

»» Access to credit varies considerably depending on the purpose

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The financing climate today is good. Still, credit is not equally accessible for all enterprises and for all funding needs. Factors that play a role include the size and age of the enterprise, and the type of project.

Credit is most easily accessible for investments in plant and machinery, real estate, takeovers and participations. Obtaining a loan is significantly more difficult for digitisation and projects outside Germany. Digitisation is regarded as the key driver of innovation and future competitiveness. Difficulties in accessing credit therefore threaten to become a limiting factor in securing the sustainability of enterprises when funding needs for digitisation increase in the future.

Obtaining loans to finance inventories, working capital and intangible assets such as patents or trademark rights is even more difficult. What is crucial to accessing credit is that the project to be financed must generate assets that can be used as collateral for loans. A trend away from investment in fixed assets towards intangible assets can therefore make it harder for enterprises to access credit in the long term.

The increased self-funding capacity of German enterprises and their moderate financing needs have somewhat reduced their dependence on bank loans. In addition, the healthy cyclical development and credit institutions' intense competition for corporate clients are helping to create an attractive financing environment. Financing conditions for enterprises have thus improved continuously over the past years and are more favourable than ever.¹ Nevertheless, the financing situation is not the same for all enterprises and financing purposes. Various surveys show that small and young enterprises, for example, are affected by financing difficulties significantly more often than large or older enterprises.

Below we examine how credit access differs by type of financing purpose with the aid of a multivariate analysis (see box at the end of the paper). Our database is the 15th Business Survey that was conducted by KfW in cooperation with 21 professional and regional business associations. It distinguishes between eight different types of projects.

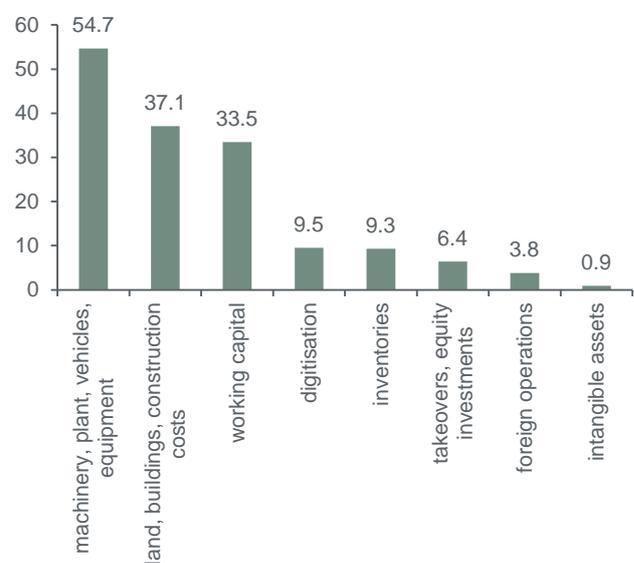
Borrowing demand by type of project

Enterprises applied most often for investment loans to finance machinery, plant, vehicles and equipment, at nearly 55% (Figure 1). Real estate loans (land, buildings and construction costs) and working capital loans were close

behind in second and third place, at 37% and nearly 34%, respectively. Loans for digitisation projects followed at a considerable distance with close to 10%. These include acquisition of hardware and software, the use of cloud services, digital networking within and outside the enterprise, and organisational measures necessary for digitisation (including reorganisation of operational procedures, staff training and use of IT consultancy).²

