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››› Concerns about ‘zombie companies’ in the SME sector are unfounded

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Analyses based on the KfW SME Panel reveal for the first time that Germany’s SME sector shows no signs of ‘zombification‘. Relatively few enterprises currently have critical debt sustainability ratios associated with zombie enterprises. Some 167,000 small and medium-sized enterprises (SMEs) were unable to meet their interest obligations from their operating profit in 2016.

That means their profitability is too low and cannot keep pace with high interest payments. Their operating profit cannot even meet half the interest obligations they owe. On average across the overall SME sector, however, earnings are six times higher than interest payments.

As enterprises grow they become more vulnerable. Large SMEs made much more use of the favourable financing environment of past years, so their borrowings and interest obligations have grown. At the same time, however, their returns remain moderate. For this reason, large SMEs often display the critical debt sustainability ratio that is used as an indicator for zombie companies.

But the analysis also shows that SMEs in Germany do not have the investment and productivity weaknesses generally attributed to zombie enterprises. Across the year 2016, the performance of enterprises in this group was roughly similar to the SME sector overall and proportional to their size. Rather, these are financially weak firms, not zombie companies.

It remains to be noted that: 1.) The share of German enterprises with an indicator of a zombie company is currently negligible. 2.) There is nothing to suggest that the problem has increased compared with previous years. 3.) On the basis of our analysis, no impacts on investment and productivity are currently discernible. Concerns about zombie companies in the SME sector are therefore unfounded.

Zombie companies, or the failure of creative destruction

In a competitive market environment, the business landscape undergoes constant change. More efficient production processes and solutions prevail while less productive and less competitive businesses leave the market. To describe this, the Austrian economist Joseph Schumpeter coined the expression ‘creative destruction’[1]. When this mechanism fails to operate fully, the risk arises that uncompetitive or unsustainable enterprises remain in the market.

In this context, there is constant debate regarding so-called zombie companies. In very general terms, this expression refers to enterprises with critical debt sustainability levels that fail to leave the market because they continue to receive capital (see explanatory box). This has consequences for the entire economy. For one thing, the financial weakness can restrict the affected enterprises’ ability to operate. Zombie enterprises are therefore often associated with growth weakness, investment restraint or productivity deficits. For another, zombie companies tie up resources. This hampers necessary structural renewal in the enterprise sector. The consequence is a dampening effect on overall economic growth and productivity gains.

Recent publications by the OECD, the Deutsche Bundesbank and the Bank of America on the topic of zombie companies have received media attention in Germany as well.[2] The loose monetary policy of the European Central Bank (ECB) is often addressed in this context. Critics argue that the enduring low interest rates, which are intended to create incentives for more investment and, hence, growth, also help financially distressed enterprises that should actually declare insolvency to remain in the market. And indeed, the insolvency figures in the German enterprise sector have been on the decline for years, dropping to the lowest level in 2017 since 1994 (20,200 corporate insolvencies in the year 2017).[3]

But how heavily affected is the German enterprise sector – specifically, German SMEs – by zombification? The KfW SME Panel enables us to make representative statements in this regard.[4]

Few SMEs with zombie indicator

The results show that the number of SMEs with critical debt sustainability levels (referred to hereinafter as financial weakness), that is, an indicator of a zombie company, is currently negligible. In 2016, around 167,000 or 5 % of all SMEs exhibited the financial weakness commonly referred to in zombie classification. In these SMEs, interest expenses in 2016 exceeded that year's operating profit (interest coverage ratio of less than one).[5] The share calculated for the SME sector is comparable to the findings for the overall corporate sector in Germany. Thus, the Deutsche Bundesbank, using a similar definition, determined a share of 4.7 % for the year 2015.[6]

Figure 1: Enterprises with zombie indicator by segment

Share of enterprises in per cent; year 2016

	Manufacturing	Construction	Trade	Services	*Total*
Micro enterprises	5	4	4	4	***4***
Small SMEs	5	6	7	5	***6***
Medium-sized SMEs	12	8	10	7	***8***
Large SMEs	9	7	6	12	***10***
Total	***7***	***4***	***5***	***5***	***5***

Note: Calculations based on the definition presented in the box and not counting enterprises of the remaining sectors. Size classes by number of full-time equivalent employees: micro enterprises (fewer than 5), small SMEs (5 to 9), medium-sized SMEs (10 to 49), large SMEs (50 and more).

Source: KfW SME Panel 2017.

