German enterprises' profitability and financing in 2018

Given the less dynamic economic environment in 2018, the profitability of non-financial corporations remained markedly below the high level of 2017. However, sales continued to expand at an above average rate despite the weak export performance and the somewhat less dynamic private consumption in comparison to the previous year, likely due to price effects as well. In sectoral terms, growth in sales was driven primarily by commodity-intensive and domestically oriented sectors. In the more export-based sectors, the increase in sales was much smaller. On the cost side, enterprises were confronted with additional pension provisions, higher purchase prices for intermediate goods and raw materials, and robust wage growth. The overall result of this was a marked decline in German enterprises' average pre-tax return on sales.

The equity ratio of non-financial corporations, which had risen sharply since the end of the 1990s, has now settled at a high level. Given the German corporate sector's now low level of debt by international standards, this indicates growing saturation tendencies in enterprises' equity bases. Moreover, the increases in pension provisions, which have become necessary since the low interest rate environment set in, continue to narrow firms' scope for increasing their equity ratio. In the reporting year, the rise in post-employment benefit obligations was linked to the further reduction in the discount rate and a weaker performance of the assets held for settlement. More recent statistical data on the life expectancy of current and former employees was likewise a factor.

Enterprises' scope for internal financing, which had broadened strongly in recent years, remained largely unchanged in 2018. A higher level of provisioning as well as slightly higher write-downs reduced the scope for profit retention. Firms continued to draw on borrowed funds on a large scale, although they did not exceed 2017's high level. The increase in liabilities to banks persisted, however. In the reporting year, the significant expansion in cash – especially in the automotive industry – on the assets side was notable. Net tangible fixed assets rose fairly sharply in line with the very dynamic business investment up to that point. It is also worth noting that, in purely arithmetical terms, gross capital formation was not financed entirely by funds generated internally for the first time since 2012.

Given the distinct economic slowdown, non-financial corporations are likely to increase their business activity only moderately during the current year. The ongoing need for adjustment to pension provisions owing to interest rates and the continuing rise in personnel expenses are likely to put downward pressure on the profitability of enterprises' activity as well.

Underlying trends

Less favourable macroeconomic environment and increased cost pressures due to necessary pension provisions in particular …

The boom in the German economy continued in 2018, though not at the same pace as in 2017. Real gross domestic product (GDP) grew by 1.5%. Economic growth in the reporting year thus largely paralleled the expansion in potential output. Aggregate capacity utilisation remained unchanged on balance and continued to exceed its longer-term average considerably. The main reason for the cyclical slowdown was the headwinds coming from the global setting, which was compounded by supply-side problems in the automotive industry.[1] Exports therefore saw only muted growth. Private consumption lost some steam compared to the previous year despite the ongoing favourable labour market developments. On the other hand, very dynamic business investment and rising housing construction investment still emitted strong demand impulses. There were additional burdens on the cost side owing to the necessary increase in provisions for pension obligations given the further decline in discount rates. Likewise, significantly higher prices had to be paid for industrial raw materials and intermediate goods. Moreover, the persistently high level of tension on the labour market caused sharp wage growth.

… led to a distinct decline in enterprises' profitability

Overall, enterprises' pre-tax return on sales in the reporting year declined from the high values of the previous two years, dropping to 4.2%.[2] However, this was still higher than during the period from 2011 to 2015. The sharp decrease in the discount rate for pension provisions is likely to have played a major role here. Furthermore, the slower pace of economic activity, the associated weaker growth in the sales markets and the elevated cost pressure coming from input factors also squeezed profit margins and reduced enterprises' profitability. The declining annual results in certain economic sectors was also attributable to sector-specific causes. For example, decreases in investment income in the chemical and pharmaceutical industry pushed down the gross return on sales, whilst energy and water suppliers no longer had the preceding year's extraordinary income from the nuclear fuel tax refund. Car manufacturers' temporary production losses had less of an impact on the income statements of the automotive industry than might have been expected, however. Although supply-side problems reduced sales growth in the automotive industry, the decline in the return on vehicle manufacture was mitigated by a clear rise in investment income, as had been seen in previous crisis years.

Marked increase in pension provisions chiefly due to falling discount rates

In 2018, the discount rate for the valuation of provisions for post-employment benefit obligations applicable according to the German Commercial Code *(Handelsgesetzbuch)* fell by just under 0.5 percentage point compared with the end of the previous year on account of the ten-year smoothing mechanism.[3] This was the largest decrease in the discount rate since 2015, after which new legislation extended the reference period for calculating the average discount rate from seven to ten years. The need to adjust the reported pension provisions also depends on the performance of the assets held for settlement purposes. Whilst in previous years enterprises benefited from appreciation in the value of plan assets, assets held for settlement purposes evidently underperformed in terms of value over the reporting year. This made additional provisions necessary. Another albeit quantitatively less significant factor is likely to have been the application of new mortality tables, which take into account the higher average life expectancy of current and former employees in the statistical data. All in all, the necessary pension provisions and the corresponding interest and personnel expenses – both of which strain profitability – were up significantly.

1 See Deutsche Bundesbank (2019a).
2 The analysis for 2018 is based on some 22,000 financial statements, which were roughly extrapolated based on the evaluation of aggregate sales data from the company register. For details on the current procedure, see Deutsche Bundesbank (2011).
3 Data refer to the example of obligations with a residual maturity of 15 years.

Decline in corporate insolvencies curbed

The number of corporate insolvencies fell once again in 2018, reaching the lowest level since the most recent Bankruptcy Act was passed in 1999. Enterprises' sound capital base as well as the favourable funding and debt restructuring conditions are likely to have been a factor in this regard. The manufacturing sector, which was particularly affected by the cyclical slowdown, also saw a further considerable decline in the number of insolvent firms. However, the pace of the overall decrease in corporate insolvencies slowed slightly in 2018. In some sectors, such as construction, accommodation and food service activities, and information and communications services, there was a marginal rise in the frequency of insolvencies.