Figure 1: SMEs with loan negotiations by type of project

Shares in per cent



Source: Business Survey 2016, own calculations

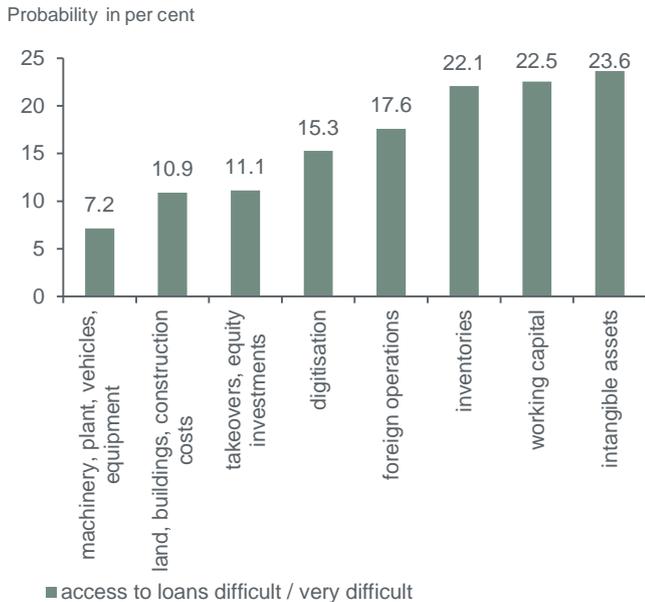
Almost the same proportion of enterprises, 9%, requested financing for inventories. Borrowing demand for takeovers and equity investments, foreign operations and financing of intangible assets such as patents and trademark rights was the lowest, with proportions ranging from 6% to less than 1%. Most likely, this is due to the fact that such projects are relatively rare among small and medium-sized enterprises, which represent the bulk of businesses in Germany.

Loans for physical investments are easiest to access

The survey revealed that credit is most easily accessible for investment in machinery and fixed assets, real estate, takeovers and participations (Figure 2). The probability that a typical surveyed enterprise considers it difficult or very difficult to obtain a loan for these projects is the lowest, with values ranging from 7.2 to 11.1%.³ This is probably due to the relative ease with which external lenders are able to assess the success probabilities of such investments.

Besides, such projects usually generate material assets that can be taken as collateral for the loan provided and realised relatively easily in the event of default.⁴

Figure 2: Difficulty of accessing credit by type of project



Guide: For enterprises that have negotiated loans for the acquisition of machinery, fixed assets etc., the likelihood of an enterprise typical of the sample reporting difficulty or great difficulty in accessing credit is 7.2%.

Source: Business Survey 2016, own calculations

Major factors that determine lending decisions, in addition to the applicant enterprise's credit rating,⁵ include the chances of success of the planned project and the enterprise's ability to provide valuable collateral. One thing that underscores the high importance of collateral for the lending decision is the fact that some 80% of the enterprises participating in the Business Survey attributed the increased difficulty in obtaining loans to tougher collateral requirements.⁶

In addition, for years enterprises have consistently referred to the lack of collateral as the main reason for a denial of an investment loan. By contrast, the probability that an enterprise reported an excessively low equity ratio as the reason for not obtaining a loan from a bank or savings bank has been decreasing for years. It is now only around half as high as for collateral.⁷ This is likely due to the significant increases in equity ratios in the past years.

The relative ease of obtaining investment loans for machinery, fixed assets and other purposes (7.2% likelihood of difficulty accessing credit) is probably due to another factor. The investment sum compared with the size of the enterprise is usually more moderate than is often the case for real estate loans and takeovers/equity investments. Therefore, the danger that the project volume may pose a financial risk to the survival of the enterprise itself is likely to be generally lower.

Loans are less accessible for digitisation projects

The likelihood of an enterprise describing access to loans for digitisation projects as difficult or very difficult is 15.3%. It is thus a good two fifths higher than for real estate loans and more than twice as high as for investments in machinery and fixed assets or similar expenditure. The likely reasons are that digitisation projects are often innovative in nature and in many cases are directed at enterprise-specific applications and problem solutions. Furthermore, material investments only make up around half of digitisation expenditure. Rather, a large portion of the investment is in expertise. This makes it difficult for external providers of funding to assess the chances of success. The low share of material investments also restricts the availability of collateral from the project.⁸ As a result, loans are often denied or granted only against an "uncertainty premium".

The likelihood of enterprises rating their access to credit for foreign operations negatively is only slightly higher, at 17.6%. Foreign operations can mean a great variety of very different projects. In order to assess them, external lenders must have expertise pertaining to the respective foreign markets. Realising assets abroad often involves greater effort as well. Both these factors reduce external lenders' willingness to finance such projects.

