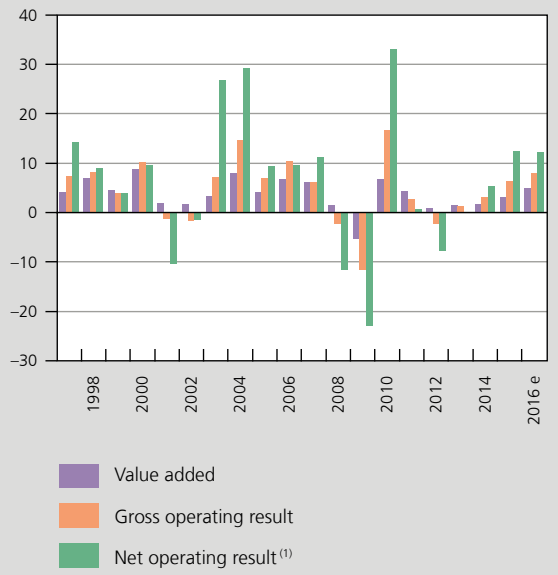


Source: NBB.

(1) Firms filing full-format accounts for both 2015 and 2016.

CHART 3 LONG-TERM DEVELOPMENTS IN THE MAIN AGGREGATES OF THE OPERATING ACCOUNT

(percentage changes compared to the previous year)



Source: NBB.

(1) Trend given constant amortisation of R&D in large firms between 2015 and 2016.

By way of indication, chart 3 presents the long-term trend in the main aggregates of the operating account, namely value added and gross and net operating results (the latter adjusted for the amortisation of R&D costs in 2016). In particular, we can see the influence of the economic climate on corporate performance, such as the rather weak environment in the early 2000s, the 2008-2009 recession, and the subsequent recoveries.

3. Trend in the financial situation of companies

The financial analysis which follows is based on the theory of interpretation of the annual accounts from which a number of ratios have been used. The latter are

(1) In the abbreviated and micro formats, the annex does not provide a breakdown of intangible fixed assets by type. Consequently, it is not possible to separate research and development costs in those formats.

defined in detail in Annex 1. The ratios are presented mainly in the form of globalisations and medians. The globalisation of a ratio divides the sum of the numerators of all companies by the sum of their denominators. The median is the central value in an ordered distribution : for a given ratio, 50 % of companies will have a ratio which is above the median and 50 % will have a ratio below it. The two measures are complementary because they meet different needs. By taking account of the weight of each observation in the numerator and the denominator, the globalisation mainly reflects the situation of the largest firms. Conversely, the median reflects the trend for the whole distribution as it is influenced equally by all firms, regardless of their size.

3.1 Profitability

In this article, profitability is studied according to four ratios (see chart 4) : the margin on sales (calculated for large firms only), the return on the operating assets, the return on the total assets and the return on equity.

The return on sales is traditionally measured by the net margin on sales. That provides an indication of the firm's ability to make a profit on its sale proceeds after deducting all the operating costs, excluding financial and exceptional items and taxes. Since the change in the operating result which appears in the numerator is distorted in 2016 by the modification of the accounting rules on the amortisation of research costs, we also show the gross indicator which reports the operating profit before non-cash expenses. The return on the operating assets compares the recurring operating result[1] with the short- and long-term operating assets. This ratio expresses the commercial performance in relation to the balance sheet items directly allocated to operating activities. The return on the total assets, or economic return, measures the net result before tax and financing costs in relation to the whole of the resources used, i.e. the total assets. The profit is considered before taxes and financial charges so as to be unaffected by the tax system and the financing policy. The ratio can be calculated excluding exceptional – or non-recurring – results if the focus is on the normal business result. The return on equity, or financial return, divides the profit after tax by the total equity. It indicates the return that shareholders obtain from the activities of the business.

The ratios for the sales margin and the return on the operating assets, which have the operating result as the numerator, both assess the commercial performance of firms, one on the scale of large companies only and the other for all firms. While the levels of these two indicators are different, they display a similar trend. In the globalised data, the 2008-2009 recession led to a fall in the ratios, which subsequently stabilised between 2011 and 2014 at well below their pre-crisis levels. A recovery which began in 2015 was confirmed in 2016 thanks to falling commodity prices – despite a dip followed by a revival during 2016 – and a favourable exchange rate against the US dollar combined with a reduction in labour costs. Nevertheless, the median indicators present a less favourable picture for the past two years : for example, the ratio measuring the gross return on the operating assets regained a level comparable to the pre-crisis figure from 2010, but has hardly changed since then, showing that all firms did not benefit equally from the recent improvement in the economic environment.

The ratios for the return on total assets and the return on equity[2] broaden the performance concept considered by including the financial and exceptional results. They, too, exhibit similar profiles, although the second is more volatile than the first since the result is compared to a lower denominator. The rate of return on the total assets in globalised terms has dropped by around 3 percentage points below the pre-crisis levels, hovering around 5 % since 2013. Over the long term, part of the decline is due to the influence of the exceptional results, which made a substantial contribution towards supporting corporate profitability in the pre-crisis years – up to 1.7 percentage points in 2005 – whereas that contribution has been fairly modest since 2013. It should be noted that the median ratios, whether or not they include the exceptional results, have been remarkably stable over time – with a standard deviation of just 0.2 percentage point over the past fifteen years – and that the divergences between the globalised and median series (which were very large in the first ten years of the period under review) have since been totally eliminated, as the values recorded have been in the region of 5 % since 2013, whichever concept is used.

Although they show profitability in different forms, the ratios which have just been discussed are (very) closely correlated : after winsorisation at percentiles 5 and 95 (an essential process owing to some extreme values)[3], the correlation coefficients fall between +0.53 and +0.94 depending on the pairs of ratios considered. By way of indication, chart 5 shows two examples of scatter plots for a random sample of 1 000 sets of annual accounts. Apart from the clearly positive correlation, this chart reveals

(1) Transposition of Directive 2013/34/EU led to reallocation of the exceptional elements between operating income/expenditure and financial income/expenditure in the profit and loss account. These non-recurring elements relating to operating or financing activities nevertheless appear under a specific item so that it is still possible to separate them from the recurring elements, which are the only ones taken into consideration here.

(2) Annex 3 presents a sectoral breakdown of the results obtained for the return on equity ratio.

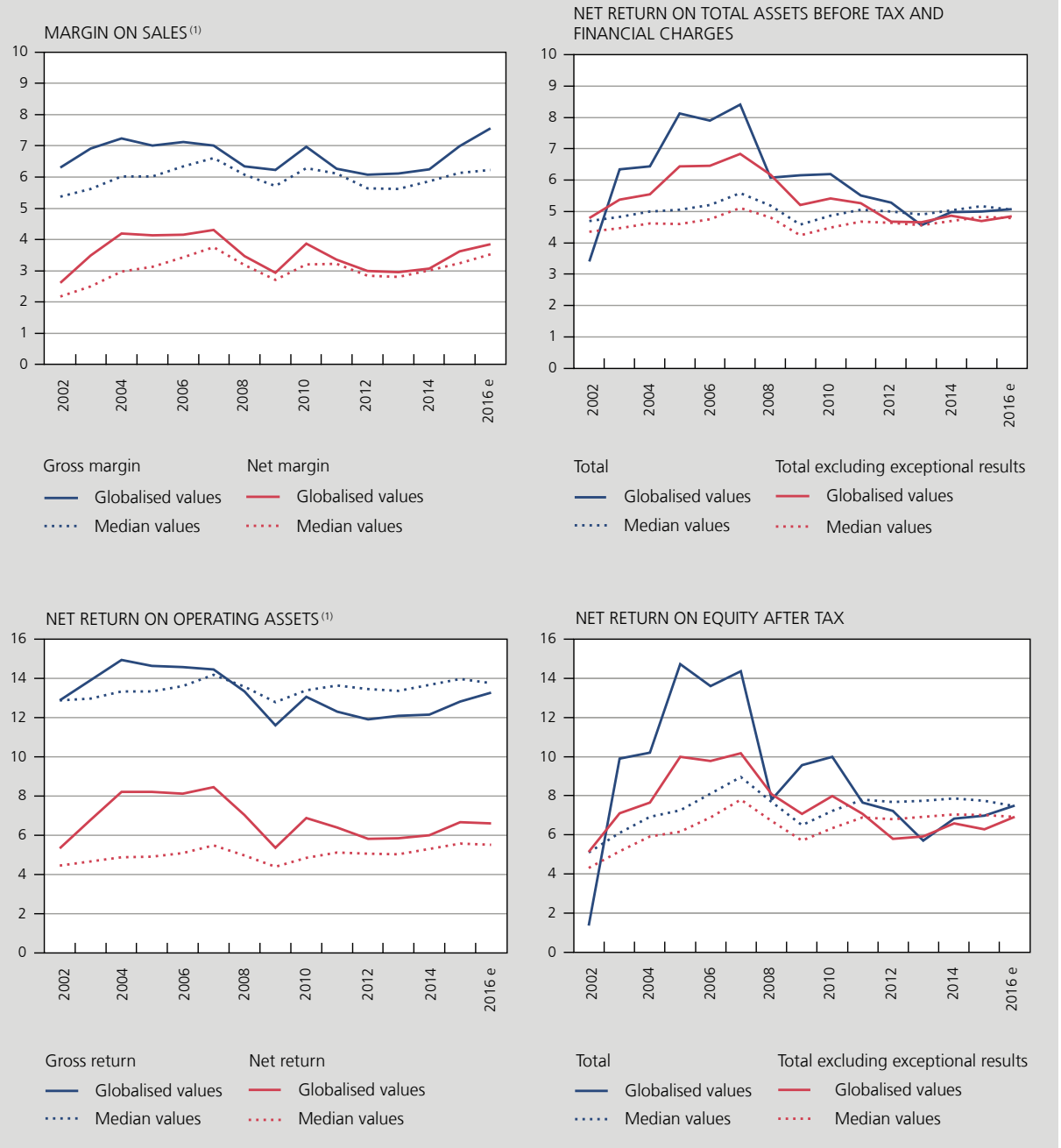
(3) Reminder : winsorisation at percentiles 5 and 95 means that values below percentile 5 are set at percentile 5, while values above percentile 95 are set at percentile 95.