Sales and income

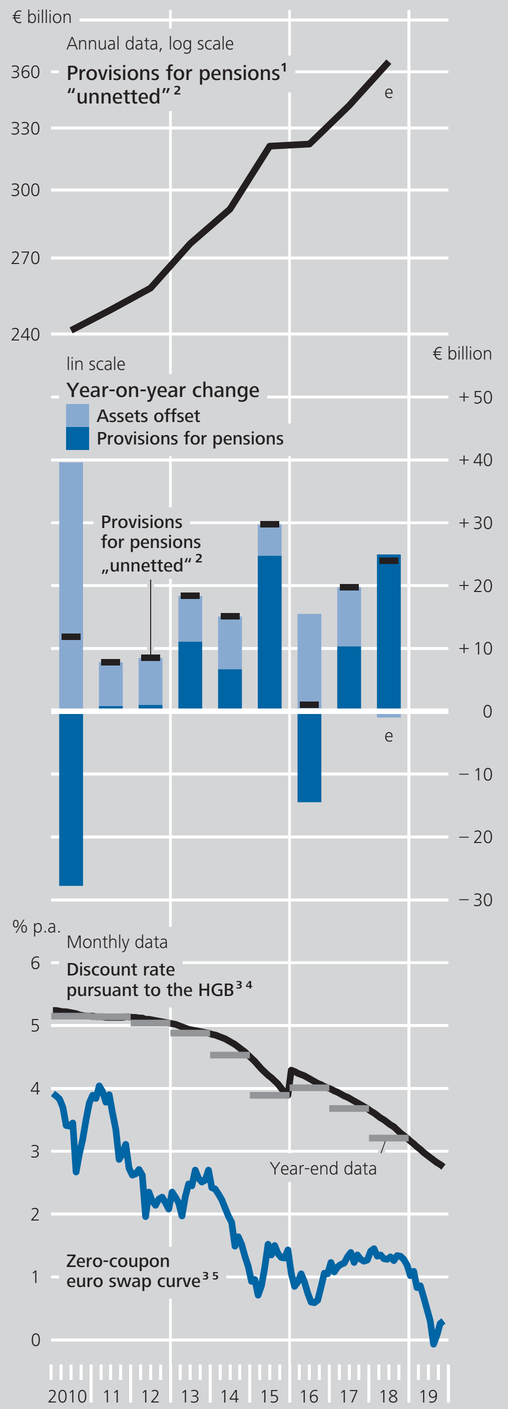
Sales growth still strong, also due to price effects

Sales growth among non-financial corporations was strong in 2018 at just over 5%, albeit somewhat below the preceding year's increase. As before, the increases in sales revenues are likely to have been attributable to volume and price effects in more or less equal measure, as prices for goods and services rose roughly half as much as sales. For example, the prices of industrial goods on the domestic market went up by 2.6% and therefore at a similar rate as in the preceding year, and prices for goods exports were 1.2% higher than in 2017. Interest income remained weak in light of the persistent low interest rate environment. By contrast, the trend increase in investment income continued. One-off effects in the automotive industry, where there was a rise in the dividends of subsidiaries, played an important role in this context. Other operating income was at a low level, too.[4]

Despite the slowdown in the industrial sector, the economic situation in 2018 was robust

4 This is also attributable to the impact of the German Accounting Directive Implementation Act *(Bilanzrichtlinie-Umsetzungsgesetz)* as income that had been recorded as other operating income up to and including 2015 has been allocated to sales since 2016.

Indicators on occupational pension obligations



1 Extrapolated results from corporate financial statements statistics. 2 Estimated. Provisions for pensions plus financial assets which are used specifically to fulfil pension obligations and are therefore off-limits to all other creditors. 3 Residual maturity of 15 years. 4 Section 253(2) of the German Commercial Code (HGB) requires pension obligations with a residual maturity of more than one year to be discounted at the average market interest rate of the past ten financial years (seven until end-2015) according to their residual maturity. 5 According to the Regulation on the Discounting of Provisions (*Rückstellungsabzinsungsverordnung*), the zero-coupon euro swap curve serves as a basis for determining the discount rates.

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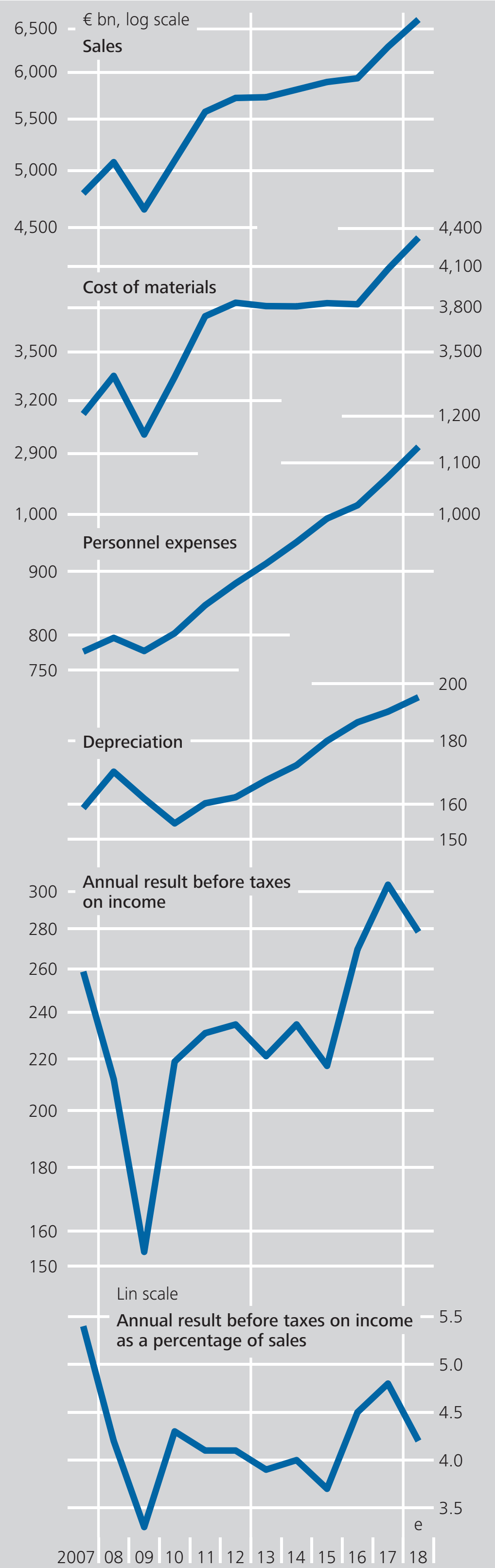
Selected indicators from German enterprises' income statement*



* Extrapolated results from corporate financial statements statistics.

