

DEFAULT STUDY

Semiannual Report for 2016

Market analyses
September 2016



Management Summary

1.

The solid development of the German economy in the first six months of 2016 was reflected by another decline in the number of defaults, continuing the trend that has been observed since 2009. After 2015 had brought a new all-time low of 1.60%, the default rate of German companies fell to an even lower level in the period from January to June 2016 (1.54%). The default risk for the group of medium-sized companies (with annual revenues of more than EUR 20 million) remained stable at 0.45%.

2.

Small and micro-enterprises were able to benefit most from this trend. Businesses with annual sales between EUR 0.5 and 2 million and enterprises with sales less than EUR 0.5 million registered default rates of 1.62 and 1.27% respectively, while the default rate of businesses with annual sales between EUR 2 and 10 million fell even more sharply (from 1.12% in late 2015 to currently 0.99%). The risk situation of larger companies remained largely unchanged in the first six months of 2016.

3.

Businesses in southern and eastern Germany were particularly resilient. The federal states of Thuringia in the east (1.14%) and Bavaria in the south (1.33%) registered the lowest default rates, while businesses in Berlin (2.22%) were subject to the highest insolvency risks in the country.

4.

Providers of business-related services and companies from the chemical industry were subject to significantly sub-average risks of failure (at 1.31 and 0.98% respectively). Companies in the basic and primary industries, meanwhile, were once again the most secure with a default rate of 0.83%. At the other end of the scale, the transport and logistics industry remained the most default-prone segment of the economy with a rate of 2.44%.

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5.

The robust economic growth of the current year should have a positive impact on the further development of the German default rate. We currently expect the 2016 default rate to fall significantly to a level of 1.51%.

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1. Definitions and data sources

This analysis aims to outline the current risk situation of German enterprises based on the empirical default rates. The study builds on data from the Creditreform Business Database that contains facts and figures for the about three million active businesses (companies and self-employed individuals) that are domiciled in Germany and about those companies that are either insolvent or considered to represent credit risks. The database provides a full representation of the corporate sector in Germany and is considered to represent the most comprehensive database of German companies worldwide. It features up-to-date information about corporate finances, levels of financial strength and organizational characteristics. Data include headcounts and sales revenue figures as well as information about the type of business activity, the legal structure of the company in question and court records of negative entries (see the Appendix for a more detailed list).

This analysis is based on a definition of default events that complies with the criteria of Basel III. Accordingly, a business is considered to be in default when (i) insolvency proceedings have been opened against the business itself; (ii) consumer insolvency proceedings have been opened against one or several of its executives; or (iii) an arrest order or an affidavit have created a situation under which the company is regarded as having defaulted. We also refer to these criteria collectively as 'hard negative entries'. An enterprise is also in default when it must be assumed on the basis of the Creditreform information that it is highly unlikely to meet its payment obligations. Thus, this definition of a default – which is also used by banks – goes further than the official statistics which only record the number of insolvencies, for example by

including companies that have run up arrears of 60 or 90 days.

This analysis is focused on one-year default rates. For the purposes of this analysis, companies were in default when either defaulted payments or hard negative entries were recorded for them on 30 June 2016, after they had been classified as solvent one year earlier (on 30 June 2015). At the end of June 2016, approx. 2.782 million enterprises were classified as active businesses in Germany. These are companies that actively engage in trade activities and in the financial markets. All groups and sub-groups that are introduced on the following pages, no matter by which structural characteristics they may be defined are representative samples.