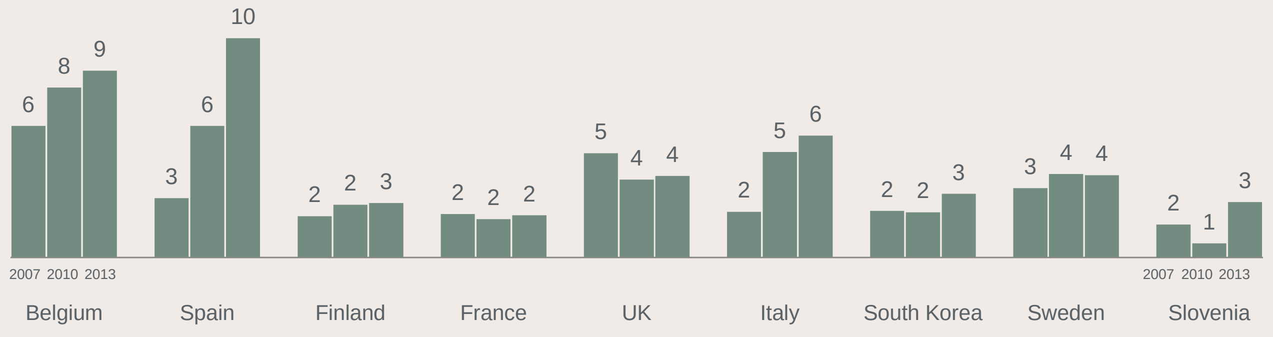
Nor can any clues be found for the German SME sector overall to sustain the argument recently put forward that the ECB's low-interest policy contributed to the growth of zombie companies. The share of businesses with a zombie indicator across the overall SME sector was 5 % in 2015 and 6 % in 2014.

Zombie companies: origin of the term, empirical identification and prevalence

The term zombie company was coined during the Japanese economic crisis at the beginning of the 1990s. Japanese banks kept distressed enterprises alive by granting (supportive) loans on an ongoing basis and with rather lenient terms. This was caused by misguided incentives that led to banks continuing to grant loans even to customers who were at risk of default (for example through follow-on financing) instead of accepting write-downs and losses. This prevented the restructuring of the enterprise sector, discouraged affected businesses from becoming more efficient and renewing their operations and resulted in a significant drop in productivity growth.

A common measure for operationalising zombie companies is the ratio between their interest obligations and their income from operational activity. The KfW SME Panel captures the latter as operating profit, that is, earnings before interest, taxes and depreciation (EBIT). If the quotient between operating profit and interest expenses (interest coverage ratio (ICR)) is less than 1, an enterprise is classified as a zombie company. Such an enterprise can no longer meet its interest expenses from its operating result. The classification also presupposes a minimum enterprise age of ten years. This is necessary to prevent falsely classifying young fast-growing enterprises whose profits are still low as zombie companies.[i]

In the largest empirical analysis to date, the OECD recently analysed the prevalence of zombie companies in an international comparison (see figure below, shares in per cent) and revealed their responsibility for low productivity gains in particular. It also assumed that the weak corporate investment levels of the post-crisis years are also an expression of growing zombification.



Sources: Caballero et al. (2008), Zombie Lending and Depressed Restructuring in Japan, American Economic Review, 98. Peek, J. and Rosengren, E. (2005), Unnatural Selection: Perverse Incentives and the Misallocation, American Economic Review, 95. Hoshi, T. (2006), Economics of the Living Dead, The Japanese Economic Review, 57. McGowan, M. A. et al. (2017), The walking dead? Zombie firms and productivity performance in OECD countries, OECD, Economics Department Working papers No. 1372, Paris. Okamura, K (2011), Zombie' Banks Make 'Zombie' Firms, https://ssrn.com/abstract=1786496.

As enterprises grow, they become more vulnerable

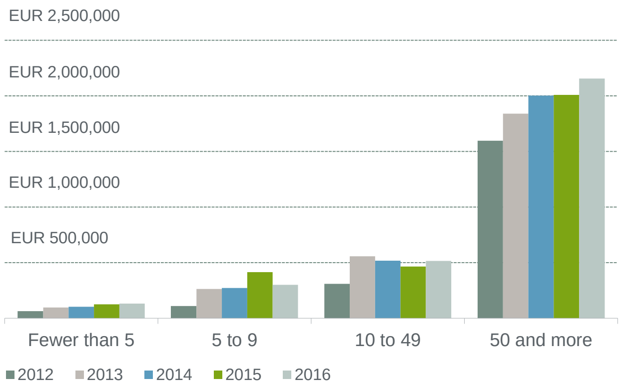
But our analyses also demonstrate that large SMEs are more often among the financially weak enterprises. While only 4 % of micro businesses meet this criterion, one large SME in ten fits the description (Figure 1). Thus, within the group of enterprises that present a zombie indicator, larger SMEs are significantly more common than in the SME sector overall. While only 2 % of all SMEs have 50 or more employees, in this group of enterprises it is 7 %.