Loans are most difficult to obtain for inventories, working capital and intangible assets

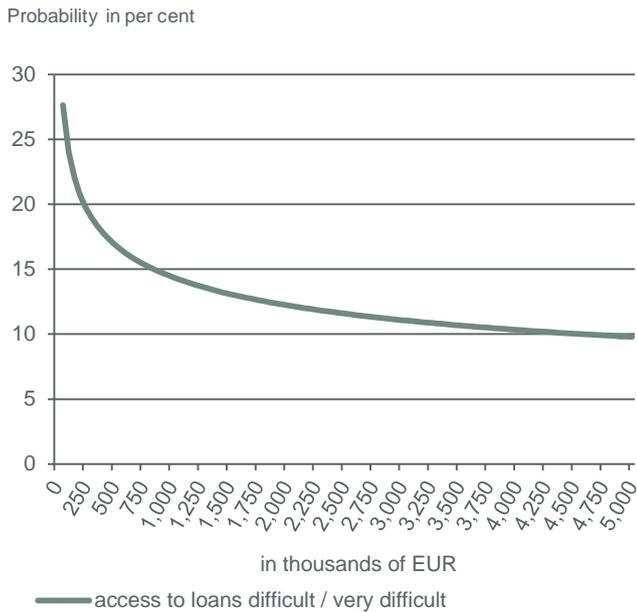
With values of 22.1 to 23.6%, enterprises considered loans for financing inventories, working capital and intangible assets the most difficult to access.⁹ Especially in the case of inventories and working capital, it is probably particularly hard to realise collateral in the event of default. Providing collateral from the project to be financed is therefore likely to be a major difficulty, just as it is for the financing of intangible assets such as patents, trademark rights or similar purposes. Assessing intangible assets poses a considerable challenge for external lenders. Besides, very few markets exist for trade in intellectual property, so it is uncertain whether patents and trademarks can be sold in the event of default.¹⁰

Access to credit is heavily influenced by enterprise size and age

Both enterprise size and enterprise age are key factors for credit access, as the multivariate analysis confirms again very clearly. The smaller an enterprise is, the more structural problems it has in obtaining a loan (Figure 3).

The analysis also confirms the known differences in credit access between young and old enterprises. Young enterprises report difficulties in obtaining debt finance significantly more often (Figure 4).

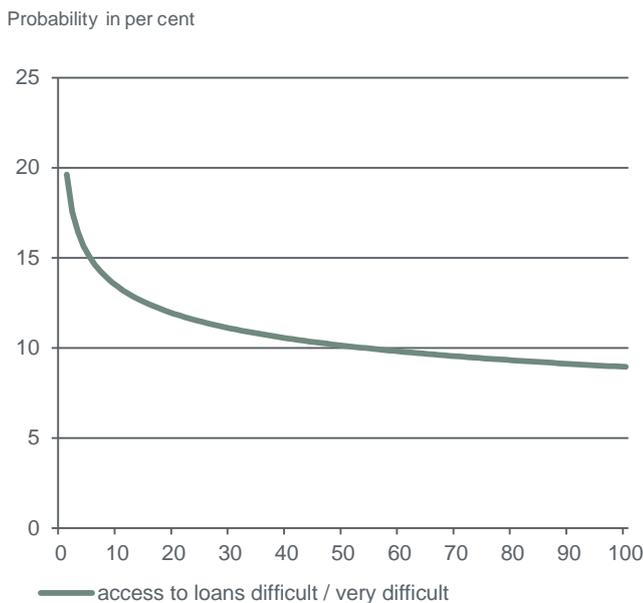
Figure 3: Difficulty of accessing credit by size of enterprise (annual turnover)



Guide: For an enterprise with an annual turnover of EUR 3.2 million (median) that has negotiated loans for the acquisition of real estate, the likelihood of an enterprise typical of the sample reporting difficulty or great difficulty in accessing credit is 10.9%. That likelihood rises to 19.7% for an enterprise with an annual turnover of EUR 250,000 (10% quantile) that otherwise has the same profile.