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Sales growth high in energy and construction sectors but low in automotive industry

overall and this was reflected in sales growth across all sectors of the economy. Sales grew particularly strongly in the energy sector. This was due, on the one hand, to higher world market prices for energy and, on the other hand, to the fact that individual large enterprises distinctly increased their electricity trading activities. The above average growth in sales in the construction sector is likely to be attributable to flourishing construction activity bolstered by relatively good weather conditions towards the end of the year. By contrast, the automotive industry recorded sales growth of around 1% in 2018, the weakest growth since the crisis year of 2009. This was partly due to supply-side difficulties following implementation of a new emissions test – the Worldwide Harmonised Light Vehicle Test Procedure (WLTP).

Considerable increase in cost of materials and personnel expenses

At just under 6%, non-financial corporations' total expenses experienced steeper growth in the reporting year than total income. This was largely driven by another considerable increase in the cost of materials on the back of rising commodity prices. Accordingly, the construction sector and energy companies, in particular, recorded high levels of expenditure growth. In light of the ongoing low interest rate environment, the interest-related increase in pension provisions continued to push up both personnel and interest expenses significantly (+5¾% and +25%, respectively). Just under half of the increase in interest expenses was recorded by manufacturers of transport equipment. However, the increase in personnel expenses was also driven by substantial wage increases and the high level of employment growth in the reporting year. Other expenses – the third largest expenditure item – were back to reporting distinct growth levels (4½%) after a number of years marked by one-off effects as a result of the Accounting Directive Implementation Act.[5]

5 In addition to the impact of extending the definition of revenue to the detriment of other operating income, the Accounting Directive Implementation Act shifted items from other operating expenses to the cost of materials.

Enterprises' income statement*

Item	2016	2017	2018e	Year-on-year change 2017	Year-on-year change 2018e
Income	€ billion			%	
Sales	5,933.2	6,287.7	6,614.3	6.0	5.2
Change in finished goods1	30.5	42.8	55.5	40.4	29.5
Gross revenue	5,963.7	6,330.5	6,669.7	6.2	5.4
Interest and similar income	19.2	19.9	19.5	3.6	– 2.2
Other income2	229.9	240.2	242.5	4.5	1.0
of which: from long-term equity investments	44.4	51.4	65.5	15.8	27.5
Total income	6,212.8	6,590.6	6,931.7	6.1	5.2
Expenses					
Cost of materials	3,823.8	4,081.2	4,325.8	6.7	6.0
Personnel expenses	1,017.3	1,072.0	1,133.5	5.4	5.7
Depreciation	186.3	190.0	195.1	2.0	2.7
of tangible fixed assets3	169.8	172.2	180.5	1.4	4.8
Other4	16.5	17.7	14.6	7.7	– 17.9
Interest and similar expenses	59.3	64.7	80.8	9.3	24.9
Operating taxes	8.8	4.3	4.5	– 50.4	2.6
of which: Excise duties	4.4	0.0	0.0	– 100.0	.
Other expenses5	847.9	874.6	913.6	3.2	4.5
Total expenses before taxes on income	5,943.3	6,286.8	6,653.3	5.8	5.8
Annual result before taxes on income	269.6	303.8	278.4	12.7	– 8.4
Taxes on income6	57.2	63.0	60.3	10.1	– 4.3
Annual result	212.4	240.8	218.1	13.4	– 9.4
Memo item:					
Cash flow7	389.9	447.0	439.2	14.7	– 1.7
Net interest paid	40.1	44.8	61.4	12.0	36.9
	As a percentage of sales			Percentage points	
Gross income8	36.1	35.8	35.4	– 0.3	– 0.3
Annual result	3.6	3.8	3.3	0.3	– 0.5
Annual result before taxes on income	4.5	4.8	4.2	0.3	– 0.6
Net interest paid	0.7	0.7	0.9	0.0	0.2

* Extrapolated results; differences in the figures due to rounding. 1 Including other own work capitalised. 2 Excluding income from profit transfers (parent company) and loss transfers (subsidiary). 3 Including write-downs of intangible fixed assets. 4 Predominantly write-downs of receivables, securities and other long-term equity investments. 5 Excluding cost of loss transfers (parent company) and profit transfers (subsidiary). 6 In the case of partnerships and sole proprietorships, trade earnings tax only. 7 Annual result, depreciation, and changes in provisions, in the special tax-allowable reserve and in prepaid expenses and deferred income. 8 Gross revenue less cost of materials.

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Sources and uses of funds

Sources and uses of funds fell slightly

Enterprises' sources and uses of funds fell slightly in 2018. The fall in the sources of funds was spurred by a moderate decline in external funds while internal funds remained almost constant. External funds, in turn, declined following a reduced build-up of long-term obligations in comparison with the previous year. Turning to the uses of funds, there was a clear decline in financial asset formation compared with the previous year, when investment had been characterised by an exceptionally high level of acquisition of other long-term equity investments and related claims. In the reporting year, non-financial asset formation rose to a new record level.[6] In addition, beyond replacement purchases, new investment surpassed all levels recorded since the start of the survey. On

6 The calculation of the net increase in tangible fixed assets in the extrapolated results of the corporate financial statements statistics has been aligned with the Federal Statistical Office's investment survey. Goodwill is no longer included under investment in intangible fixed assets, but under the acquisition of other long-term equity investments. Consequently, goodwill is no longer part of the intangible assets recorded under non-financial assets, but is included in other long-term equity investments recorded under financial assets. In order to ensure consistency over time, this amendment has also been made for all previous years up to and including 1997.