One of the reasons for this is that large SMEs have borrowed more in recent years (Figure 2). This enterprise segment in particular made use of the recently favourable financing environment and applied for large loan volumes more often than SMEs of other size classes. As a consequence, the average ticket size has grown significantly. Plausibly, the share of bank loans in investment funding by large SMEs increased from formerly 21 % in the year 2012 to 28 % in the year 2016.[7] This caused interest obligations to grow during that period, even if loan interest rates were on a low level.

A breakdown by turnover size classes also confirms a clear size correlation (not graphically illustrated here): Financially weak enterprises are significantly less common among SMEs with an annual turnover of up to EUR 500,000 and in the size category of EUR 500,000 to EUR 1 million (4 and 3 %) than in the turnover size class above EUR 1 million. In this size class, 11 % of all enterprises fall into this segment. Manufacturing enterprises are also affected more than average (7 %). Possible zombification appears to be less of a problem in the construction industry in particular.

Figure 2: Average credit demand

Size classes by number of full-time equivalent employees



Source: KfW SME Panel 2013–2017

Enterprises with zombie indicator: Disproportionately high interest burden due to attractive financing environment

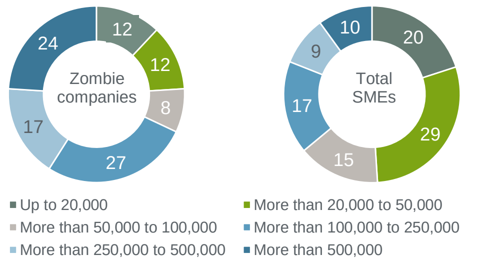
Cumulative interest expenses of financially weak enterprises amounted to EUR 6.1 billion in the year 2016. With a value of EUR 37.3 billion for the entire SME sector, their share is thus a disproportionately high 16 % – more than three times their share in the number of enterprises (5 %).

The reason for this is credit demand, which is also above average in the group of enterprises with zombie indicators and represents a share of 9 % of total credit demand. At 68 %, the share of larger loan volumes from EUR 100,000 is even much higher than the share for the entire SME sector, which is 36 % (Figure 3). In 2016, these enterprises' average credit demand was EUR 1.6 million, as opposed to EUR 301,000 for the entire SME sector.

Accordingly, financially weak enterprises have a significantly higher debt ratio and, conversely, a lower equity ratio than other enterprises (25 vs. 30 % in the entire SME sector).

Figure 3: High credit demand by SMEs with zombie indicator

Per cent of SMEs with corresponding credit demand; year 2016



Source: KfW SME Panel 2017.

High shares of debt capital and interest expenses per se are not problematic, however, and may have a number of 'healthy' causes (such as intense investment activity to secure competitiveness). Higher credit demand may also be driven by prospects of an interest rate reversal. The likelihood of rising borrowing costs may motivate enterprises to make use of the currently favourable interest rates.

Investment and productivity in the normal range

The problem with zombie companies is not just their individual financial weakness but, rather, the consequences they may have for the overall economy. When the affected enterprises exhibit a reduced drive to modernise and become more efficient, this may lead to a significant decline in aggregate productivity growth.

One major finding of our study is, therefore, that SMEs in Germany do not have the investment and productivity weaknesses generally attributed to zombie companies. Across the year 2016, enterprises in this group performed at roughly similar levels as the overall SME sector and in proportion to their size. The share of investors averaged 40 % (42 % in the overall SME sector). The investment volume was EUR 14 billion, representing 7 % of SMEs' total investment volume.

Average labour productivity in this group of enterprises (measured as turnover per full-time equivalent employee) was around EUR 164,000 in 2016. This value was even significantly above the average of EUR 127,000 for all SMEs but is 'distorted' upward by the relatively high share of larger SMEs in the group of financially weak enterprises. Larger enterprises are intrinsically more productive.[8]

Distinctly weak profitability

But these positive findings on financially weak SMEs should not obscure the fact that they are in a critical situation. The earnings situation of enterprises with a zombie indicator cannot keep pace with their interest obligations. Their average interest coverage ratio is a low 0.46. That means these enterprises' annual profit on average is insufficient to cover even half their interest expenses. For comparison: At 5.8, the corresponding value for the entire SME sector is around 13 times higher (mean: 4.3).[9]

The profitability of these enterprises is simply too low. While the average profit margin[10] of the entire SME sector is a healthy 7.3 %, financially weak enterprises have a mere 2.1 % on average.[11] But a high and stable profit margin is a key assessment criterion for lending decisions and, ultimately, lending terms. It can be assumed that banks charge these SMEs interest premiums.