certain specific features. For instance, in the vast majority of cases, the net margin on sales is, as one would expect, lower than the gross margin: however, a very few firms do record a higher net margin, due to withdrawals from provisions and/or write-downs. The impact of winsorisation is also evident, particularly for the return on equity which, after that process, shows a minimum of –66 % and a maximum of +88 %. This ratio is particularly prone to abnormal values, mainly on account of its denominator, which may be very slightly positive as a result of losses carried forward[1].

(1) The ratio is not calculated in the case of negative equity.

CHART 4 **PROFITABILITY**[1]

(in %: all firms, unless otherwise stated)

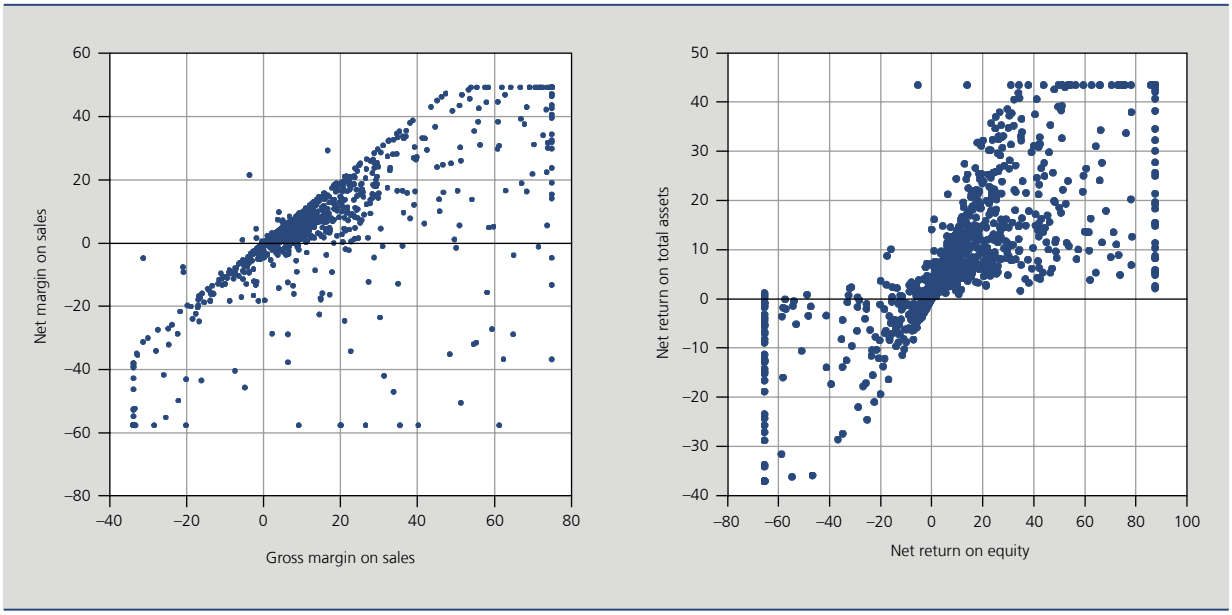


Source: NBB.

(1) The margin on sales ratios are calculated only for large firms. The gross concepts are calculated before deduction of depreciation, write-downs and contingency provisions in the numerator, while the net concepts are calculated after deduction of those expenses.

CHART 5 SCATTER PLOTS OF PROFITABILITY RATIOS

(2015)



Source: NBB.

3.2 Solvency

Solvency indicates the ability of firms to meet their short- and long-term liabilities. The main measurement of solvency is the degree of financial independence, i.e. the ratio between the equity and the total liabilities. An alternative way of measuring solvency is via the degree of self-financing: here, the numerator comprises only the reserves and results carried forward, while the denominator is unchanged. This ratio reflects the firm's past profitability, its policy on the allocation of the results and, indirectly, its age. By nature, the trend in the degree of self-financing mirrors that in the degree of financial independence because the reserves represent a substantial part of the equity.

As chart 6 shows, the degree of financial independence has clearly improved over the past 15 years, both for large firms – whose ratios are normally higher – and for SMEs[1]. During the second half of the 2000s, the long-term tendency was reinforced by the introduction of the tax allowance for risk capital ("notional interest"). That allowance attracted a massive inflow of foreign capital into Belgium, which primarily benefited very large companies, especially in the "head office activities" branch, which is excluded from this analysis because the social object of these undertakings is primarily financial. However, the phasing-in of restrictions on the allowance combined with the fall in interest rates significantly reduced the scheme's attraction in recent years. That is reflected in particular in the globalised ratio for large firms, in decline since 2013, notably as a result of a number of large-scale reductions in capital. In contrast, in the SMEs, the globalised ratio has stabilised at a high level in recent years, while the median ratio has displayed a marked increase, indicating a fundamental trend affecting most of these firms.

The picture concerning median values in SMEs was greatly influenced by the changes made in recent years in the tax treatment of liquidation surpluses. It should be remembered that the liquidation surplus broadly corresponds to the retained earnings that a company accumulates and which are allocated to the owners in the event of liquidation. Those surpluses are regarded as dividends and are therefore subject to withholding tax. The tax rate applicable here used to be 10 %, but was increased to 25 % in October 2014, then 27 % in January 2016 and 30 % in January 2017.

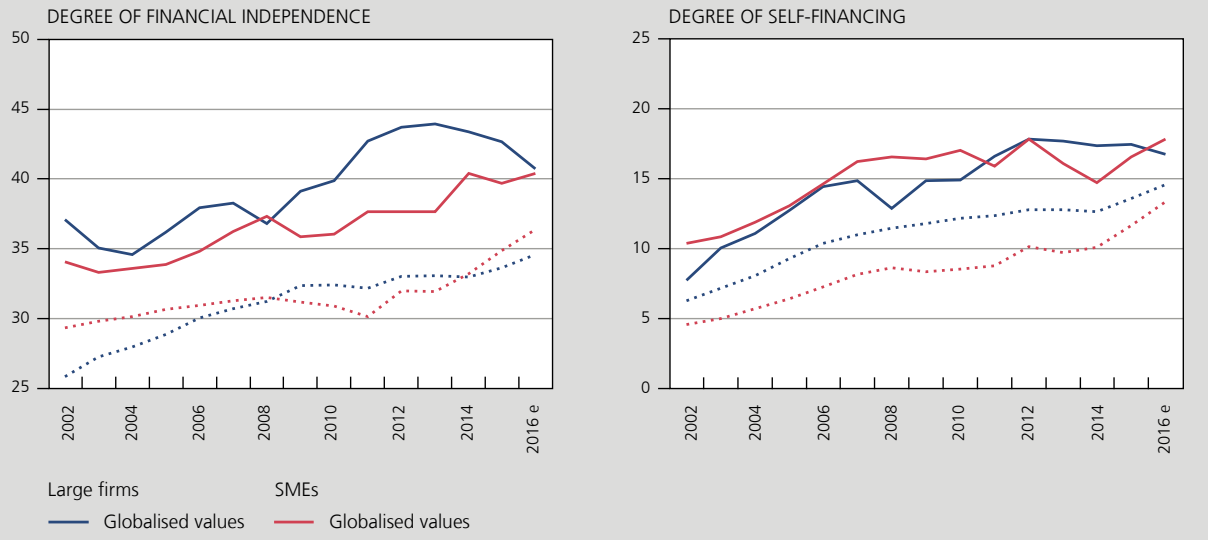
In order to give companies time to adjust, the government introduced a transitional measure at the time of the 2014 increase, allowing companies – regardless of size – to remain eligible for the 10 % rate if they incorporated in their capital[2] the taxed reserves formed by no later than

(1) Annex 4 presents a sectoral breakdown of the results obtained for the degree of financial independence.

(2) Under the transitional arrangement in Article 537 of the Income Tax Code, dividends corresponding to the reduction in the taxed reserves, of which the amount received was immediately added to the company capital and retained for a specified period (four years in the case of small firms, eight for large firms) still qualified for the reduced rate of 10 %.

CHART 6 SOLVENCY

(in %)



Source : NBB.

31 March 2013, provided that this contribution is maintained for a minimum period. In many firms, this measure led to amounts placed in reserve being transferred to the company capital, influencing their degree of self-financing in 2013 and 2014.