Enterprises' sources and uses of funds*

€ billion

Item	2016	2017	2018e	Year-on-year change 2017	Year-on-year change 2018e
Sources of funds					
Capital increase from profits and contributions to the capital of non-corporations1	64.4	75.7	57.6	11.3	– 18.0
Depreciation (total)	186.3	190.0	195.1	3.7	5.1
Increase in provisions2	– 2.6	16.2	26.6	18.8	10.4
Internal funds	248.1	281.8	279.3	33.7	– 2.5
Increase in capital of corporations3	25.4	28.1	36.3	2.7	8.2
Change in liabilities	100.5	195.8	176.9	95.3	– 18.9
Short-term	60.3	146.9	148.3	86.6	1.4
Long-term	40.2	48.9	28.7	8.7	– 20.3
External funds	125.9	223.9	213.2	98.0	– 10.7
Total	374.0	505.7	492.5	131.7	– 13.2
Uses of funds					
Increase in tangible fixed assets (gross)	213.1	217.2	232.6	4.1	15.4
Increase in tangible fixed assets (net)4	43.3	45.0	52.0	1.7	7.1
Depreciation of tangible fixed assets	169.8	172.2	180.5	2.4	8.3
Change in inventories	21.7	61.3	61.6	39.6	0.3
Non-financial asset formation (gross investments)	234.8	278.5	294.2	43.7	15.6
Change in cash	22.9	4.0	26.1	– 18.9	22.1
Change in receivables5	67.5	127.0	107.5	59.4	– 19.5
Short-term	55.2	95.3	91.6	40.1	– 3.7
Long-term	12.3	31.6	15.9	19.3	– 15.8
Acquisition of securities	0.7	4.9	– 2.1	4.1	– 7.0
Acquisition of other long-term equity investments6	47.9	91.3	66.8	43.4	– 24.5
Financial asset formation	139.1	227.2	198.3	88.1	– 28.9
Total	374.0	505.7	492.5	131.7	– 13.2
Memo item: Internal funds as a percentage of gross investments	105.6	101.2	94.9	.	.

* Extrapolated results; differences in the figures due to rounding. **1** Including "GmbH und Co. KG" and similar legal forms. **2** Including change in the balance of prepaid expenses and deferred income. **3** Increase in nominal capital through the issue of shares and transfers to capital reserves. **4** Change in tangible fixed assets (including intangible assets but excluding goodwill). **5** Including unusual write-downs of current assets. **6** Including change in goodwill.

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balance, gross investment exceeded internal funds for the first time since 2012.

Balance sheet developments

Total assets and financial assets up steeply again

German enterprises' total assets increased in 2018 in line with continued buoyant sales growth; however, while the pace was still high, it was somewhat slower than in 2017. On the assets side, the share of financial assets in total assets remained broadly unchanged. Receivables from affiliated companies rose steeply – particularly the long-term ones. This reflects the growing interconnectedness of enterprises. As in the previous year, manufacturers of transport equipment posted the highest value for the acquisition of other long-term equity investments. The electrical engineering industry and the chemical and pharmaceutical sector also increased their holdings of other long-term equity investments distinctly. Trade credits rose dynamically, keeping pace with sales growth. Cash was also up significantly, boosted primarily by the automotive sector covering its increased liquidity needs using surpluses from operating activities and intra-group borrowing from financing subsidiaries.

Enterprises' balance sheet*

Item	2016	2017	2018e	Year-on-year change 2017	Year-on-year change 2018e
Assets	€ billion			%	
Intangible fixed assets1	68.1	75.3	79.7	10.6	5.9
Tangible fixed assets	1,084.5	1,122.3	1,169.8	3.5	4.2
Inventories	687.9	749.2	810.8	8.9	8.2
Non-financial assets	1,840.5	1,946.7	2,060.4	5.8	5.8
Cash	321.4	325.5	351.6	1.3	8.0
Receivables	1,438.1	1,561.1	1,665.0	8.6	6.7
of which:					
Trade receivables	412.8	443.5	466.2	7.5	5.1
Receivables from affiliated companies	853.5	935.5	1,005.2	9.6	7.4
Securities	104.7	109.5	107.4	4.6	– 1.9
Other long-term equity investments2	866.7	944.3	1,000.1	9.0	5.9
Prepaid expenses	22.1	24.0	25.9	8.3	8.2
Financial assets	2,753.1	2,964.3	3,150.1	7.7	6.3
Total assets3	4,593.5	4,911.1	5,210.4	6.9	6.1
Capital					
Equity3	1,418.8	1,522.5	1,616.4	7.3	6.2
Liabilities	2,425.3	2,621.1	2,798.0	8.1	6.8
of which:					
to banks	505.4	525.4	557.5	4.0	6.1
Trade payables	320.9	345.2	364.7	7.6	5.6
to affiliated companies	1,051.3	1,149.9	1,225.3	9.4	6.6
Payments received on account of orders	243.1	276.3	307.2	13.7	11.2
Provisions	715.0	729.5	754.3	2.0	3.4
of which:					
Provisions for pensions	231.6	242.0	266.9	4.5	10.3
Deferred income	34.5	38.0	41.7	10.1	9.7
Liabilities and provisions	3,174.7	3,388.6	3,594.0	6.7	6.1
Total capital3	4,593.5	4,911.1	5,210.4	6.9	6.1
Memo item:					
Sales	5,933.2	6,287.7	6,614.3	6.0	5.2
Sales as a percentage of total assets	129.2	128.0	126.9	.	.

* Extrapolated results; differences in the figures due to rounding. **1** Excluding goodwill. **2** Including shares in affiliated companies and goodwill. **3** Less adjustments to equity.
Deutsche Bundesbank

Tangible fixed assets accumulated at accelerated pace

Non-financial assets increased significantly in 2018 and even by a little more than in the previous year. Nevertheless, the share of tangible fixed assets in total assets continued to fall. A number of sectors – including chemical and pharmaceutical, manufacture of machinery and equipment, construction and trade (excluding motor vehicles) – accumulated tangible fixed assets at an above average rate. Furthermore, non-financial corporations continued to invest heavily in intangible fixed assets. The chemical and pharmaceutical industry, in particular, upped purchases of patents and distribution rights, but manufacturers of transport equipment and wholesale retailers also increased their holdings of intangible fixed assets significantly. Once again, enterprises stocked up their inventories substantially. As in 2017, the majority of the inventories were held in roughly equal parts by the construction sector and the manufacturing sector as a whole. Inventories were distributed relatively broadly across the individual industrial sectors. However, there is no sign of extraordinarily strong stockpiling in the overall balance sheet for the automotive sector, which would have been plausible given supply delays as a result of the WLTP.

