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Success factors of high-growth enterprises

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Google, Facebook and Co. are leading the way. Fast-growing enterprises are very important in economic policy debate because they stand for growth and employment creation.

Research conducted on the basis of the KfW SME Panel shows that measurable characteristics distinguish growth enterprises from the rest of the business landscape. Employment of graduates, early orientation to international markets and an innovation strategy based on research and development (R&D) can be identified as success factors. It is also evident that high-growth enterprises are often young and (still) small. The path which growth enterprises take involves great effort, as is impressively underscored by their often rather weak credit rating.

Growth enterprises therefore need support to realise their full potential. Among the conditions they need in order to flourish are open markets, an adequate supply of skilled workers, and lower barriers to innovation. Not least, their path to growth must be facilitated through the provision of adequate funding.

Since the study by Birch (1979)[1], fast-growing enterprises have been among the perennial issues of economic policy debate. That is because they raise hopes of (economic) growth and employment creation. So far, however, there is no generally accepted definition of growth enterprises.[2] Common to all relevant studies, however, is that the enterprises they analyse represent a small group. The current debate is being conducted under the catchword 'scaling up' and focusing on young growth enterprises.

In the following we examine the features that distinguish fast-growing enterprises in Germany with the aid of a multivariate analysis based on the KfW SME Panel. We classify an enterprise as fast-growing when the number of employees (measured in full-time equivalents) grows by at least 50 % within a two-year period. The group of fast-growing enterprises thus defined comprises 2.7 % of the enterprises included in the analysis (box: dataset and methodology).

Factors influencing business growth

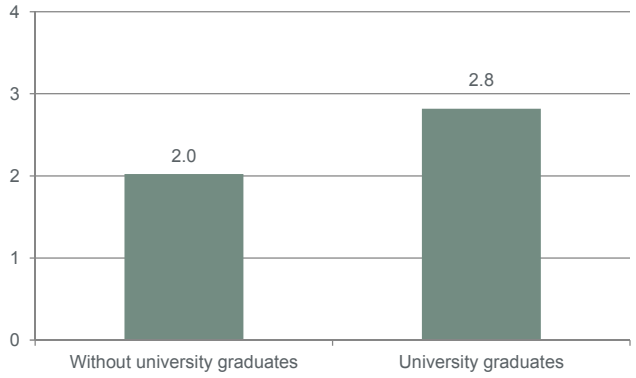
A comprehensive theoretical approach to explain the growth of enterprises does not yet exist. Various common hypotheses must therefore be explored and examined for their relevance. The growth of an enterprise is generally deemed an expression of successful action enabling it to achieve competitive advantages over its competitors.

Human capital as a success factor

The workforce, or human capital, is among an enterprise's most important resources. It is deemed a key success factor for achieving competitive advantages.[3] Accordingly, high-growth enterprises include significantly more enterprises with graduates than without. Their likelihood of being a high-growth enterprise increases by two fifths compared with enterprises with no graduates (Figure 1). Past studies based on the KfW SME Panel also confirm the positive influence of employing graduates on business growth, which is even greater in the segment of slow-growth and contracting enterprises than in high-growth enterprises.[4]

Figure 1: Correlation between employing graduates and the likelihood of being a high-growth enterprise

Probability in per cent



Source: KfW SME Panel, own calculations based on the table.

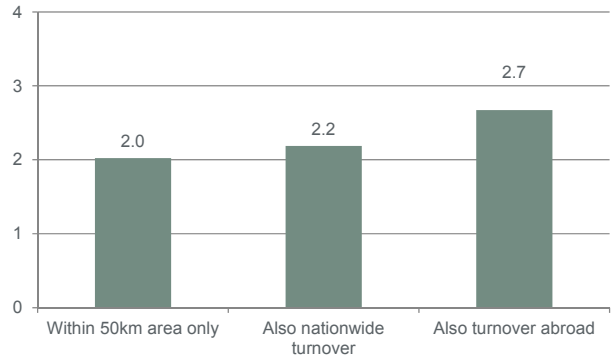
In SMEs the entrepreneurs themselves also play a key role in all business processes and decisions.[5] Consequently, in the SME sector in particular, entrepreneurs' qualifications should also be crucial to business success. However, an effect of the entrepreneur's qualifications on the likelihood of their enterprise evolving into a high-growth one cannot be determined.