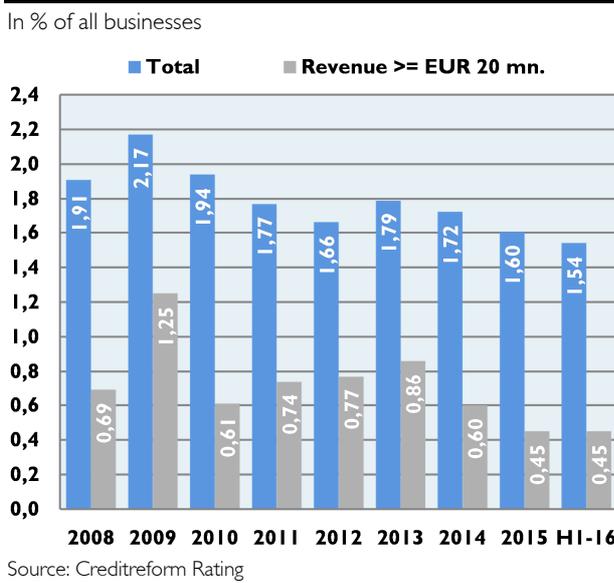
2. Defaults in the German economy

The German economy maintained its growth momentum in the first six months of 2016. Following a strong start into the new year, however (+0.7% in Q1 quarter-on-quarter), the growth rate fell to 0.4% in Q2. This slowdown mainly reflected a fall in investments, which had expanded significantly by 1.7% (quarter-on-quarter) in Q1. In the second quarter, conversely, investments in equipment fell from the previous quarter's level by 2.4%, and investments in the construction industry also declined by 1.6% quarter-on-quarter, due to the previous winter's mild weather which had cushioned the usual seasonal slowdown.

Following the economy's extraordinarily strong start into the new year, a much stronger backlash might have been expected for the second quarter. Such a backlash did not materialize, however, and the growth during spring was surprisingly robust, mainly underpinned by unexpectedly strong

foreign trade figures. Exports in Q2 rose significantly (by 1.2% q-o-q), while the volume of imports remained largely stable (-0.1% q-o-q). Meanwhile, private consumption increased slightly by 0.3% q-o-q, making a small contribution (0.1%) to the positive development of the GDP.

Fig. 1: Development of default rates in Germany



The robust development of the German economy was reflected by another fall in the default rates of German businesses (see Fig. 1), continuing the trend that started in 2009. From that year's rate of 2.17%, the percentage of companies that went into default fell at first steadily to 1.66% in 2012 before stabilizing on that level (1.79% in 2013 and 1.72% in 2014). From 2014 onward, the downward trend gained further momentum, and a new all-time low of 1.60% was registered for 2015. The percentage of failed businesses fell again in the first six months of 2016 when only 42,904 out of a total of 2.782 million active businesses in Germany went into default, a rate of 1.54%.

The default rates in the group of medium-sized companies with annual revenues of more than EUR 20 million have historically been lower than the

average for the German economy. After a brief period (2010 to 2012) during which the default rates in this segment of the economy defied the trend of the overall economy and rose from 0.61 to 0.77%, the default rates have since converged with the general trend. In 2014, the default rate in the group of companies with annual revenues of more than EUR 20 million fell from 0.86 to 0.60%, a downward trend that was continued in 2015 (when it fell to 0.45%), albeit with a somewhat reduced momentum. In the first six months of 2016, the default rate in this economic segment stabilized on a low level, while the default rate for the overall economy continued to decrease.

Fig. 2: Default rates of companies from different size categories

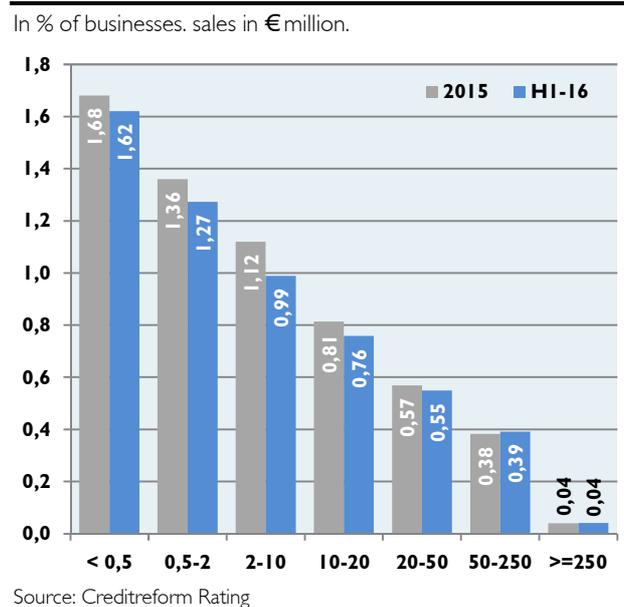
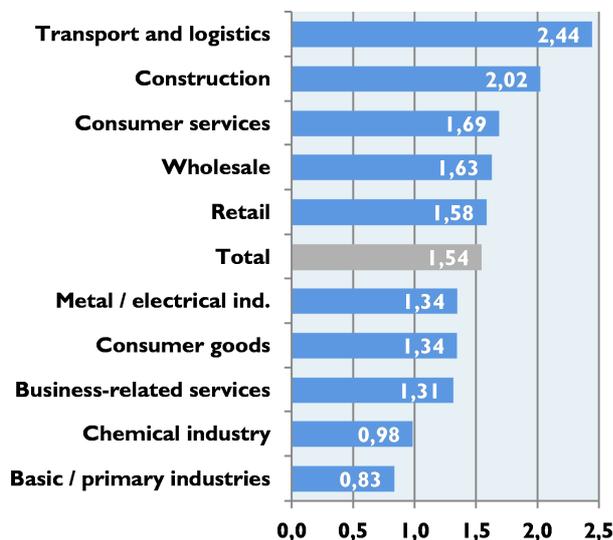