On aggregate, in 2018 the equity ratio remained at its now considerable level. Small and

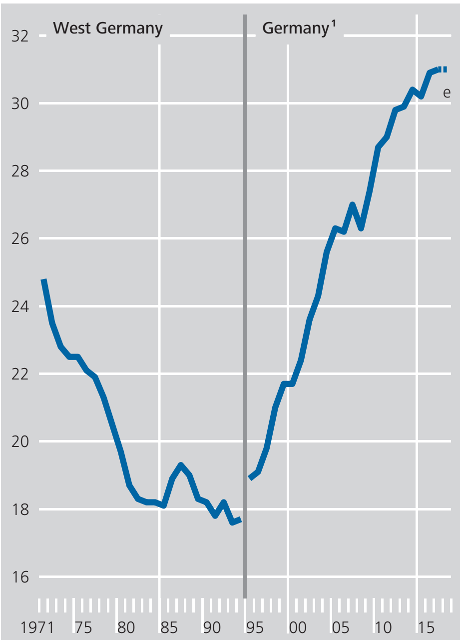
The evolution of German enterprises' equity ratio

The rise in non-financial corporations' savings played a major role in driving Germany's current account surplus to today's high level.[1] One consequence of firms retaining a large share of their earnings over the years was the steady improvement in their equity base.[2] According to extrapolated results from the corporate financial statement statistics, the aggregate equity ratio of non-financial enterprises in Germany – defined as equity as a percentage of total assets – increased from around 20% in 1997 to 31% in 2018.

Compared with the equity ratios of other countries of the European Union, which are based on data provided by the Bank for the Accounts of Companies Harmonized (BACH), German non-financial corporations had a relatively small median equity base at the start of the last decade.[3] Since then, the equity base has tended to become stronger in many countries, with this rise in equity being higher than average in Germany. At last count, German enterprises' equity ratio was at the higher end for the group of countries under analysis.[4]

Equity ratios of non-financial enterprises in Germany*

Equity as a percentage of total assets



* Extrapolated results from the corporate financial statement statistics. **1** Equity including planned dividend payout.
Deutsche Bundesbank

Disaggregated data in the Bundesbank's corporate balance sheet statistics suggest that growth in the equity ratio was a widespread development across Germany's corporate sector. However, significant disparities in terms of the size of the increase can be seen when breaking firms down by size and legal form. For example, the strengthening of small and medium-sized enterprises' equity base was particularly pronounced, albeit starting from a low level in the 1990s. By contrast, the increase was significantly lower for large enterprises. Furthermore, the equity ratio rose sharply for corporations, in particular – although they started from a higher level than non-corporations. On the other hand, an examination of the manufacturing and services sectors as a whole revealed no noteworthy differences in terms of the level of the equity ratio or the magnitude of its increase.

Analysing the reasons underlying the changes in German enterprises' equity ratio

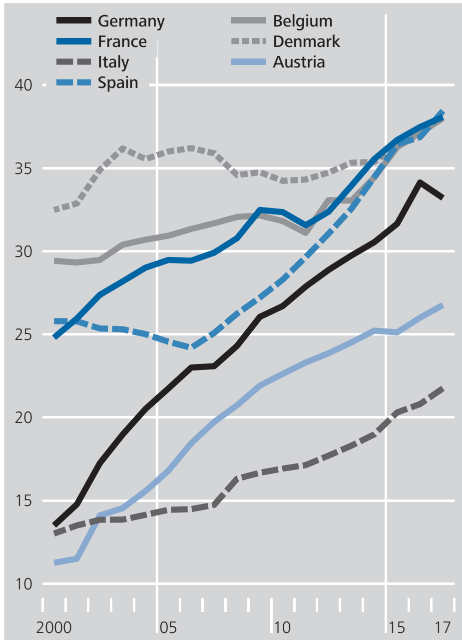
1 See Deutsche Bundesbank (2018a).
2 See also Deutsche Bundesbank (2018b, 2019b).
3 The BACH database of the European Committee of Central Balance Sheet Data Offices (ECCBSO) publishes selected balance sheet figures on corporations for a restricted group of EU countries.
4 See also Deutsche Bundesbank (2013). Looking at the aggregate equity ratio in BACH, the trend increase for Germany is weaker compared with the median. This is consistent with the observation that it was notably small and medium-sized enterprises in Germany that strengthened their equity base.

also sheds more light on the evolution of the corporate saving ratio and Germany's current account balance. In view of the relatively high debt ratio across Germany's corporate sector in the 1990s, there is a strong case for interpreting the increase in the equity ratio as an attempt on the part of enterprises to deleverage. Since the end of the 1990s, debt financing has probably become less attractive to enterprises in Germany on account of developments such as the corporate tax reform of 2000 and 2001 as well as stricter banking regulation. These changes are likely to have prompted firms which were highly leveraged at that time, in particular, to strengthen their equity base.[5] To test this hypothesis, firm-specific data from German corporate balance sheets are used to compare relatively highly leveraged enterprises with enterprises with lower leverage ratios in order to explore how their respective equity ratios have evolved since 1998 relative to the pre-1998 period.[6] If the equity ratios diverge more strongly as of 1998, this approach would suggest that it is the result of the role played by leverage. The econometric results support this theory, since the equity ratio of firms with initially relatively low equity ratios and high short-term liabilities rose particularly sharply.[7]

One factor that may have slightly dampened the increase in the equity ratio, particularly since the current period of low interest rates began, is the increase in necessary pension provisions. Pursuant to the German Commercial Code *(Handelsgesetzbuch),* pension provisions must equal the present value of expected payments discounted using an interest rate which, since 2010, has been calculated as the moving average of the market interest rates of the past years.[8] Firms that had made a commitment to pay current and former employees an occupational pension under defined benefit pension plans were forced to raise