Conclusion: hardly a zombie problem, also because SMEs want to be financially independent

According to our analyses, there is no sign of any specific zombie problem in the German SME sector. Rather, nearly 95 % of all SMEs can be deemed to have sufficient debt sustainability. Moreover, there is nothing to suggest that the share of financially weak enterprises may recently have grown in the ongoing low-interest environment.

Despite their financial weakness, these enterprises show no signs of weakened investment activity or productivity deficits. Given the low number of affected SMEs, it is rather questionable that they would have a dampening effect on aggregate economic growth. The arguments of some critics of current monetary policy can therefore not be confirmed for German SMEs. What is unclear, however, is how a future interest rate rise will affect these enterprises' debt sustainability.

The overall SME sector is generally in good shape. One reason for this is that German SMEs have significantly increased their equity base in the past 15 years. They were able to create a financial buffer by retaining earnings, thereby raising their average equity ratio to a comfortable 30 % in 2016. At the same time, SMEs' debt ratio has decreased. Today many small and medium-sized enterprises attach great importance to their financial independence.[12] The desire to avoid debt is often the main motive for SMEs to refrain from negotiating loans.[13] In this way they want to become more crisis-resilient and be better prepared for a more difficult financing environment. ■

Database: The KfW SME Panel

The KfW SME Panel (KfW-Mittelstandspanel) has been conducted since 2003 as a postal tracking survey of small and medium-sized enterprises in Germany. The parent population of the KfW SME Panel includes all private-sector companies from all industries with annual turnovers of up to EUR 500 million.

With data based on up to 15,000 companies a year, the KfW SME Panel is the only representative survey of the German SME sector, making it the most important source of data on issues relevant to the SME sector. The main survey of the 15th wave was conducted in the period from 13 February 2017 to 23 June 2017.

Further information and the current annual report can be obtained at: **KfW SME Panel**.

[1] Schumpeter, J. A.: Capitalism, socialism and democracy. Harper, New York / London 1942; 3rd edition ibidem 1950

[2] See McGowan, M. A. et al. (2017), The walking dead? Zombie firms and productivity performance in OECD countries, OECD, Economics Department Working papers No. 1372, Paris. – Deutsche Bundesbank (2017), German enterprises' profitability and financing in 2016), Monthly Report December 2017, p. 37–40. In addition, a study by the Bank of America as received media attention: https://www.bloomberg.com/news/articles/2017-07-24/zombie-companies-littering-europe-may-tie-ecb-s-hands-for-years (retrieved on 22 August 2017).

[3] Creditreform (2017). Insolvenzen in Deutschland – Jahr 2017 (*Insolvencies in Germany – year 2017*, in German only)

[4] For the current edition of the KfW SME Panel, see Schwartz, M. (2017): **KfW SME Panel 2017**: Germany's domestic economy continues to break records– sectoral transformation poses new challenges, KfW Research.

[5] The three-year period for offsetting an enterprise's income fluctuations otherwise used in comparable analyses on the topic cannot be applied here.

[6] Deutsche Bundesbank (2017), German enterprises' profitability and financing in 2016, Monthly Report December 2017, p. 37–40.

[7] Cf. Schwartz, M. (2017): KfW SME Panel 2017: Germany's domestic economy continues to break records– sectoral transformation poses new challenges, KfW Research, p. 17.

[8] On average for the years 2003–2016, enterprises with 10 to 49 employees achieved a productivity level of EUR 149,000 per FTE employee, while enterprises with 50 employees and more achieved an average of EUR 172,000 per FTE employee.

[9] The calculation of the mean ICR was adjusted for extremes in order to prevent distortions. Companies with an ICR greater than 20 were not included in the calculation. These are enterprises that have made marginal interest payments but in part generate high profits.

[10] Profit margin is defined as the ratio of pre-tax profit to turnover. The figure shows the mean values of profit margin per segment weighted against turnover.

[11] The KfW SME Panel shows that large SMEs in particular (50 or more employees) had to accept lower returns for the second consecutive year (2016: 4.4 %) despite strong turnover growth. This aspect may be discernible here.

[12] Gerstenberger, J. (2018). Hohe Eigenkapitalquoten im Mittelstand: KMU schätzen ihre Unabhängigkeit (*High equity ratios: SMEs value their independence* – in German only), Focus on Economics No. 206, KfW Research.

[13] Gerstenberger, J. (2018). Kreditverhandlungen – Warum so viele KMU darauf verzichten (*Loan negotiations – why so many SMEs forego them*– in German only), Focus on Economics No. 207, KfW Research.