The Programme Law of 19 December 2014 then perpetuated the temporary measure, but only for small firms and in a slightly different form [1]. Since the 2014 financial year, those firms have been allowed to allocate all or part of their profit after tax to a special reserve, called the "liquidation reserve", on which there is an immediate levy of 10 % [2]. That reserve can be paid out with no additional levy in the event of liquidation : if it is paid out in the form of dividends before liquidation, a reduced rate of withholding tax applies to those dividends. The reduction is particularly large if the liquidation reserve is retained in the business for five years, since the withholding tax rate is then 5 % instead of 17 % otherwise [3]. A large number of SMEs evidently opted for the liquidation reserve scheme in 2015 and 2016, causing a sharp rise in the reserves – to the detriment of the payment of dividends – and hence an increase in the self-financing and financial independence ratios. It is possible that new structural changes may be seen in the coming years, if firms opt for early distribution of these liquidation reserves in the form of dividends. The forthcoming reform of corporation tax will doubtless also influence firms' behaviour [4].

Finally, it must be said that while the medians and globalised data indicate that solvency is tending to improve, examination of the whole distribution tempers that finding. Chart 7, which shows the whole distribution of financial independence in the form of box plots, reveals particularly wide variations in the solvency position of firms : by way of indication, in 2016, the 9th decile of financial independence stood at 88 % while the figure for the 1st decile was –29 %. The chart also shows that the solvency gains applied mainly to the most solvent population strata : while the 3rd quartile gained 9 points between 2002 and 2016, the 1st quartile only saw a 2 point increase. The 1st decile lost 13 points over the same period, indicating that a significant section of the population lost ground, in contrast to the majority upward trend. Note that 17 % of firms have negative equity, which is a significant financial warning light. However, some of the

(1) According to the Law's explanatory memorandum, it was decided to keep this alternative arrangement "in response to complaints from many self-employed persons pursuing their activities in the form of a company who expected to be able to pay out their reserves on liquidation at a rate of 10 % in the future". See the draft Programme Law of 28 November 2014 (parliamentary paper DOC 54 0672/001, Belgian Chamber of Representatives).

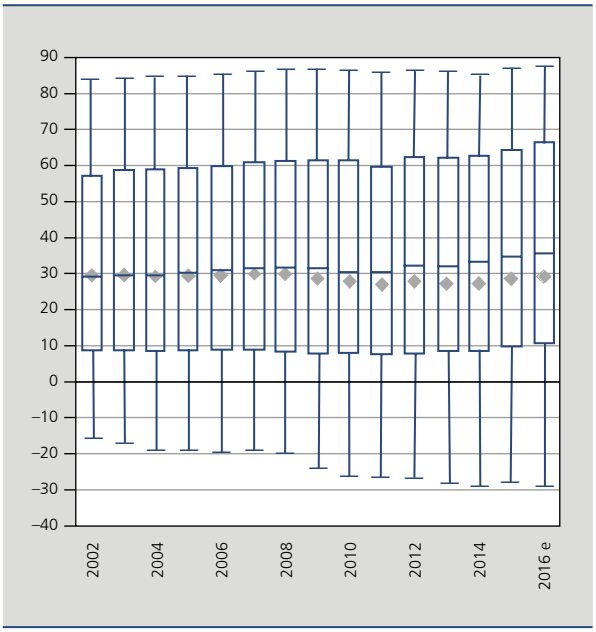
(2) This scheme came into force from the 2014 financial year. A catch-up measure was also introduced for earnings retained in the business and relating to the 2012 and 2013 financial years ; allowing firms to add those earnings to the liquidation reserve too.

(3) Originally, this tax rate stood at 15 %. It was increased to 17 % for reserves formed during a taxable period concerning the 2017 tax year or an earlier year, and to 20 % for reserves relating to the 2018 tax year at the earliest.

(4) According to government statements, the corporate tax reform, among other measures, will lower the rate of tax on companies, cutting the nominal rate from 33 % to 29 % from January 2018, then to 25 % from the following year. The rate applicable to SMEs will actually be 20 % for the first € 100 000.

CHART 7 DISTRIBUTION OF THE DEGREE OF FINANCIAL INDEPENDENCE

(in %, all firms)



Source: NBB.

The box plots should be read as follows. The lower and upper edges of the box correspond respectively to the 1st and 3rd quartiles. The line inside the box represents the median. The ends of the lower and upper whiskers correspond respectively to the 1st and 9th deciles. The grey dot indicates the winsorised average (in the 5th and 95th percentiles).

companies concerned receive funding in the form of loans from their owners or directors, which puts the situation in a somewhat different light.

3.3 Financing costs

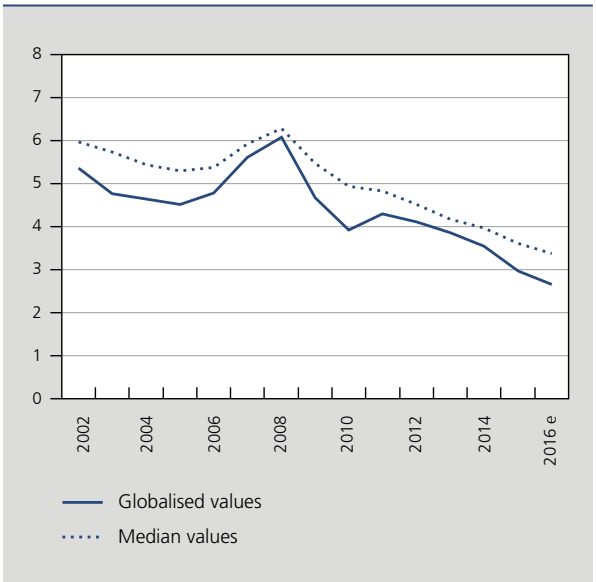
The average interest charges on the financial debts can be used to assess the cost of recourse to borrowing (1). The ratio divides the borrowing costs by the outstanding total of the short- and long-term financial debts. It is only calculated for large firms because borrowing costs cannot be distinguished from other financial charges in the abbreviated and micro formats.

Since the eruption of the financial crisis, and the accompanying fall in interest rates, the average cost of debt has maintained a steep downward trend. That trend persisted in 2016, and a new low point was reached, namely 2.6 % in globalised terms and 3.4 % in median terms (see chart 8). This new decline is attributable to the still highly accommodative monetary policy conducted by the Eurosystem, enabling the banks to raise finance at very low cost: the fall in the ratio is also due to increased competition between banking institutions, which is reflected in further narrowing of the commercial margins on loans.

The level of interest charges that firms pay depends on many factors, including in particular the type of financial debts. Here it should be remembered that a substantial proportion of financial debts are contracted in relation to affiliated companies. In 2016, the breakdown of the financial debts of the population studied was as follows: 38.1 % owed to credit institutions, 2.5 % in subordinated loans, 3.6 % in bond issues, 2.0 % in financial leasing debts, and 53.9 % in the form of "other loans". The analysis shows that these "other loans" very largely concern debts to undertakings in the same group, which may be interpreted as an alternative to capital contributions as a source of finance. These intra-group debts also enjoy much greater flexibility than normal third-party borrowings in regard to repayment ability, and are probably granted on more favourable terms. Although the available data cannot entirely prove that assumption, we find that the average interest charges tend to decline the greater the proportion of intra-group borrowings in the financial debts (see table 3).

CHART 8 AVERAGE INTEREST CHARGES ON FINANCIAL DEBTS

(in %, large firms)



Source: NBB.

(1) Annex 5 presents a sectoral breakdown of the results for this ratio.

TABLE 3 AVERAGE INTEREST CHARGES ON FINANCIAL DEBTS ACCORDING TO THE SHARE OF INTRA-GROUP FINANCING

(2016, in %, large firms)

Share of intra-group loans in the financial debts	Average interest charges
No intra-group loans	3.82
Less than 20 %	3.54
Between 20 and 40 %	3.51
Between 40 and 60 %	3.66
Between 60 and 80 %	2.93
Over 80 %	2.94

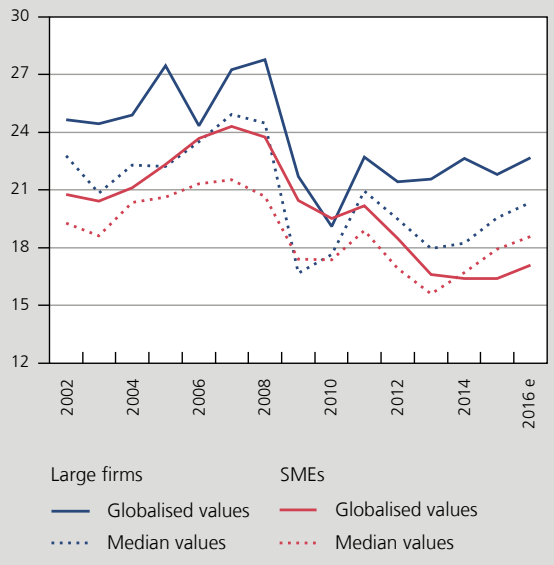
Source: NBB.