Equity ratios of non-financial corporations*

Equity as a percentage of total assets



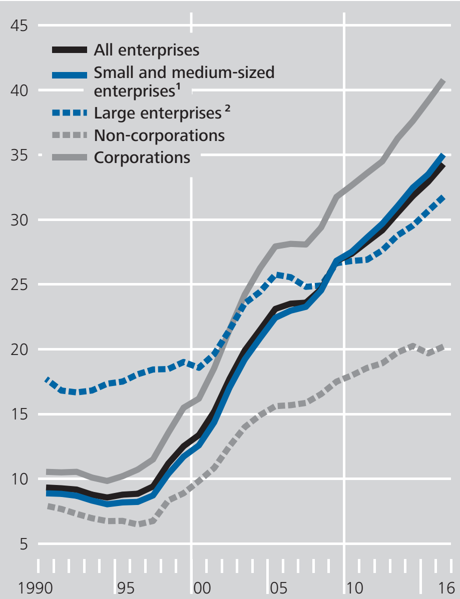
Sources: Bank for the Accounts of Companies Harmonized (BACH), Banque de France. * Country-specific median of ratios.
Deutsche Bundesbank

their pension provisions due to the decline in interest rates. Taken by itself, this narrowed firms' scope to expand their equity ratio. In order to quantify the significance of this effect, the evolution of the equity ratio

5 See Deutsche Bundesbank (2018b).
6 The year 1998 is roughly the point at which enterprises' equity ratios started to rise. Balanced samples of firms were taken for the 1994-2001 period based on a difference-in-differences approach. The firm-specific equity ratio was regressed on a dummy variable with a value of 1 for the period as of 1998 as well as on an interaction term composed of this dummy variable and the mean of the data for selected firm characteristics in the pre-1998 period. The estimation equation also includes fixed effects at the firm level.
7 Additional placebo estimations suggest that this effect goes beyond the mean reversion of leverage ratios documented in the literature (Lemmon, Roberts and Zender, 2008).
8 Upon the introduction of the Accounting Law Modernisation Act *(Bilanzrechtsmodernisierungsgesetz)* with effect from 1 January 2010, the applicable discount rate for an average residual maturity of 15 years was 5.25%. The period on which the calculation of the average discount rate is based was extended in 2016 from seven to ten years for financial years after 2015. For information on the potential effects of changing the reference period in 2016, see also Deutsche Bundesbank (2016).

Equity ratios of German non-financial enterprises at the firm level*

Equity as a percentage of total assets



Source: Bundesbank calculations based on the Bundesbank dataset for corporate balance sheets. * Group-specific median of ratios. **1** Enterprises with sales of less than €50 million. **2** Enterprises with sales of €50 million or more.

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of enterprises with and without pension provisions was compared over consecutive years as part of the regressions, with steps being taken to ensure the statistical comparability of the two groups of enterprises.[9] The results suggest that the sharp decrease in the discount rate in the period from 2013 onwards had a statistically significant adverse effect on enterprises' equity ratios. Enterprises with pension provisions increased their equity ratio during this period by around 0.5 to 1 percentage point less than enterprises without pension provisions.[10]

Changes on the assets side of German enterprises' balance sheets can also give clues as to which other factors contributed to the higher equity ratio. According to additional econometric estimations, the rise in the equity ratio between 1997 and 2016 was connected to an increase in the shares of tangible fixed assets, other long-term equity investments and cash relative to total assets.[11] Growth in cash holdings was particularly pronounced for the more weakly capitalised small and medium-sized enterprises. This suggests that precautionary motives could have played a role in this group.[12] Based on empirical estimations, however, there is no evidence to support the hypothesis that the growing share of intangible assets contributed to the increase in the equity ratio.[13]

In summary, it can be concluded that deleveraging, in particular, has a statistically significant and quantitatively important effect on the increase in the equity ratio. Nevertheless, further investigation is needed in order to better distinguish between the effects of changes in the structural environment, such as corporate taxation or banking regulation, which brought about firms' deleveraging. In view of the meanwhile comparatively low level of debt in the German non-financial corporate sector by international standards, the decline in corporate savings since 2015 as well as the currently more subdued level of profitability, it is unlikely that enterprises will sizeably increase their equity ratio in the years ahead.

9 The estimation model is based on a difference-in-differences approach with a synthetic control group, which ensures the same average values for both groups of enterprises in the four-year period prior to the year under analysis with regard to the equity ratio.
10 Extending the reference period for calculating the average discount rate from seven to ten years in 2016 appears to have afforded enterprises some temporary relief, as there is no discernible additional increase in the estimated effect between 2015 and 2016. Empirically, there is no evidence that changes made in the context of the Accounting Law Modernisation Act in 2010 had a negative impact on enterprises' equity ratios.
11 The results are based on a regression of the changes in the shares of various assets relative to total assets on changes in the equity ratio, which statistically controlled for the effects of unobserved variables at the firm level.
12 See Bates, Kahle and Stulz (2009).
13 See Falato, Kadyrzhanova and Sim (2013).

Equity ratio settled at high level

medium-sized enterprises continued to top up their equity base during the reporting year (for more information on the longer-term development of the equity ratio of enterprises in Germany, see the box on pp. 44 ff.). By contrast, large enterprises' equity ratio declined somewhat.[7] This is likely due, in part, to additional provisions for pensions, as direct commitments predominantly affect large enterprises.[8]

Liabilities and provisions also up significantly

In absolute terms, liabilities and provisions recorded significant growth, as did equity. Liabilities to affiliated companies and trade payables rose considerably. As in the previous year, liabilities to banks – in particular those with a short maturity – increased clearly, probably as bridge financing for the acquisition of other long-term equity investments. The marked growth in payments received on account of orders was again largely attributable to the construction sector and is in line with the high level of inventories in this sector. During the reporting year, borrowing by issuing bonds slipped from the high level recorded in the past few years and was weak overall due to the decline in issues of long-term bonds.