Fig. 2 illustrates the clear correlation between corporate size and default risk. The more annual sales a company generates, the smaller its apparent risk of insolvency. On the other hand, however, the default risks of small and micro-enterprises have decreased most sharply in the recent past. For companies with annual sales of less than EUR 0.5 million and for companies with annual sales between EUR 0.5 and 2 million, the

default rates fell to 1.62% (-0.06 p.p.) and 1.27% (-0.09 p.p.) respectively. Companies with annual sales between EUR 2 and 10 million benefited more strongly from this trend, as their default rate fell from 1.12% in late 2015 to 0.99%. The risk situation for larger companies, conversely, remained largely unchanged during the first six months of the new year. Companies with annual sales of more than EUR 250 million had a stable default rate of 0.04%.

Fig. 3: Default rates of individual industries

As per Q2-16, in % of businesses



Source: Creditreform Rating

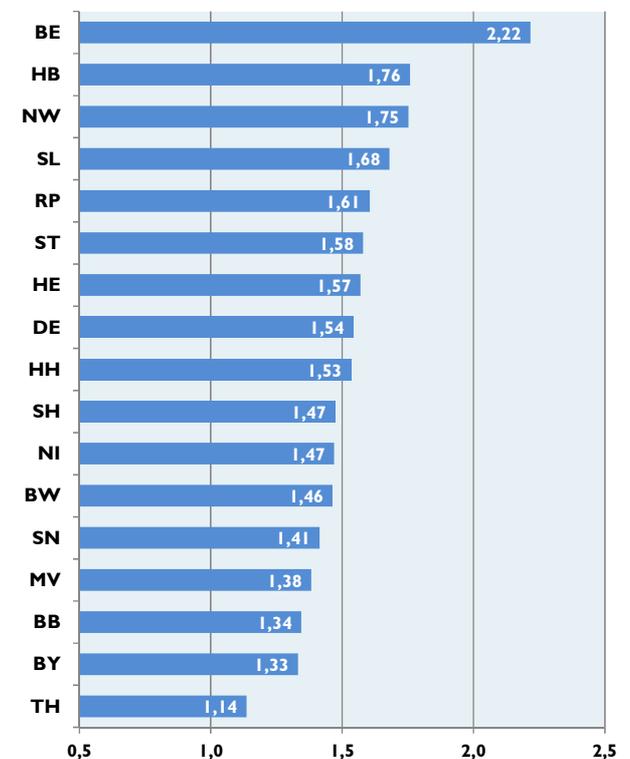
Breaking down the German economy into different industries (see Fig. 3), it becomes apparent that some industries are more risk-prone than others. Providers of business-related services and companies from the chemical industry (with default rates of 1.31 and 0.98% respectively) were more resilient than the average of the German economy (1.54%). Companies from basic and primary industries were once again subject to the relatively lowest default risk (0.83%). At the other end of the scale, providers of consumer-related services and construction companies operated with a relatively high risk of business failure (1.69 and 2.02% respectively), higher than all other

industries with the exception of transport and logistics. This industry once again topped the default risk table with a rate of 2.44%.

While differences between the various industries remain, the overall risk situation in all industries has improved over the first six months of 2016. These improvements were particularly pronounced in the chemical industry (0.22%) and for providers of metal and electric goods (0.16%).