Internationalisation brings growth

International operations can have various advantages for enterprises.[6] Tapping into foreign markets increases demand for their products and services and the resulting larger market enables them to realise economies of scale. They can also source from other countries production factors that are scarce or relatively expensive, such as labour and capital, but also commodities and advance deliveries. Not least, international operations facilitate the integration into their own business of technologies newly developed abroad and knowledge not yet widespread on the domestic market (spill-overs). The literature highlights the learning effects gained from exports or their preparation.[7]

Figure 2: Correlation between size of sales market and likelihood of being a high-growth enterprise

Probability in per cent



Source: KfW SME Panel, own calculations based on the table.

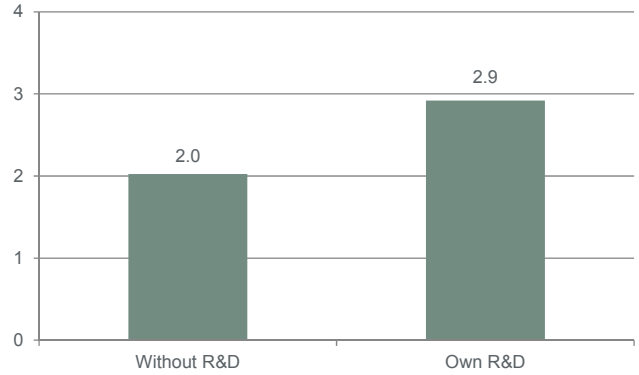
In fact, the likelihood of belonging to the group of fast-growing enterprises rises by a good one third in enterprises with international sales compared with those that have only regional sales (Figure 2). The differences between businesses that target regional markets and those that operate on the German market, in turn, are negligible (and not statistically significant either). This indicates that contact with international markets is indeed crucial to growth.

R&D-based innovation strategy as a driver of growth

Numerous studies have already confirmed the positive influence of innovation activity on business performance, particularly on business growth.[8] The present analysis revealed that enterprises with R&D activities are 45 % more likely to belong to the group of high-growth enterprises than those without R&D activities of their own (Figure 3). It did not measure a positive effect for bringing forth innovations (without R&D), however. This finding underscores that individual innovations do not make a fast-growing enterprise. For that to occur, an enterprise rather needs a firmly implemented innovation strategy supported by systematic R&D efforts of its own.[9]

Figure 3: Correlation between research and development (R&D) and the likelihood of being a high-growth enterprise

Probability in per cent



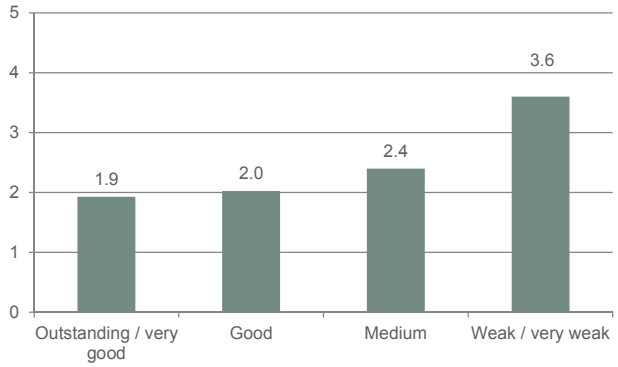
Source: KfW SME Panel, own calculations based on the table.

A distinctive growth strategy is coupled with (temporary) downgrades of credit rating

An enterprise's credit rating is often used not just as an indicator of financial strength but also of overall business quality.[10] At first glance, it is therefore surprising that fast-growing enterprises often have a low credit rating (Figure 4). While the likelihood of being a fast-growing enterprise differs only minimally between enterprises with an outstanding or medium credit rating, this likelihood is much higher for enterprises with a weak or very weak credit rating (+89 % compared with enterprises that have an excellent or very good credit rating).