3.4 Investment effort

Combined with the high level of capacity utilisation and the substantial cash reserves, the persistently low interest rates may encourage the investment efforts of firms. In the annual accounts, that investment effort can be judged by the tangible fixed asset renewal rate, which relates acquisitions during the financial year to the book value of the stock at the end of the previous year.

CHART 9 TANGIBLE FIXED ASSET RENEWAL RATE

(in %)



Source: NBB.

A – very marked and continuous – rise in the median value of that indicator points to a revival in the investment efforts of most firms (see chart 9)[1]. Since 2013, the median investment rate has thus risen by 2.4 percentage points in large firms and 3 points in SMEs. The trend in the median values is at odds with the picture presented by the globalised data over the recent period. In large firms, the investment rate has in fact remained fairly stable overall since the beginning of the decade, at levels well below those prevailing before the crisis. In the SMEs, the globalised indicator stagnated at a historically low level between 2013 and 2015. The 2016 revival appears to mark a break in the trend compared to previous years.

4. Participating interests

4.1 Introduction

The financial links between companies belonging to the same group have increased considerably over the past 20 years. That is evident from many aspects of the annual accounts filed at the Central Balance Sheet Office. By way of indication, the share of financial fixed assets in the aggregate assets of companies gradually increased from 23 % in 1996 to 37 % in 2015. Apart from participating interests, the financial connections between companies may take the form of claims, debts, cash investments or guarantees. Group links have a significant impact on the financial assessment that can be made of companies. For example, debts to affiliated companies are not interpreted in the same way as debts to third companies because, as explained above, there are significant differences in regard to repayment ability. Also, some intra-group financial mechanisms may have a particular impact on certain items in the financial statements. That is true, for instance, in the case of cash pooling, as demonstrated in a previous issue of the Economic Review[2].

This section focuses on one of the many aspects of group relationships, namely the participating interests that firms report in the annex to their annual accounts. That annex contains a section on shareholdings and other rights in other (Belgian or foreign) companies. All firms have to declare information that includes the details of the companies in which they own rights, the percentage that they own in the capital of these companies, and the nature of the equity link (ordinary shares, non-voting shares, preferential shares, etc.). Only rights corresponding

(1) Annex 6 presents a sectoral breakdown of the results obtained for this ratio.

(2) See Vivet D. (2014), "Results and financial situation of firms in 2013", NBB, Economic Review, December, 77-102.

to at least 10 % of the company's subscribed capital are deemed to be declared.

To obtain an overall view of the data collected by the Central Balance Sheet Office, the results presented in this section cover all firms filing annual accounts, i.e. commercial companies filing accounts in standardised formats, but also banks, insurance companies, NPIs and foundations. This set is therefore larger than the population studied in the preceding sections of the article.

Unlike the other items in the financial statements, the data on shareholdings do not really lend themselves to quality checks by the Central Balance Sheet Office. Before the actual analysis, a lengthy exploratory exercise was therefore conducted on the gross data. Overall, while some imperfections were found, they were confined to a small number of cases so that the results can be considered generally reliable.

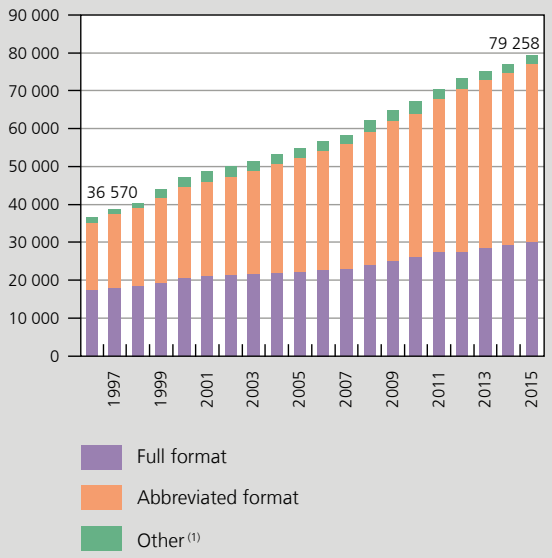
One of the checks conducted during the exploratory phase concerned consistency between the annex on shareholdings and the corresponding asset items, i.e. the financial fixed assets but also occasionally cash investments. It was found that 97 % of companies declaring shareholdings in the annex also reported corresponding assets on the balance sheet. Moreover, there was generally an explanation for the occasional divergence. For instance, total write-downs may be recorded on financial fixed assets (e.g. if the company in which a stake is held has gone bankrupt or into liquidation), so that the net book value of the shares is zero. Moreover, in theory, the concept of a participating interest is based primarily on the power to exercise control over the undertaking. While that control is usually associated with a shareholding, it may also be exercised in other ways, e.g. if a company has the power to appoint the directors or to exercise decisive influence over the management of a third undertaking.

4.2 Long-term trends

During the 20 years under review[1], the number of participating interest links more than doubled, from 36 570 in 1996 to 79 258 in 2015 (see chart 10). For 2015, the breakdown of the links is as follows according to the type of annual accounts of the owner company: 30 202 links were declared in the full-format model, 46 876 in the abbreviated formats and 2 180 in other types of annual accounts (mainly filed by banks, insurers, NPIs and foundations).

(1) The period studied covers the financial years from 1996 to 2015, as 2016 was not complete when this article went to press.

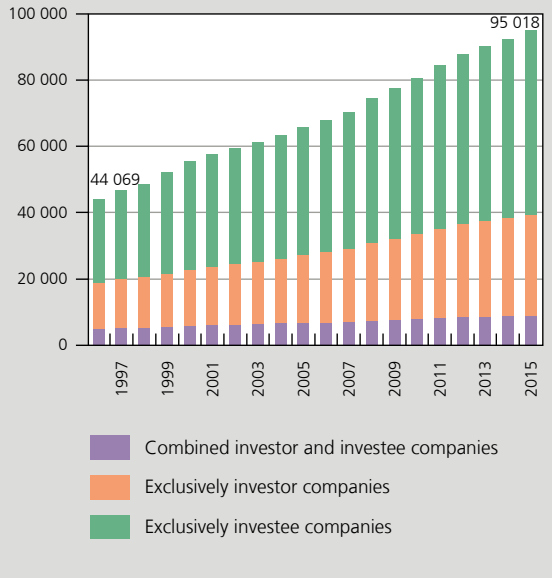
CHART 10 NUMBER OF SHAREHOLDING LINKS BY TYPE OF ACCOUNTS FORMAT FILED BY THE INVESTOR UNDERTAKING



Source: NBB.
(1) Mainly annual accounts filed by banks, insurers, NPIs and foundations.

The number of firms with at least one shareholding link also displayed an upward trend over the last 20 years as a whole, reaching 95 018 in 2015 (see chart 11).

CHART 11 NUMBER OF COMPANIES WITH AT LEAST ONE SHAREHOLDING LINK



Source: NBB.

That figure can be broken down into 30 391 firms that were purely investors, 55 653 that were purely investees, and 8 974 that were both investors and investees. It should be noted that while the number of investor companies is considered exhaustive – since we have information on all entities operating in Belgium – that is not the case for investee companies, as the database cannot identify the Belgian companies in which foreign counterparties own a stake.

While group relationships have developed consistently in absolute terms, we must point out that over the same period many firms were set up and, taking all formats together, the number of annual accounts filed by companies at the Central Balance Sheet Office increased considerably, from 215 065 in 1996 to 405 633 in 2015. The question was therefore whether, in proportionate terms, there are more group links nowadays than in the past. As is evident from table 4, the proportion of companies with at least one shareholding link has indeed increased over time, but to a relatively lesser degree: it edged upwards from 12.1 % in 1996 to 15.2 % in 2015 in the case of abbreviated formats, and from 64.1 to 71.2 % for full formats. Those proportions are likely to change in the future, following implementation of the EU Directive (see above). Another point is that, in the case of the abbreviated formats, the analysis is distorted by the fact that the Central Balance Sheet Office collects annual accounts from all Belgian firms operating in the form of a company: in practice, that includes a very large number of small companies which are unlikely to have participating interests, such as companies set up by self-employed workers.

Overall, this growth of connections between firms reflects the general trend towards an increase in the number of legal structures, as firms have become more inclined to create separate companies for each function or activity. While that trend has concerned all branches of activity, it has been driven in particular by numerous companies set up in spheres which are, by nature, conducive to participating interests. This primarily concerns "business and other management consultancy activities" (NACE-BEL 70 220), a branch which includes companies whose object is to take part in the management of other businesses[1]. It also concerns "head office activities" (NACE-BEL 70 100), comprising mainly holding companies or those performing financial functions inside groups of companies (in-house banks, cash-pooling companies, etc.). In addition, the real estate sector has likewise influenced the trend via the development of companies intended to operate and rent out properties: these real estate companies are generally firms in which other companies have a participating interest, whereas most companies in the other two branches hold participating interests themselves.

TABLE 4 PERCENTAGE OF COMPANIES WITH AT LEAST ONE SHAREHOLDING LINK, BY TYPE OF FORMAT FILED

(in %)

Financial year	Abbreviated formats	Full formats
1996	12.1	64.1
2015	15.2	71.2
Change (in percentage points)	**+3.1**	**+7.0**

Source: NBB.