Fig. 4: Default rates of individual federal states

As per Q2-16, in % of businesses



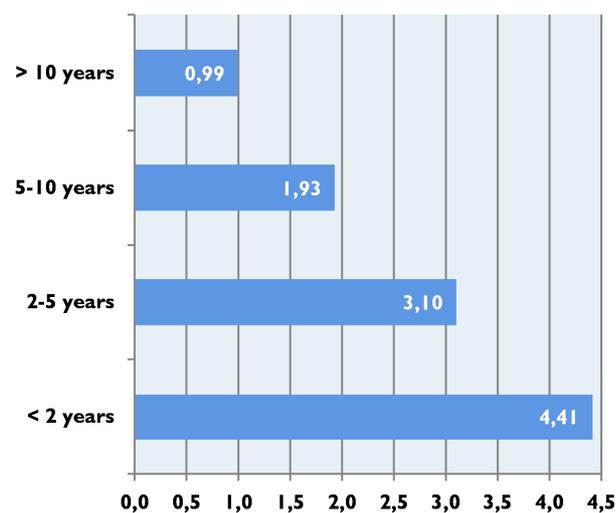
Source: Creditreform Rating

Default risks in Germany also vary from region to region (see Fig. 4). Businesses in the south and the east appear to be particularly resilient. The state of Brandenburg, where the risk situation improved most significantly during the first six months of 2016, now displayed a default rate of 1.34%, which is only marginally higher than that of Bavaria (1.33%). With 1.14%, only the state of Thuringia had an even lower rate in the first half of the

current business year. In contrast, companies in North Rhine-Westphalia and the city-state of Bremen (with default rates of 1.75 and 1.76% respectively) were subject to a significantly above-average default risk (1.54% for the German economy). Only businesses in Berlin came out worse, clocking up a default rate of 2.22%, the highest of all federal states.

Fig. 5: Default rates of companies from different age groups

As per Q2-16, in % of businesses



Source: Creditreform Rating

In addition to the industry and the federal state of the domicile, finally, the age of the business in question also appears to be relevant for the default risk. As a general rule, the insolvency risk decreases in inverse proportion to the number of years that a company has been in business (see Fig. 5). Companies that were established at least 10 years ago have a default rate of 0.99%, while young enterprises (with an age of 2 to 5 years) are three times as likely to go out of business (3.10%). Start-up companies, as one might expect, are subject to the highest default risk. Even in the recent, rather benign economic environment, 441 out of every 10,000 start-up companies went into default (for a rate of 4.41%).

At the same time, young companies (2 to 5 years) were the ones that benefited most strongly from the recent improvements of the business climate. Their default rate fell from 3.21 to 3.10%. Established companies (>10 years) registered smaller improvements. Their rate fell from 1.05% in late 2015 to 0.99%, while the risk for start-ups remained largely stable (4.43% for the first six months of 2016, a decline of 0.02%).

3. Outlook

While our 2015 half-year report's forecast for the annual default rate proved to be spot on (see Default Rates in the German Economy – Half-Year Report for 2015), the actual default rates in the first six months of 2016 have been lower than expected. Our analysis of the German economy's default rates has demonstrated that German businesses have used the period from January to June 2016 to enhance their stability to an extent that we did not foresee at the start of the year. The default rate of 1.54% for the first six months of the year was lower than the rate of 1.58% that we had – more conservatively – predicted for the whole of the business year. We do not expect a serious downturn for the second half of the year.