Figure 4: Correlation between credit rating and the likelihood of being a high-growth enterprise

Probability in per cent



Source: KfW SME Panel, own calculations based on the table.

This effect is most likely due to the fact that the affected enterprises have grown already in the previous periods and stretched their resources to the limits of their capacities. The observed growth should therefore not be a consequence of a poor credit rating. Rather, the weak credit rating is probably a reflection of past strong growth which is continuing in the period under analysis. With regard to their funding, high-growth enterprises are therefore also deemed typical clients of equity capital or quasi-equity types of finance that are more in tune with these enterprises' needs than bank loans.

Fast-growing enterprises are young and small

Age and size also have a strong influence on the growth of an enterprise. The likelihood of being a fast-growing enterprise decreases from 3.4 % for a five-year-old enterprise by significantly more than half to 1.5 % for a 50-year-old enterprise. With respect to enterprise size, that likelihood decreases from 3.6 % for an enterprise with two employees to 1.4 % for an enterprise with 34 employees.[11] Reasons will likely include the fact that this analysis uses relative enterprise growth as an indicator for high-growth enterprises. As well, enterprises are often founded 'too small' and then have to grow into their minimum optimal business size first.[12]

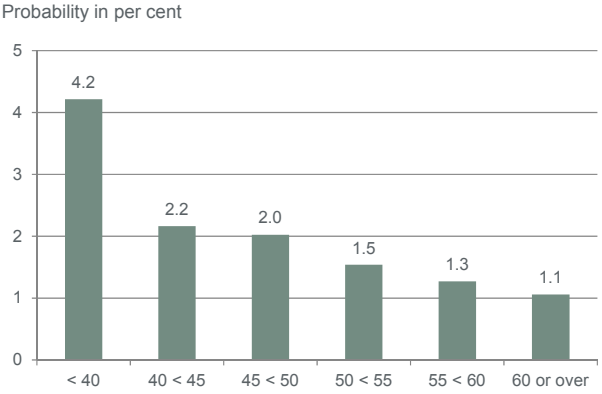
Young entrepreneurs lead high-growth enterprises

Of the characteristics taken into account, it is only for the age of the enterprise that significant effects on enterprise growth (in a statistical sense) can be determined. Entrepreneurs below the age of 40 are most likely to be managing a growth enterprise, at 4.2 %. Up to an age of more than 60 years, that

probability drops to 1.1% (Figure 5). This observation is in line with studies that identified a decreasing propensity to invest as entrepreneurs age.[13] Past studies have also shown that business growth is associated with higher investment activity.[14]

Declining investment activity is likely due to the fact that, as age progresses, investments have to pay for themselves in increasingly shorter periods. This is because when a business is sold because of retirement, the additional proceeds receivable from the investment are uncertain.

Figure 5: Correlation between age of entrepreneur and likelihood of being a high-growth enterprise



Source: KfW SME Panel, own calculations based on the table.

Conclusion

The success of an enterprise cannot be planned ahead with certainty. Besides internal factors, it is also highly dependent on the environment in which it operates. Nevertheless, various features can be identified that distinguish fast-growing SMEs from their more slowly developing counterparts. These include the age and initial size of the enterprise and, in particular, employment of graduates, international orientation and pursuit of an R&D-based innovation strategy.

Considering how important international sales markets are for fast business growth, the resurgence of protectionist tendencies in national trade strategies is therefore worrying. This concern is even more justified as the internationalisation of SMEs had already stagnated in the past years.[15]

The finding that fast-growing enterprises can more often draw on the knowledge of graduates underscores how important qualified staff are for business success. Possible skills shortages can therefore have grave consequences for business growth. According to a study recently published by KfW Research, nearly three fifths of SMEs looking for skilled workers currently anticipate recruitment problems.[16] From the middle of the next decade, it is particularly the retirement of baby boomers from the workforce that is likely to leave enormous gaps in labour force potential.[17] Greater efforts will have to be undertaken to train employees in order to optimally bring the qualifications of the remaining workforce in line with needs so that this decline does not turn into a skills shortage.