4.3 Characteristics of shareholding links in 2015

Of the approximately 80 000 links identified in 2015, 66 % concerned companies based in Flanders, 18 % related to firms with their head office in Wallonia, and 17 % concerned firms based in Brussels. The Brussels companies have a participating interest profile which is clearly different from that of firms based in Flanders or Wallonia: the latter tend to have intra-regional links – in Flanders, both partners are based in the Flemish Region in 76 % of cases, while the figure for Wallonia is 70 % – whereas Brussels-based firms invest more outside their Region, and in particular abroad (see table 5). Thus, more than a third of the stakes owned by Brussels firms concern rights acquired in foreign undertakings, while that proportion is around 20 % if the owner company is Flemish or from Wallonia. This peculiarity is partly due to the Brussels economic fabric, comprising numerous head offices of international undertakings.

The foreign investee companies can also be broken down by country[2]. As table 6 shows, these foreign companies originate primarily from the countries bordering on Belgium, i.e. France (6 %), the Netherlands (4 %), Luxembourg (2 %) and Germany (1 %). Then comes a wide variety of countries: altogether, Belgian companies owned participating interests in more than 177 countries in 2015, representing the great majority of countries in the world (the UN recognises just under 200 countries).

(1) On the subject of management companies, see for example Herve L. (2012), *Les sociétés de management en 2012*, Pacioli n° 345, IPCF-BIBF, and Mormont H. (1999), *La société de management et la jurisprudence des juridictions sociales*, Pacioli n° 52, IPCF-BIBF.

(2) Reminder: apart from a few exceptions, the investor companies are all incorporated under Belgian law.

TABLE 5 BREAKDOWN OF PARTICIPATING INTERESTS ACCORDING TO INVESTOR AND INVESTEE COMPANIES' LOCATION
(in %)

Location of the investor company	Location of the investee company					
	Belgium				Abroad	Total
		of which:				
		Flanders	Wallonia	Brussels		
Flanders	80.6	75.6	2.5	2.5	19.4	100
Wallonia	79.3	3.8	70.3	5.2	20.7	100
Brussels	64.7	9.9	7.1	47.6	35.3	100
Belgium	**79.0**	**10.6**	**52.7**	**15.7**	**21.0**	**100**

Source: NBB.

Another aspect of the shareholding links concerns their intensity. That can be measured, for instance, by the direct participation rate declared by the investor firms. To avoid double counting, we disregarded any declared indirect links (which reflect the additional control that a firm may exercise over a third company via its subsidiaries). It must be stressed that the direct participation rate does not give a perfect picture of the intensity of the links between firms. It can in fact be zero (as in the case of 2 % of links) if the firm does not own any shares in the third company but exercises indirect control via its subsidiaries[1]. Also, if the investor firm holds corporate rights of varying types (a situation that only concerns a small number of participating interests), it states various percentages for the same stake, making interpretation difficult.

A stake of at least 10 % in the investee equity implies a presumption of a participating interest, which is why – unless there is evidence to the contrary – once that threshold

(1) In many cases where the direct rate is missing, the reporting companies mention an indirect equity link, which exceeds 50 % in more than a third of cases.

TABLE 6 GEOGRAPHICAL BREAKDOWN OF INVESTEE COMPANIES

Country	Number of companies	Country	Number of companies	Country	Number of companies
Belgium	49 031	Czech Republic	201	Ireland	94
France	3 687	Brazil	166	Bulgaria	84
Netherlands	2 342	India	163	South Africa	84
Luxembourg	1 182	Portugal	154	Denmark	80
Germany	761	Turkey	154	Austria	74
United States	641	Slovakia	144	Greece	67
United Kingdom	583	Russia	140	Japan	65
Spain	510	Hungary	133	Cyprus	63
Poland	431	Sweden	130	United Arab Emirates	58
Italy	389	Canada	118	Argentina	57
Hong Kong	323	Singapore	107	Chile	57
Romania	248	Morocco	106	D.R. of Congo	53
Switzerland	244	Australia	99	Ukraine	52
China	233	Mexico	98	Rest of the world	1 156

Source: NBB.

is passed, a participating interest is mentioned in the *ad-hoc* annex.

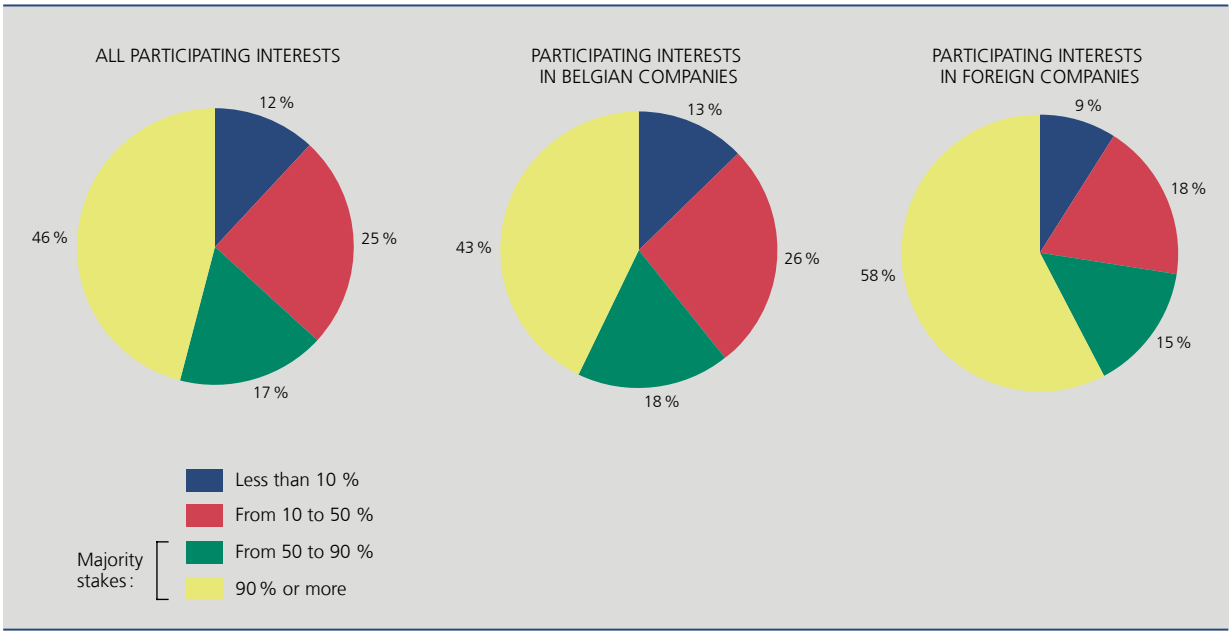
If the investor company holds more than 50 % of the capital in another company, the latter is regarded *de facto* as a subsidiary. The Royal Decree of 12 September 1983 describes a subsidiary as "any other undertaking if the first undertaking is able, in fact or in law, to exercise decisive influence over the appointment of at least half of the directors of the second undertaking or over its management policy, either by virtue of agreements or as a result of participating interests held in the second undertaking by the first, or indirectly via its direct or indirect subsidiaries". This means that, in practice, a firm may be classed as a subsidiary below the 50 % threshold if power of control is demonstrated. From the industrial point of view, it may make sense to acquire a majority stake in order to squeeze out a competitor, to ensure a supplier's loyalty, to extend the customer base via a local player or to acquire technology needed to develop the business. From the financial point of view, a majority stake means control over the distribution of the profits made.

The Company Code describes an affiliated company as "any company other than a subsidiary in which another company holds a participating interest and can exert significant influence over its policy". That "significant" influence is presumed where the voting rights attached to that participating interest represent 20 % or more of the capital of the investee company.

Chart 12 shows that most of the participating interests mentioned by firms in their annual accounts concern the parent-subsidiary relationships: 63 % of the links in fact relate to a stake of more than 50 % in the corporate rights. It should be noted that in almost half of cases, the participation rate is actually between 90 and 100 %. More generally, around 80 % of the links recorded exceed the 20 % threshold beyond which a "significant" influence is presumed to be exercised by the investor company. Furthermore, it is evident that the shareholding links are closer if the investee company is foreign, since 73 % of the participating interests in companies based outside Belgian territory refer to subsidiaries in the legal sense, whereas the figure is 61 % for holdings in Belgian firms. We can conclude that companies which invest abroad are keener to exert a decisive influence over the investee company.