Trends for 2019

Further deterioration in macroeconomic environment

With the economy continuing to slow, 2019 is likely to see only a moderate increase in non-financial corporations' business activities. The broad stagnation in world trade will probably have a visible impact on enterprises' export business. However, those enterprises with activities focused more on the domestic market may be able to benefit from robust demand from household consumers and the fact that housing construction is still expanding rapidly. The return on sales of enterprises is expected to feel the squeeze of interest rate adjustments for pension provisions as well as a further rise in personnel expenses. On the basis of the data for the first 11 months of the current year, the discount rate for post-employment benefit obligations is expected to be cut by around 0.5 percentage point in 2019 from the previous year's level. High wage settlements overall to date, the return to full joint financing of the statutory health insurance scheme and an increase in payroll employment will push up per-

Enterprises' balance sheet ratios*

Item	2016	2017	2018e
	As a percentage of total assets1		
Intangible fixed assets2	1.5	1.5	1.5
Tangible fixed assets	23.6	22.9	22.5
Inventories	15.0	15.3	15.6
Short-term receivables	28.4	28.4	28.5
Long-term equity and liabilities3	51.3	51.3	51.2
of which:			
Equity1	30.9	31.0	31.0
Long-term liabilities	15.3	15.3	15.0
Short-term liabilities	37.5	38.1	38.7
	As a percentage of tangible fixed assets4		
Equity1	123.1	127.1	129.4
Long-term equity and liabilities3	204.3	210.3	213.3
	As a percentage of fixed assets5		
Long-term equity and liabilities3	106.5	105.9	106.5
	As a percentage of short-term liabilities		
Cash resources6 and short-term receivables	97.1	94.2	92.8
	As a percentage of liabilities and provisions7		
Cash flow8	13.7	14.6	13.5

* Extrapolated results; differences in the figures due to rounding. 1 Less adjustments to equity. 2 Excluding goodwill. 3 Equity, provisions for pensions, long-term liabilities and the special tax-allowable reserve. 4 Including intangible fixed assets (excluding goodwill). 5 Tangible fixed assets, intangible fixed assets, other long-term equity investments, long-term receivables and long-term securities. 6 Cash and short-term securities. 7 Liabilities, provisions, deferred income and half of the special tax-allowable reserve less cash. 8 Annual result, depreciation, and changes in provisions, in the special tax-allowable reserve and in prepaid expenses and deferred income.

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7 In the extrapolated results of the corporate financial statements statistics, dividends earmarked for distribution are now shown under equity rather than other liabilities in line with enterprises' accounting practice. In the Bundesbank's corporate financial statements statistics, a consistent backcasting has been performed for all previous years up to and including 1997. Including the entire surplus for the year under equity increases this item in mathematical terms.

8 There were also one-off effects for individual large enterprises in the field of information and communications as a result of funding acquisitions with borrowing and extending the balance sheet following an increase in intra-group financial links.

Profitability and financial position of listed groups in 2018 and an outlook for 2019

Weaker global economic growth in 2018 also dampened the performance of German listed non-financial groups.[1] The return on sales,[2] which had been above average in recent years, was somewhat lower in 2018. Adjusted for changes in the consolidation groups, it fell by 0.6 percentage point to 7.6% last year.[3] The decline was sharper in the production sector than in the services sector. This was mainly due to the significant decrease in operating income with only a slight increase in revenues.

Around 60% of those groups that had reported an increase in revenues in 2017 recorded lower revenue growth in the reporting year.[4] A key factor here was the global economic slowdown. Furthermore, enterprise groups in the automotive sector posted weaker sales and those in the chemical industry reported delivery problems. Exchange rate effects relating to the consolidation of foreign subsidiaries also dampened revenues.[5] In addition, the first-time application of new accounting standards had an impact on the financial statements of the enterprise groups.[6]

Revenues, earnings and return on sales of German non-financial groups

Deutsche Bundesbank

1 According to the global reporting principle enshrined in both commercial law and the International Financial Reporting Standards (IFRS), consolidated financial statements are the product of the consolidated single-entity accounts of all global subsidiaries included in the consolidated financial statements. The reporting population comprises approximately 230 non-financial enterprise groups listed in Germany in the Prime Standard segment of the Frankfurt stock exchange.
2 Defined here as the ratio of operating income (EBIT) to revenues.
3 The rates of change for return on sales, revenues, EBITDA and EBIT are published with reporting and consolidation basis adjustments (see Quality report on consolidated financial statements statistics). The figures in the charts are unadjusted so that the size differentials between the items are also visible. For methodological reasons, there may therefore be differences between the rates of change and the path shown in the charts.
4 Groups with changes of a quantitatively significant nature to the basis of consolidation were not included in this calculation. The groups included in the calculation account for 80% of aggregate revenues.
5 After converting the revenues of foreign subsidiaries into euro, the appreciation of the euro negatively affected earnings growth in 2018. The nominal effective exchange rate of the euro against the currencies of the 38 most important trading partners of the euro area (EER-38) rose by an annual average of 5.2% in 2018.
6 This involved the application of the new rules laid down in International Financial Reporting Standard (IFRS) 15: Revenue from Contracts with Customers, which governs the time at which revenue is recognised for contracts comprising multiple components.

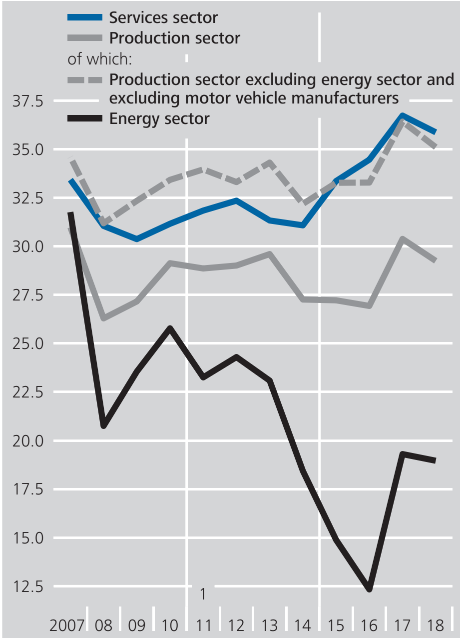
The operating income posted by the groups fell short of the previous year's level. Operating income before depreciation and amortisation (EBITDA) went down by just under 1% in 2018. This was attributable in large part to enterprise groups from the production sector. According to their annual reports, their margins were squeezed by higher costs for commodities and intermediate goods. In addition, motor vehicle manufacturers recorded higher retrofitting and legal costs in connection with the emissions scandal and the introduction of a new emissions testing procedure. This was compounded by the rise in transport costs as a result of the low water levels in the River Rhine as well as the fact that the previous year's result was positively influenced by one-off factors (reimbursement of nuclear fuel tax in the energy sector).