Numerous obstacles also hamper the implementation of ambitious innovation activities. They range from financing difficulties to a shortage of skilled workers to bureaucratic hurdles.[18] Making optimal use of existing skilled labour potential through mobilisation and qualification and removing specific obstacles to innovation are therefore key tasks of economic policy.

Not least, the analysis has revealed that fast-growing enterprises often have a weak credit rating. A sufficient supply of suitable financing opportunities as alternatives to bank loans is thus a precondition for the success of fast-growing enterprises. But the venture capital market in Germany is still small in relation to the country's overall economic output. A supply gap is particularly evident in follow-up and growth finance in the start-up and growth phase. One objective of further developing KfW's equity finance mechanisms, therefore, is to specifically target this market segment. ■

Box: Dataset and methodology

The survey analysed which factors determine workforce growth in a small or medium-sized enterprise of at least 50 % within a two-year period (measured in full-time equivalents[xix]). The following characteristics were taken into account in the regression: number of employees (in full-time equivalents), age of company (both logarithmised), employment of university graduates, sales region, own R&D, three-year turnover expectations in the industry where the company operates,[xx] enterprise's creditworthiness according to the Creditreform rating index, collective industry to which it belongs, group to which it belongs, legal status, KfW support status, region of company's registered office and time of survey. The gender, tertiary degree and age of the entrepreneur were also taken into account. All data of the time-varying variables (with the exception of three-year turnover expectations) refer to the time prior to the measurement of growth.

The analysis was conducted with the aid of a logit model (table at end of page). It was based on nearly 15,600 observations of the past four survey waves of 7,300 different, mostly small enterprises. Thus, the median in the sample is merely 13 employees. The standard errors were computed taking into account the fact that one enterprise may make several observations.[xxi] The growth observation period covers the years 2011 to 2015. A total of 2.7 % of the observations included in the analysis meet the criterion for fast-growing enterprises.

Regression results are illustrated using model calculations. The influence of a characteristic on the likelihood of being a fast-growing enterprise can be described by varying a characteristic in the model calculations while leaving all other enterprise characteristics unchanged.

Table: Regression results of logit model of fast-growing enterprises

	Coefficient	Robust t-value
Log(employees)	-0.4078221	-6.65
Dummy: group affiliation	0.1832677	1.11
Log(age of enterprise)	-0.3538143	-5.23
Dummy: own R&D	0.3754289	2.38
Dummy: employment of graduates	0.3394408	2.61
Sales market (reference category: region)		
Sales across Germany	0.0793133	0.57
International sales	0.284415	1.72
Three-year growth expectation in the industry	0.0050606	0.01
Credit rating of enterprise		
Excellent/very good credit rating	-0.0501871	-0.23
Reference category: good credit rating		
Medium credit rating	0.172961	1.47
Weak/very weak credit rating	0.5923392	2.79
Sector to which the enterprise belongs		
Manufacturing	0.0205047	0.11
Construction	0.1467607	0.78
Reference category trade		
Services	0.0756715	0.49
Dummy: legal form with limited liability	-0.0614996	-0.46
Support status: not promoted by KfW	-0.0003726	0.00
Region of registered office	-0.213714	-1.84
Dummy: entrepreneurs with tertiary degree	-0.083924	-0.62
Dummy: gender	-0.2349691	-1.36
Age of entrepreneur (reference category:)		
Younger than 40	0.7565947	4.68
40 to less than 45	0.0678473	0.39
Reference category: 45 to less than 50		
50 to less than 55	-0.2789196	-1.63
55 to less than 60	-0.4731315	-2.43
60 and above	-0.6545815	-3.41
Year of survey (reference category: 2011)		
2012	-0.1330615	-0.89
2013	-0.1056695	-0.64
2014	-0.0977202	-0.63
Constant	-1.741136	-5.13
Number of observations	15,576	
Number of enterprises	7,293	
Log Likelihood	-1765.7998	
Pseudo R2	0.0843	
Wald test	Chi2 (27)=279.14	

Source: KfW SME Panel, own calculations

[1] Cf. Birch, D. L. (1979): The job generation process, Cambridge, MA: MIT program on neighborhood and regional change, Massachusetts Institute of Technology.