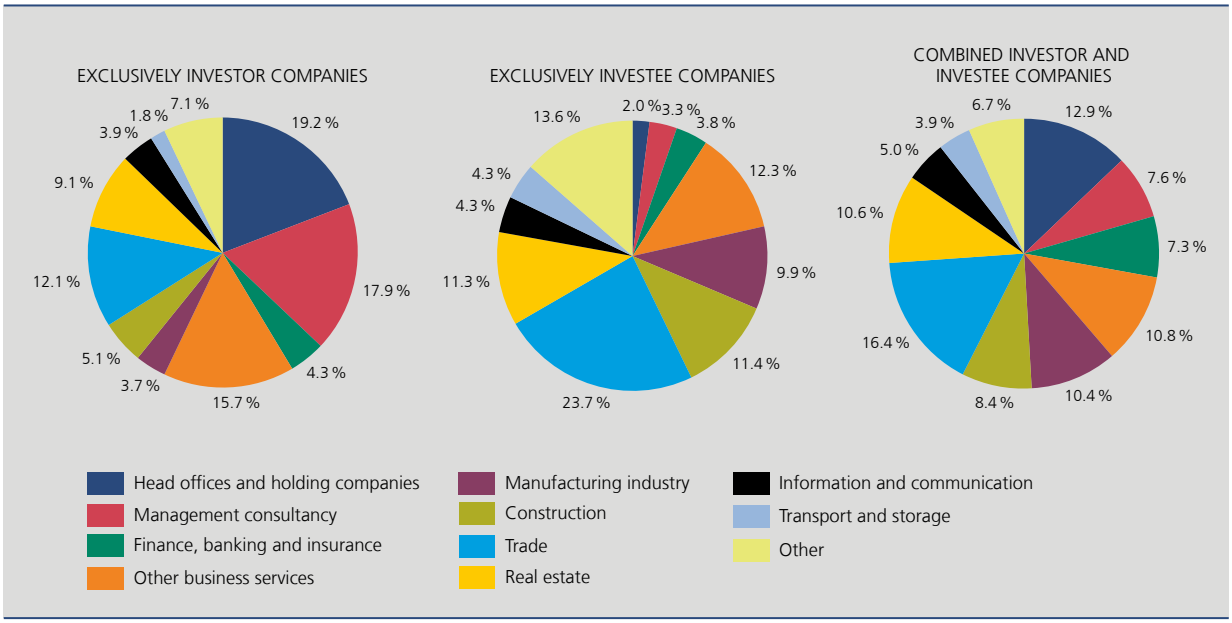
Finally, the sectoral breakdown of investor companies shows that a large proportion of them come under head offices, management companies and financial activities (see chart 13). That is logical, since those branches of activity primarily imply stakes in other companies. It should be pointed out that companies in these branches generally employ few workers and create relatively

CHART 12 INTENSITY OF THE DIRECT SHAREHOLDING LINK
(in %)



Source: NBB.

CHART 13 SECTORAL BREAKDOWN OF FIRMS WITH AT LEAST ONE SHAREHOLDING LINK



Source: NBB.

little value added since they are usually set up for legal, financial or tax reasons.

Conversely, the investee companies are much more often found in the traditional branches of the Belgian economy (such as industry, trade, construction, etc.) and they also employ far more staff, on average. It should be noted that the annual accounts of many large commercial or industrial firms nowadays exhibit a hybrid character, with assets consisting mainly of financial fixed assets, on the one hand, and a profit and loss account which is still largely determined by the operating result (and hence by production activities).

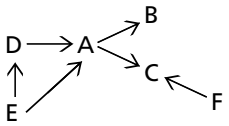
4.4 Groups of firms

As stated above, the basic data come from the annual accounts of the investor companies, which declare the companies in which they hold participating interests, i.e. the investee companies. It should be remembered that the annual accounts do not contain any usable data on the shareholders of the company filing the accounts. One of the aims of this study was therefore to cross-check the initial data in order to identify any investor company shareholders in the other annual accounts so as ultimately to reconstruct groups of firms.

For example, if we have the annual accounts of companies A, D, E and F for which the data on participating interests are as follows:

- Annual accounts of company A: A → B ("A declares a stake in B")
  A → C
- Annual accounts of company D: D → A
- Annual accounts of company E: E → D
  E → A
- Annual accounts of company F: F → C

By combining the data from these four sets of annual accounts we can deduce the diagram shown below, indicating the links. Among other things, this tells us about any firms owning the original investor companies (i.e. A, D, E and F) and the indirect links (e.g. the link between E and B which passes via A).



By extending this logic to all the annual accounts and levels of participating interest, it was possible, via a number of IT processes, to reconstruct groups of firms. For each firm, the group comprises all the companies in a chain of participating interests leading up or down to the firm, i.e. the companies with a direct or indirect ownership link with the firm, either upstream or downstream. If we look at the example of the above diagram, this means that group A comprises firms B, C, D and E. Conversely, firm F is not part of group A because it does not figure in a chain of links leading up or down

to A. By the same logic, group C does include F, just as it does A, D and E, whereas B is excluded.

One of the aspects investigated concerns the size of the groups thus formed. For a given firm, the group size was defined as the total number of firms upstream and/or downstream. The threshold defining whether or not participating interests are taken into consideration has a significant influence on group size: if we set the threshold at 0 %, i.e. if we take account of all the participating interests recorded, we obtain bigger groups than if we set the threshold at 50 %, for example. However, a 50 % threshold gives us more cohesive groups as the firms are connected by majority stakes from one end of chain of holdings to the other.

Table 7 presents the breakdown of the firms according to the size of their group, for four different thresholds: 0, 10, 20 and 50 %. For example, at the 20 % threshold, 53 752 firms are connected either upstream or downstream with one other firm by a direct link extending to 20 % or more. Conversely, 13 firms form part of a group of more than 200 firms. The main conclusion to be drawn from the table is that the vast majority of companies belong to small groups, while a minority form part of large groups. It should be noted that this conclusion concerns the data available from the Central Balance Sheet Office, which are by nature incomplete. For one thing, they do not contain any information on stakes held by foreign companies in Belgian companies. Also, while we know the stakes held by Belgian companies in foreign companies, the chain ends at that stage, whereas those foreign companies may in turn hold stakes in other companies. These two points explain why the large groups identified are mainly Belgian.

TABLE 7 BREAKDOWN OF FIRMS ACCORDING TO THE SIZE OF THEIR GROUP

(number of firms; firms with at least one shareholding link in 2015)

Total number of firms upstream and/or downstream	Threshold			
	0 %	10 %	20 %	50 %
0	0	5 218	9 235	23 679
1	54 384	54 172	53 752	49 523
2	16 467	16 257	15 770	12 397
3	7 789	6 944	6 362	4 252
4	4 341	3 856	3 444	1 909
5	2 586	2 160	1 831	982
From 6 to 10	5 429	4 100	3 107	1 495
From 11 to 20	2 631	1 592	1 028	537
From 21 to 50	1 091	555	407	211
From 51 to 100	183	118	56	27
From 101 to 200	75	28	13	3
Over 200	42	18	13	3
Total	**95 018**	**95 018**	**95 018**	**95 018**

Source: NBB.

4.5 Participating interests and risk of default

This section discusses some first findings on the link between group relationships and financial risk. The analysis is based on the identification of failing companies: a company is considered to be failing if it is subject to bankruptcy proceedings within three years after the closing date of its annual accounts[1]. The analysis concerned the annual accounts for the 2013 financial year, and hence failures occurring in 2014, 2015 and 2016. The default rates seen on that basis can be interpreted as an estimate of the risk of bankruptcy within three years.

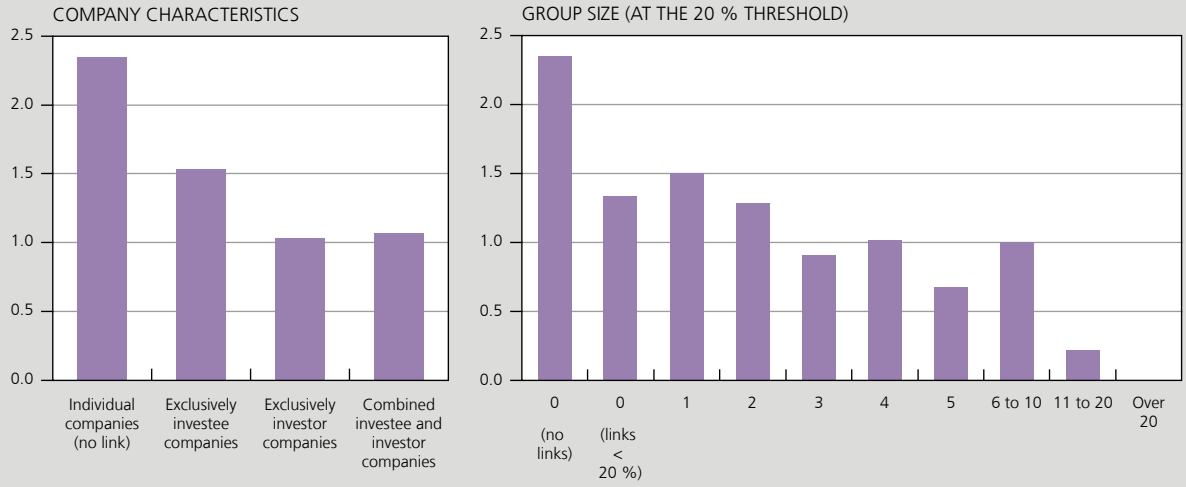
Chart 14 presents the observed default rates according to the characteristics of the groups of firms as defined above. The main conclusion is that, all other things being equal, (a) the default risk is considerably lower for companies forming part of a group, especially in the case of investor companies, and (b) the default risk declines as the group size increases. These conclusions are valid for the great majority of branches in the economy. Admittedly, the differences in the rates may seem minor at first sight, owing to the low percentage of bankruptcies recorded each year in Belgium[2]. Nonetheless, the rate drops by more than half between individual firms (2.35 %) and investor companies (1.03 %), for example. Similarly, the rate is close to zero for groups comprising more than ten companies.