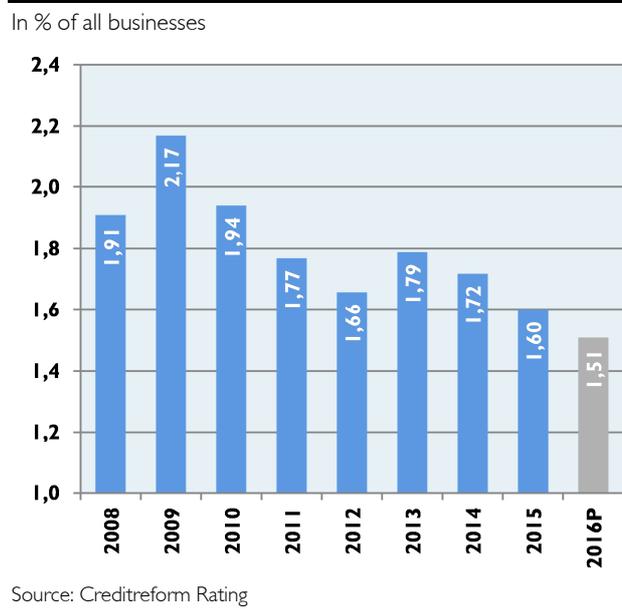
German growth perspectives for 2016 have been only slightly affected by the UK's referendum to leave the European Union ("Brexit") and the overall increase in the level of global economic uncertainties. We expect that the currently prevailing positive trend will continue throughout the business year 2016, despite the relatively large fluctuations of economic growth. We expect, however, that the German GDP will fail to maintain its positive momentum from the first half of the year and that it will grow by 1.5% in real terms year-on-year.

Although macro-economic forecasts are currently subject to specifically high levels of uncertainty and the effects of the Brexit referendum on the real economy are difficult to predict, the existing early signs indicate that the immediate consequences of the UK's decision to leave the EU will be controllable (at least in the short term) and that Brexit will not trigger the global panic that had been feared by many. This assessment is also reflected by the rather stable forecasts of the business climate. Thus, the expectation component of the ifo business climate index has remained largely stable for the past few months and measured 100.1 points in August 2016, still on the positive side (above 100) and roughly unchanged from Q1 2016 (100.2 points). The PMI also appears to indicate that Germany's purchasing managers are, for the time being, calm and relaxed. The manufacturing PMI for August 2016 (53.6) may have slightly fallen from the previous month's level (53.8). However, the PMI roughly remained at the level seen in the previous year (53.3 in August 2015).

The favorable conditions for private consumers (a robust employment market and rises in the disposable household income) are likely to prevail, ensuring that domestic demand will boost growth more strongly than in the first half of the year. The rise in domestic demand should be reflected by a continuously stable development of investment activities. Financing conditions are unlikely to deteriorate, and opportunities to enhance existing capacities may be expected to provide additional incentives for investments activities. The current utilization rate of industrial capacities (84.8% in Q3-16) exceeds the long-term average (84.3% for the period from 1985 to 2015), which makes it likely that investments to enlarge capacities will acquire added urgency. It appears safe to expect that the current year's relatively robust economic growth will have a positive effect on the

development of the default rate and, more generally, on the resilience of businesses in Germany. The empirical default rate of the German economy should therefore follow the recent trend of chasing new all-time lows year after year. For 2016, we currently anticipate a significant decrease of the default rate to 1.51%, equivalent to a year-on-year decline of 0.09 p.p. (see Fig. 6).

Fig. 6: Forecast of the default rate in 2016



Appendix

Data pool and definitions of the individual industries

The Creditreform Business Database contains up-to-date information about corporate finances and levels of financial strength. Each quarter, a dataset is created and archived for all active businesses in Germany. This data pool allows detailed and customized analyses of the developments in selected enterprises and industries. Information about individual businesses that is collected and selectively available in the database includes the following:

- Full business address, federal state (code), county (code) and post code
- Date of establishment, headcount and total sales, legal form, credit information
- Ownership / shareholder structure, size of individual shareholdings and other information about the partners / founders (incl. their number, age and sex)
- Court records of negative characteristics
- Five-digit industry code ("WZ") according to the Classification of Economic Activities, released by the German Federal Statistics Office in 2008.

Based on the aforementioned Classification of Economic Activities of the German Federal Statistics Office, we established industry clusters for the purpose of our comparative analyses (see Fig. 7).

Fig. 7: Classification of industry clusters based on the WZ Code 2008

Industry	WZ 2008
Basic and primary industries	01-09, 19, 23
Business-related services	61-63, 69-74, 77-78, 80-82
Chemical industry	20-22
Construction	41-43
Consumer goods	10-18, 31-32
Consumer-related services	55-56, 79, 86-93, 95-96
Metal / electric goods	24-30
Retail	47
Transport / logistics	49-53
Wholesale	46

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