Source: Business Survey 2016, own calculations

Figure 4: Difficulty of accessing credit by age of enterprise



Guide: For an enterprise that is 33 years old (median) and has negotiated loans for the acquisition of real estate, the likelihood of an enterprise typical of the sample reporting difficulty or great difficulty in accessing credit is 10.9%. That likelihood rises to 14.3% for a seven-year-old enterprise (10% quantile) that otherwise has the same profile.

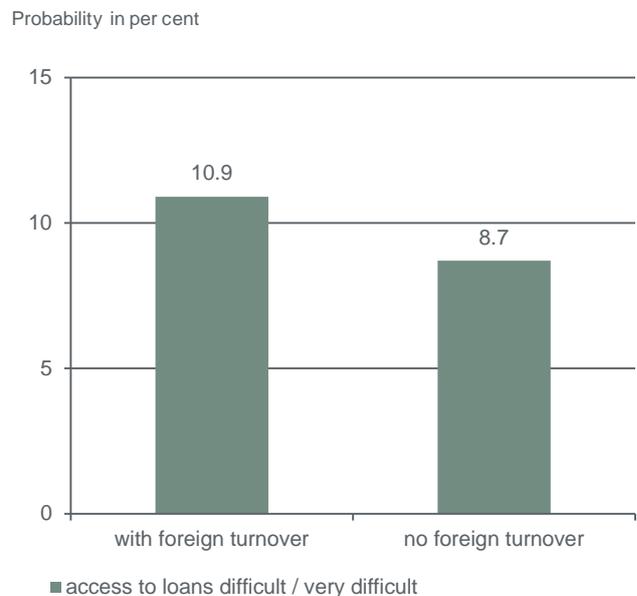
Source: Business Survey 2016, own calculations

Box: Comparison of impact of type of project and enterprise size and age

In order to demonstrate the degree of influence of the type of project, below we compare its influence with that of enterprise size and enterprise age. This comparison illustrates how strong the impact of the type of project is. The difference in the likelihood of rating credit access difficult or very difficult between a loan for real estate and one for digitisation is 4.4 percentage points (for a typical enterprise). That is exactly the difference between an enterprise applying for a real estate loan with an annual turnover of EUR 750,000 and one that is four times as big (with an annual turnover of EUR 3.2 million) (Figure 3). It also matches the difference between a five-year-old enterprise and one that is seven times as old (Figure 4).

The quality of an enterprise also plays a role in credit access. The indicator employed to measure it was an enterprise's foreign sales, an expression of high productivity and competitiveness that enables it to durably operate on contested international markets.¹¹ This is also reflected in credit access. The likelihood of describing credit access as difficult or very difficult is 8.7%, or one fifth lower when the reference enterprise generates foreign sales (Figure 5).¹² When taking into account the financing purpose, the enterprise's size, age and foreign sales, no major differences – and no significant differences in a statistical sense – can be identified for the remaining features such as economic sector, affiliation with the craft sector, legal status and region of registered office.¹³

Figure 5: Difficulty of accessing credit with and without foreign turnover



Guide: For an enterprise that does not generate any turnover abroad and has negotiated loans for the acquisition of real estate, the likelihood of an enterprise typical of the sample reporting difficulty or great difficulty in accessing credit is 10.9%. That likelihood is 8.7% for an enterprise that generates foreign turnover but otherwise has the same profile.

Source: Business Survey 2016, own calculations

Conclusion

This paper explores enterprises' assessment of their access to credit. Besides the frequently examined factors of enterprise size and age, we have been able to establish above all what role an enterprise's planned project plays in credit access.

The key finding is that enterprises rate their access to credit very differently depending on the types of projects for which they apply for a loan. Enterprises planning an investment project reported difficulties in accessing credit the least often. Enterprises that negotiated loans for digitisation projects and foreign operations rated their access to credit difficult or very difficult much more often. Difficulties in accessing credit for digitisation projects are particularly worrying. Digitisation is currently regarded as a key factor for realising innovation and preserving the competitiveness of the German business sector. When enterprises' funding needs increase as they ride the coming digitisation wave, credit constraints threaten to delay or thwart necessary digitisation measures.