The group variables were also tested in the multivariate environment of the financial health indicator used by the Central Balance Sheet Office in its company files. Those first tests showed that the addition of such variables to the existing model improves its predictive quality. More detailed studies are therefore needed on this subject.

(1) This is the definition used in developing the financial health indicator included in the Central Balance Sheet Office company files.
(2) It is a peculiarity of most risk analyses that they only predict uncommon events.

CHART 14 DEFAULT RISK ACCORDING TO PARTICIPATING INTERESTS

(default rate recorded at three years for companies filing annual accounts relating to the 2013 financial year)



Source: NBB.

Conclusion

The transposition into Belgian law of the EU Directive on financial statements had a significant impact on the statistical interpretation of the annual accounts. The new provisions lead among other things to a considerable reform of the concepts of large and small firms within the meaning of the Company Code: they also modify the content of the annual accounts and the accounting treatment of certain items, such as research costs and exceptional results. These new provisions applicable to financial years commencing after 31 December 2015 create an unprecedented break in the Central Balance Sheet Office data series.

Some general lessons can still be drawn from the annual accounts relating to 2016. If we neutralise the impact of the change in the method of amortising research costs and the influence of certain one-off operations by multinationals which have no effect on real economic activity, the growth of the aggregate operating result was very stable in 2016, in both gross and net terms. That stability reflects an economic environment which combines moderate activity growth with a favourable trend in the main costs that firms incur (notably wages and commodity purchases). Overall, profitability also remained fairly stable in 2016: while most of the profitability ratios were up slightly in globalised terms, there was hardly any improvement in the distribution measurements.

As regards solvency, a marked rise in the median ratios of SMEs has been the main feature in recent years. This fundamental trend was evidently due to the changes in the tax treatment of liquidation surpluses, encouraging small firms to retain their taxed profits in house, first in the form of company capital and then in the form of special "liquidation" reserves. While the main solvency figures reflect a steady improvement, it must be remembered that 17 % of the firms considered are in a negative equity situation, and that is an important financial warning light. The bankruptcy statistics also point to renewed vulnerability in recent months: after three years of decline, the number of bankruptcies began rising again from the third quarter of 2016.

In accordance with the trend evident since the eruption of the financial crisis, interest charges dropped further in 2016, in the context of a still highly accommodative monetary policy. Combined with the high level of capacity utilisation and the substantial cash reserves, the persistently low interest rates may encourage firms to invest. In that regard, it seems that the tangible fixed asset renewal rate of most firms, though still significantly below the levels prevailing before the 2008-2009 recession, has been tending to pick up for several years now.

The last part of the article sheds light on the equity relationships between firms as declared in the annex to their annual accounts. Among the main conclusions derived from that analysis, we find that shareholding links are generally close: in almost two-thirds of cases, majority stakes are held. We also find that group

relationships have intensified over the past 20 years, reflecting a general trend towards a multiplicity of legal structures, as firms have become more inclined to create separate companies for each function or activity. While that trend has concerned all branches of activity, it has been driven in particular by numerous companies set up in spheres which are, by nature, conducive to participating interests. This primarily concerns "management" companies, as well as head offices and holding companies. The companies in these branches generally employ few workers and create relatively little value added, because they are usually set up for legal, financial or tax reasons. Conversely, in the traditional branches of the Belgian economy (such as industry, trade, construction, etc.), investor companies employ far more staff, on average. It should be noted that the annual accounts of many large commercial or industrial firms nowadays exhibit a hybrid character, with assets consisting mainly of financial fixed assets but a profit and loss account which is still largely determined by the operating result (and hence by production activities).

By combining the original data declared by firms, the analysis also enables us to reconstruct groups of companies. In particular, this work shows that the great majority of companies with participating interests belong to very small groups, while a minority of firms are part of very large groups. Finally, some initial findings are discussed regarding the relationship between participating interests and financial risks. In this respect, we find that the risk of bankruptcy is significantly lower for companies forming part of a group, especially in the case of investor companies, and that this risk tends to decline as group size increases.

Annexes

ANNEX 1 DEFINITION OF THE FINANCIAL RATIOS

	Item numbers allocated	
	In the full format	In the abbreviated format[1]
1. Gross margin on sales		
Numerator[2] (N)	9901 + 630 + 631/4 + 635/7	9901 + 630 + 631/4 + 635/7
Numerator[3] (N)	9901 – 76A + 66A + 630 + 631/4 + 635/8	9901 – 76A + 66A + 630 + 631/4 + 635/8
Denominator (D)	70 + 74 – 740	70
Condition for calculation of the ratio:		
Simplified format: D > 0		
2. Net margin on sales		
Numerator[2] (N)	9901 + 9125	9901 + 9125
Numerator[3] (N)	9901 – 76A + 66A + 9125	9901 – 76A + 66A + 9125
Denominator (D)	70 + 74 – 740	70
Condition for calculation of the ratio:		
Simplified format: D > 0		
3. Gross return on operating assets		
Numerator[2] (N)	9901 + 630 + 631/4 + 635/7	9901 + 630 + 631/4 + 635/7
Numerator[3] (N)	9901 – 76A + 66A + 630 + 631/4 + 635/8	9901 – 76A + 66A + 630 + 631/4 + 635/8
Denominator (D)	20 + 21 + 22/27 + 3 + 40/41 + 490/1	20 + 21 + 22/27 + 3 + 40/41 + 490/1
Conditions for calculation of the ratio:		
12-month financial year		
D > 0[4]		
4. Net return on operating assets		
Numerator[2] (N)	9901	9901
Numerator[3] (N)	9901 – 76A + 66A	9901
Denominator (D)	20 + 21 + 22/27 + 3 + 40/41 + 490/1	20 + 21 + 22/27 + 3 + 40/41 + 490/1
Conditions for calculation of the ratio:		
12-month financial year		
D > 0[4]		
5. Net return on total assets before tax and financial charges		
Numerator[2] (N)	9904 + 650 + 653 – 9126 + 9134	9904 + 65 – 9126 + 67/77
Numerator[3] (N)	9904 + 650 + 653 – 9126 + 9134	9904 + 65 – 67/77
Denominator (D)	20/58	20/58
Condition for calculation of the ratio:		
12-month financial year		

(1) The formulas indicated for financial years commencing after 31 December 2015 are also valid for the micro format.
(2) Financial years commencing before 1 January 2016.
(3) Financial years commencing after 31 December 2015.
(4) Condition valid for calculating the median but not the globalised figure.

ANNEX 1 DEFINITION OF THE FINANCIAL RATIOS (continued 1)

	Item numbers allocated	
	In the full format	In the abbreviated format[1]
6. Net return on total assets before tax and financial charges, excluding exceptional results		
Numerator[2] (N)	9904 + 650 + 653 – 9126 + 9134 – 76 + 66	9904 + 65 – 9126 + 67/77 – 76 + 66
Numerator[3] (N)	9904 + 650 + 653 – 9126 + 9134 – 76A – 76B + 66A + 66B	9904 + 65 + 67/77 – 76A – 76B + 66A + 66B
Denominator (D)	20/58	20/58
Conditions for calculation of the ratio:		
12-month financial year		
7. Net return on equity		
Numerator (N)	9904	9904
Denominator (D)	10/15	10/15
Conditions for calculation of the ratio:		
12-month financial year		
D > 0[4]		
8. Net return on equity, excluding exceptional results		
Numerator[2] (N)	9904 – 76 + 66	9904 – 76 + 66
Numerator[3] (N)	9904 – 76A – 76B + 66A + 66B	9904 – 76A – 76B + 66A + 66B
Denominator (D)	10/15	10/15
Conditions for calculation of the ratio:		
12-month financial year		
D > 0[4]		
9. Degree of financial independence		
Numerator (N)	10/15	10/15
Denominator (D)	10/49	10/49
10. Degree of self-financing		
Numerator (N)	13 + 14	13 + 14
Denominator (D)	10/49	10/49
11. Average interest charges on financial debts		
Numerator[2] (N)	650	65 – 9125 – 9126
Numerator[3] (N)	650	65
Denominator (D)	170/4 + 8801 + 43	170/4 + 42 + 43
Condition for calculation of the ratio:		
12-month financial year		

(1) The formulas indicated for financial years commencing after 31 December 2015 are also valid for the micro format.
(2) Financial years commencing before 1 January 2016.
(3) Financial years commencing after 31 December 2015.
(4) Condition valid for calculating the median but not the globalised figure.

ANNEX 1 DEFINITION OF THE FINANCIAL RATIOS (continued 2)

	Item numbers allocated	
	In the full format	In the abbreviated format[1]
12. Tangible fixed asset renewal rate		
Numerator (N)	8169 + 8229 – 8299	8169 + 8229 – 8299
Denominator (D)	8199P + 8259P – 8329P	8199P + 8259P – 8329P
Conditions for calculation of the ratio:		
12-month financial year		
N > 0 [4]		

(1) The formulas indicated for financial years commencing after 31 December 2015 are also valid for the micro format.
(2) Financial years commencing before 1 January 2016.
(3) Financial years commencing after 31 December 2015.
(4) Condition valid for calculating the median but not the globalised figure.