The deterioration in market conditions for products from the production sector[7] and the early application of changes to accounting standards for leasing at one service group resulted in a large volume of depreciation.[8] This lowered operating income (EBIT) after depreciation and amortisation by just over 6% compared to the very high figure recorded the previous year.

The value of long-term tangible assets reported in the balance sheet rose by 1½% on aggregate, reflecting opposing effects. In the services sector, long-term tangible assets grew by 16% owing to the one-off effect caused by leasing contracts, whereas in the production sector, long-term tangible assets decreased by 2½%. The increase of just over 8% in inventories corresponded with the slump in sales in the automotive sector, among other things. Alongside a 4½% rise in trade receivables, cash and cash equivalents also increased considerably on the year, mainly owing to higher liquidity created by the issuance of bonds.

Equity ratios of German non-financial groups

%



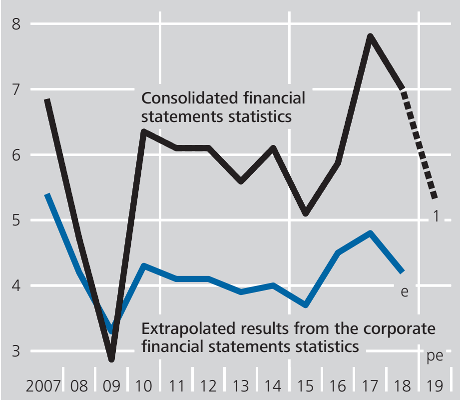
1 Decision to phase out nuclear energy following the Fukushima catastrophe.
Deutsche Bundesbank

On the liabilities side, debt financing rose more sharply than equity, raising the groups' leverage ratio slightly. This was due in part to the issuance of bonds, particularly in the automotive and telecommunications sectors, totalling €60 billion. Since the bonds were mainly issued by the groups' German and international financing subsidiaries, no corresponding increase can be seen in the bonds issued by non-financial corporations

7 Intangible assets were amortised as a consequence of the poor market conditions.
8 This relates to the voluntary early application of the new IFRS 16 governing the accounting treatment of operating leases. From the 2019 reporting year, leased assets not previously included in the balance sheet ("off-balance sheet leases") and the corresponding lease liabilities must be included in the consolidated accounts. Because the new standard means that leases are recognised as assets, lease expenses are replaced by the interest expense and depreciation charge for the newly recognised lease asset. All in all, the new accounting practice will have an impact on various assets and liabilities belonging to the balance sheet and on the profit and loss statement.

Annual result before taxes on income

As a percentage of sales



1 Seasonally adjusted average for Q1 to Q3 2019.
Deutsche Bundesbank

in the issues statistics on debt securities in 2018.

In addition, the one-off effect created by the change in the accounting treatment of leasing led to a marked increase in debt in the services sector. By contrast, on the whole, pension provisions showed no significant changes on the year since there was barely any difference in the end-of-period interest rates used to calculate the present value of the liabilities.[9] On balance, the equity ratio fell by around 1 percentage point to 30½%, reflecting the underlying developments across all sectors of the economy.

Groups' profitability showed a further clear decline in the first three quarters of 2019, with performance in individual sectors deteriorating considerably in the light of the continued economic slowdown and persistent structural challenges. In 2019, profits before taxes on income will probably fall far short of last year's level owing to a rise in expenses. In view of the slight increase in revenues, the gross return on sales is likely to decrease markedly in 2019.

The widespread application of the new accounting standard for leases will probably see a sharp rise in long-term tangible assets, liabilities and depreciation. Besides this, the data for the first three quarters suggest that debt levels may increase further as a result of the new issuance of bonds in the capital markets. Pension provisions are also expected to go up because the reference interest rate used to calculate the present values is likely to fall. On balance, this will probably have a negative impact on groups' equity ratio.

9 The discount rate for pension provisions is based on the interest rate for high quality long-term corporate bonds (AA rating).

sonnel expenses noticeably in 2019. However, enterprises' profitability is expected to benefit from the fact that weaker global economic activity in 2019 is likely to drive down the costs of intermediate goods and raw materials.

Long series with extrapolated results from the corporate financial statements statistics are available at www.bundesbank.de/en/statistics/enterprises-and-households/-/corporate-financial-statements-796226

List of references

Bates, T.W., K.M. Kahle and R.M. Stulz (2009), Why do US firms hold so much more cash than they used to?, The Journal of Finance, Vol. 64(5), pp. 1985-2021.

Deutsche Bundesbank (2019a), The weakness of German motor vehicle production in the second half of 2018, Monthly Report, February 2019, pp. 47-48.

Deutsche Bundesbank (2019b), On the corporate payout ratio in Germany, Monthly Report, March 2019, pp. 24-27.

Deutsche Bundesbank (2018a), The development of savings of non-financial corporations in Germany, Monthly Report, March 2018, pp. 20-22.

Deutsche Bundesbank (2018b), Trends in the financing structures of German non-financial corporations as reflected in the corporate financial statements statistics, Monthly Report, July 2018, pp. 57-67.

Deutsche Bundesbank (2016), Potential effects of the increase in pension provisions as a result of changes to the discount rate on non-financial corporations' savings, Monthly Report, December 2016, pp. 60-63.

Deutsche Bundesbank (2013), Capital base of non-financial enterprises in Germany sustainably strengthened, Monthly Report, December 2013, pp. 44-46.

Deutsche Bundesbank (2011), Financial statements statistics with broader sectoral coverage and a new basis of extrapolation, Monthly Report, December 2011, pp. 32-33.

Falato, A., D. Kadyrzhanova and J. Sim (2013), Rising intangible capital, shrinking debt capacity, and the US corporate savings glut, Finance and Economics Discussion Series 2013-67, Board of Governors of the Federal Reserve System.

Lemmon, M.L., M.R. Roberts and J.F. Zender (2008), Back to the beginning: Persistence and the cross-section of corporate capital structure, The Journal of Finance, Vol. 63(4), pp. 1575-1608.