Enterprises requiring finance for inventories, working capital and intangible assets have even more difficulty accessing credit. External lenders find it hard to assess the prospects of success of such projects. This is also an area where the high importance of collateral for lending becomes particularly visible. Increased problems in accessing credit are most clearly apparent where projects that require finance do not generate valuable collateral that would be suitable to secure loans.

In the long term, therefore, debt financing threatens to become increasingly more difficult. This will likely be the case when funding requirements continue to move away from physical investments – as expected and demanded under the catchword “knowledge society”¹⁴ – towards higher

investments in intangible assets such as formal education, expertise, innovation, research and development. ■

Box: Methodology

We explored the degree of difficulty in accessing loans described by an enterprise depending on the type of project to be funded. Enterprises were asked to indicate how difficult it was for them to obtain credit on a scale of 1= “very easy” to 6= “very difficult”. The analysis captured only enterprises that conducted loan negotiations.

In order to isolate the influence of the financing purpose on credit access, the following additional characteristics were taken into account in the regression: turnover size, enterprise age (both logarithmised), whether the enterprise had foreign sales, the economic sector to which it belongs (manufacturing, construction, retail, wholesale/foreign trade, services, other), whether it belongs to the craft sector, legal status (limited vs. unlimited liability) and the region of the enterprise's registered office (eastern German vs. Western German states). The analysis can capture nearly 1,000 enterprises.

The analysis was conducted with the aid of an ordered probit model (table in annex). The regression results are illustrated using model calculations. The influence of the project on the enterprise's assessment of its access to credit can be described by varying the type of project in the model calculations while keeping all other enterprise characteristics constant. Thus, an enterprise assesses its access to credit as “difficult” or “very difficult” when it assigns it to category 5 or 6, respectively.

Table: Regression results of ordered logit model on the difficulty of accessing credit

	Coefficient	t-value
Type of project (reference category: land, buildings, construction costs)		
Plant and machinery, vehicles and equipment	-0.46301	-3.51
Equity investments, takeovers	0.02132	0.07
Inventories	0.83995	3.59
Digitisation	0.38827	2.08
Working capital	0.86585	6.57
Intangible assets	0.92810	1.89
Foreign operations	0.55705	1.71
Other projects	0.75699	3.79
Turnover size log(turnover)	-0.27341	-7.20
Company age log(age)	-0.19773	-3.06
Economic sector (reference category: manufacturing)		
construction	0.11276	0.63
Retail trade	0.15987	0.55
Wholesale and import/export	-0.15221	-0.64
Services	-0.17313	-0.88
Other	-0.69133	-0.69
Crafts affiliation (reference category: no crafts)		
Crafts	-0.10895	-0.62
Region of company's registered office (reference category: western Germany)		
eastern Germany	0.24545	1.45
Legal status (reference category: unlimited liability)		
Limited liability	0.15212	1.23
Region of sales market (reference category: domestic sales only)		
With sales outside Germany as well	-0.27210	-1.64
/cut1	-6.22542	
/cut2	-4.37022	
/cut3	-3.33334	
/cut4	-2.68727	
/cut5	-2.05407	
Number of observations	979	
Log likelihood	-1,455.68	
R2	0.0842	

Source: own calculations.

¹ Cf. Zimmermann, V. (2016): Business Survey 2016: Financing climate better than ever – financing purpose is major determinant of credit access, KfW Research and ifo-Institute for Economic Research, (ed.) (2016): the Credit Constraint Indicator. Results of the cyclical test in August 2016.