ANNEX 2 SECTORAL GROUPINGS

	NACE-BEL 2008 divisions
Manufacturing industry	10-33
Construction	41-43
Energy, water supply and waste	35-39
Wholesale trade[1]	46
Retail trade[1]	47
Transportation and storage	49-53
Accommodation and food service activities	55-56
Information and communication	58-63
Real estate activities	68
Business services[2]	69-82

(1) Excluding trade in motor vehicles.
(2) Excluding head office activities (NACE-BEL 70 100).

ANNEX 3 RETURN ON EQUITY BY BRANCH OF ACTIVITY

(in %, globalised data)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 e
Total	**1.3**	**9.9**	**10.2**	**14.7**	**13.6**	**14.4**	**7.8**	**9.5**	**10.0**	**7.6**	**7.2**	**5.7**	**6.8**	**7.0**	**7.5**
of which:															
Manufacturing industry	4.2	7.8	10.9	19.8	14.8	16.5	9.7	13.3	13.3	8.7	10.7	4.9	7.0	9.7	9.3
Construction	4.6	7.7	9.7	11.3	15.1	15.2	10.2	9.7	9.5	10.5	8.5	7.8	7.7	9.6	7.3
Energy, water supply and waste	19.6	22.1	13.3	15.7	17.1	11.8	4.7	10.0	6.0	5.4	1.2	–1.6	3.8	–1.2	–1.4
Wholesale trade[1]	4.0	9.2	13.4	13.6	14.9	13.0	6.8	9.5	7.7	6.5	6.5	5.5	8.9	5.6	6.0
Retail trade[1]	4.1	6.4	11.6	9.2	7.6	14.0	8.8	15.5	9.7	10.2	8.8	9.7	4.3	9.8	11.9
Transportation and storage	–0.6	4.5	16.6	20.9	11.5	14.5	18.0	2.3	10.1	–2.4	6.3	5.9	6.9	10.3	7.7
Accommodation and food service activities	–2.9	–1.7	–9.5	–0.7	11.5	6.5	0.9	–1.7	3.6	3.5	–1.0	1.9	4.3	2.1	7.0
Information and communication	–44.0	21.0	9.9	13.2	15.6	14.2	3.5	10.4	18.3	14.4	15.1	11.9	14.0	14.0	7.5
Real estate activities	1.9	2.7	4.7	5.5	8.1	9.1	5.0	4.1	6.5	4.4	4.5	5.7	4.6	5.0	5.9
Business services[2]	4.8	6.8	8.4	12.3	13.6	18.6	6.8	9.2	9.4	9.5	6.7	8.4	8.3	7.1	9.7

Source: NBB.

(1) Excluding trade in motor vehicles.

(2) Excluding head office activities (NACE-BEL 70 100).

ANNEX 4 DEGREE OF FINANCIAL INDEPENDENCE, BY BRANCH OF ACTIVITY

(in %, globalised data)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 e
Total	**36.4**	**34.6**	**34.3**	**35.7**	**37.2**	**37.8**	**36.9**	**38.4**	**39.1**	**41.6**	**42.4**	**42.5**	**42.7**	**42.0**	**40.6**
of which:															
Manufacturing industry	34.5	34.3	32.2	34.0	37.2	37.6	36.4	39.7	39.0	41.0	42.9	42.7	42.5	38.8	37.3
Construction	29.2	31.0	32.9	32.8	33.5	33.0	34.5	32.4	32.4	31.5	34.4	35.5	35.5	35.4	36.7
Energy, water supply and waste	43.2	34.3	33.4	32.6	34.8	26.2	28.7	28.8	32.3	47.7	44.7	44.5	47.4	49.8	44.1
Wholesale trade[1]	27.0	28.3	30.1	30.6	34.0	35.2	36.8	38.7	44.3	45.0	42.5	42.9	42.3	44.1	44.3
Retail trade[1]	34.9	31.4	37.9	37.8	36.8	35.3	34.2	36.1	34.8	35.3	36.5	36.7	36.9	35.9	36.2
Transportation and storage	24.0	25.8	24.3	34.1	34.2	34.9	35.7	35.9	35.3	34.2	35.8	35.4	32.5	33.6	34.4
Accommodation and food service activities	22.3	24.8	27.9	26.1	32.7	28.8	39.4	34.7	33.9	33.9	33.7	35.0	38.2	39.6	41.7
Information and communication	44.6	45.4	43.8	44.4	33.2	33.2	31.7	26.8	29.3	29.0	29.2	28.4	29.1	29.3	32.8
Real estate activities	36.4	34.2	32.6	31.8	34.4	40.7	36.9	35.3	37.7	39.2	40.8	41.1	40.5	41.2	41.2
Business services[2]	45.0	34.7	36.3	38.1	38.3	42.8	37.0	46.7	43.3	46.0	47.6	47.3	47.9	48.3	44.7

Source: NBB.

(1) Excluding trade in motor vehicles.

(2) Excluding head office activities (NACE-BEL 70 100).

ANNEX 5 AVERAGE INTEREST CHARGES ON FINANCIAL DEBTS, BY BRANCH OF ACTIVITY

(in %, medians, large firms)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 e
Total	**6.0**	**5.7**	**5.4**	**5.3**	**5.4**	**5.9**	**6.3**	**5.5**	**4.9**	**4.8**	**4.5**	**4.2**	**4.0**	**3.6**	**3.4**
of which:															
Manufacturing industry	5.9	5.7	5.3	5.2	5.2	5.8	6.2	5.4	4.8	4.6	4.4	4.1	3.9	3.3	3.1
Construction	6.0	5.6	5.3	5.2	5.2	6.1	6.3	5.5	4.9	4.6	4.4	4.0	3.9	3.5	3.4
Energy, water supply and waste	5.7	5.3	4.5	4.7	4.7	5.1	5.7	4.5	4.1	4.6	4.6	4.5	4.5	4.4	4.0
Wholesale trade[1]	5.8	5.5	5.2	5.2	5.5	6.2	6.4	5.3	4.6	4.5	4.2	4.0	3.7	3.4	3.3
Retail trade[1]	6.7	6.5	5.9	5.9	5.8	6.2	6.3	6.0	5.4	5.3	4.9	4.7	4.5	3.9	3.8
Transportation and storage	6.1	5.9	5.6	5.4	5.2	5.5	5.9	5.6	5.2	5.0	4.6	4.1	3.9	3.5	3.1
Accommodation and food service activities	6.3	6.1	5.8	5.4	5.4	5.9	6.9	6.0	5.5	5.6	5.0	4.1	4.2	3.5	3.6
Information and communication	6.7	6.3	6.3	6.0	6.1	6.3	7.1	6.3	6.2	5.7	5.4	5.3	5.1	4.9	4.7
Real estate activities	5.4	4.8	5.0	4.9	5.1	5.3	5.7	5.1	4.9	4.8	4.5	3.9	3.8	3.6	3.5
Business services[2]	5.9	5.7	5.4	5.3	5.5	6.0	6.5	5.9	5.3	5.2	5.0	4.5	4.2	3.8	3.4

Source: NBB.

(1) Excluding trade in motor vehicles.

(2) Excluding head office activities (NACE-BEL 70 100).

ANNEX 6 TANGIBLE FIXED ASSET RENEWAL RATE BY BRANCH OF ACTIVITY

(in %, globalised data)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 e
Total	**23.2**	**22.8**	**23.3**	**25.3**	**24.1**	**26.0**	**26.1**	**21.2**	**19.3**	**21.6**	**20.2**	**19.4**	**19.8**	**19.4**	**20.2**
of which:															
Manufacturing industry	24.6	24.0	23.4	23.3	24.4	27.5	26.4	21.4	20.0	21.8	23.5	21.8	23.4	24.9	25.0
Construction	25.7	23.7	22.2	24.7	27.2	31.8	31.2	27.0	21.6	25.8	20.9	19.1	19.1	19.6	18.7
Energy, water supply and waste	11.2	10.4	15.7	16.3	11.4	13.1	17.9	25.7	18.3	15.9	15.0	16.2	10.7	11.4	16.7
Wholesale trade[1]	31.4	26.8	27.8	28.1	31.2	30.8	28.5	22.4	22.4	24.6	22.8	21.7	21.5	20.5	21.8
Retail trade[1]	28.0	24.6	25.2	25.7	25.9	26.4	25.6	22.7	22.4	31.8	22.5	20.4	21.2	21.5	22.0
Transportation and storage	26.4	22.7	26.9	49.9	23.4	26.9	26.3	20.5	19.1	17.2	14.6	16.3	22.2	18.8	19.9
Accommodation and food service activities	15.9	14.2	16.0	16.0	17.3	21.1	21.3	15.3	16.0	15.2	15.6	12.9	13.5	13.7	15.6
Information and communication	21.8	20.0	22.0	26.3	26.8	25.6	32.8	21.3	18.8	24.8	24.7	27.5	27.5	24.4	23.9
Real estate activities	10.5	12.8	12.3	12.3	12.5	12.9	15.5	11.9	10.9	11.7	11.7	11.3	12.5	10.9	11.5
Business services[2]	29.1	30.1	31.9	30.5	30.6	32.0	31.7	26.0	26.4	33.4	29.8	26.1	25.5	26.0	27.6

Source: NBB.

(1) Excluding trade in motor vehicles.

(2) Excluding head office activities (NACE-BEL 70 100).