² The borrowing demand for digitisation projects established by the Business Survey is thus consistent with values found by other surveys. Cf. for example Saam, M., Viète, S. and Schiel, S. (2016): Digitalisierung im Mittelstand: Status Quo, aktuelle Entwicklungen und Herausforderungen (*'Digitisation in SMEs: status quo, current trends and challenges'* – our title translation, in German). Research project on behalf of KfW Group. Centre for European Economic Research (ZEW), Mannheim. It must be considered, however, that the definitions in the two surveys and the specific questions asked are not completely identical.

³ This “typical” reference enterprise has the following profile: it is 33 years old and generates an annual turnover of EUR 3.2 million. Both values are the median values in the sample. Furthermore, it is a manufacturing enterprise, domiciled in western Germany and, according to its legal status, does not have limited liability. It operates exclusively on the domestic market and not in the crafts sector.

⁴ It is established lending practice to secure loans primarily via land charges, but also by assigning machinery, vehicles etc. as collateral. Cf. Zimmermann, V. (2007): Kreditsicherheiten – Wahrnehmung der Anforderungen und eingesetzte Instrumente (*Loan collateral – meeting the requirements and instruments employed* – our title translation, in German). KfW Economic Research. Economic Observer online No. 29, November 2007.

⁵ Cf. Gerstenberger, J. and Zimmermann, V. (2016), Unternehmensbonität – eine nicht zu vernachlässigende Größe (*'A company's credit rating – a factor not to be neglected'* – our title translation, in German), KfW Research.

⁶ Cf. Zimmermann, V. (2016): Business Survey 2016: Financing climate better than ever – financing purpose is major determinant of credit access. KfW Research.

⁷ Cf. Zimmermann, V. (2014): Business Survey 2014: Financially strong, energy-conscious, location-sensitive. KfW Economic Research.

⁸ Cf. for example Saam, M., Viète, S. and Schiel, S. (2016): Digitalisierung im Mittelstand: Status Quo, aktuelle Entwicklungen und Herausforderungen (*'Digitisation in SMEs: status quo, current trends and challenges'* – our title translation, in German). Research project on behalf of KfW Group. Centre for European Economic Research (ZEW), Mannheim.

⁹ For example, an additionally conducted Chi2 test to determine if the underlying regression coefficients for digitisation projects and acquisition of inventories are identical rejects the null hypothesis ($\text{Chi}^2(1)=3.89$; $p\text{-value}=0.0486$).

¹⁰ Cf. Zimmermann, V. (2007): Immaterielle Vermögenswerte als Sicherheiten bei der Kreditvergabe (*'Intangible assets as loan collateral'* – our title translation, in German), KfW-Research. Mittelstands- und Strukturpolitik 39, p.80–118 and Bittelmeyer, C.; Ehrhardt, N.; Mark, K. and Zimmermann, V. (2008). Immaterielle Vermögenswerte als Kreditsicherheiten – Ein Potenzial für die Kreditfinanzierung in Deutschland? (*'Intangible assets as loan collateral – a potential for loan financing in Germany?'* – our title translation, in German), in: Keuper, F.; Vocelka, A. and M. Häfner (ed.), Die moderne Finanzfunktion. Strategien, Organisation und Prozesse, Gabler, Wiesbaden, p. 249–277.

¹¹ Cf. Wagner, J. (2007): Exports and productivity: A survey of the evidence from firm-level data. *World Economy* 30, p. 60-82; Greenaway, D. and Kneller, R. (2007): Firm heterogeneity, exporting and foreign direct investment. *Economic Journal* 117, p. F134–F161 or Eliasson, K.; Hansson, P. and Lindvert, M. (2012): Do firms learn by exporting or learn to export? Evidence from small and medium-sized enterprises. *Small Business Economics* 39, p. 453–472.

¹² With a t-value of -1.64, the corresponding regression coefficient misses the usual 10% significance level by an extremely narrow margin.

¹³ The survey did not consider the loan amounts involved in the loan negotiations.

¹⁴ Arnold, N. (2012): Was bedeutet „Wissensgesellschaft“? Argumente und Analysen (*'What does "knowledge society" mean? Arguments and analyses'* - our title translation, in German), issue 112, November 2012. Konrad Adenauer Foundation.