[2] Cf. Delmar, F., Davidsson, P. and W. B. Gartner (2003): Arriving at the high-growth firm, Journal of Business Verturing 18, p. 189–216; Hölzl, W. (2014): Persistence, survival, and growth: a closer look at 20 years of fast-growing firms in Austria, Industrial and Corporate Change 23(1), p. 199–231 or Daunfeldt, S.-O. and D. Halvarsson (2015): Are high-growth firms one-hit wonders? Evidence from Sweden, Small Business Economics 44, p. 361–383.

[3] Cf. Barney, J. (1991): Firm Resources and Sustained Competitive Advantage. Journal of Management 17(1), p. 99–120.

[4] Cf. Zimmermann, V. (2014): Innovation und Beschäftigung. Die Beschäftigungswirkung verschiedener Arten von Innovationen in expandierenden und schrumpfenden mittelständischen Unternehmen *(Employment and innovation. The employment effect of different types of innovation in expanding and contracting SMEs)*, Journal of Business Economics, ZfB-Special Issue 4/2013 (in German): p. 131–149.

[5] Cf. Burton, D. M. (2001): The company they keep: Founders' models for organizing new firms, in: Schoonhoven, C. B. and Romanelli, E. (eds.), The Entrepreneurship Dynamic: Origins of Entrepreneurship and the Evolution of Industries, p. 13–39. Stanford, CA, Stanford University Press.

[6] Of the above internationalisation aspects, the KfW SME Panel regularly surveys only foreign turnover.

[7] Cf. Andersson, M. and H. Lööf (2009): Learning-by-Exporting Revisited: The Role of Intensity and Persistence, Scandinavian Journal of Economics 111(4), p. 893–916, Fryges, H. and J. Wagner (2010): Exports and Profitability - First Evidence for German Manufacturing Firms, World Economy 33(3), p. 399–423, Eliasson, K., Hansson, P. and M. Lindvert (2012): Do firms learn by exporting or learn to export? Evidence from small and medium-sized enterprises, Small Business Economics 39, p. 453–472 or Brutscher, P., Schwartz, M. and M. Tchouvakhina (2013): Learning to succeed: how SMEs benefit from the international exchange of ideas, Focus on Economics No. 20, KfW Research.

[8] Cf. Coad, A. and E. Rao (2008): Innovation and firm growth in high-tech sectors: A quantile regression approach, Research Policy 73, p. 633–648, Zimmermann, V. (2009): The Impact of Innovation on Employment in Small and Medium Enterprises with Different Growth Rates, Jahrbücher für Nationalökonomie und Statistik 229(2+3), p. 313–326; Zimmermann, V. (2014): Innovation und Beschäftigung. Die Beschäftigungswirkung verschiedener Arten von Innovationen in expandierenden und schrumpfenden mittelständischen Unternehmen, Journal of Business Economics, ZfB-Special Issue 2013(4), p. 131–149 or Falk, M. (2015): Employment Effects of Technological and Organizational Innovations: Evidence Based on Linked Firm-Level Data for Austria, Jahrbücher für Nationalökonomie und Statistik 235(3), p. 268–285.

[9] Cf. Zimmermann, V. (2015): What are the hallmarks of consistently successful businesses? Focus on Economics No. 113, KfW Research.

[10] Cf. Peters, B.; Roberts, M. J. and Vuong, V. A. (2017): Dynamic R&D Choice and the Impact of the Firm's Financial Strength, Economics of Innovation and New Technology 26(1-2), p. 134–149.

[11] An age of 50 years and a company size of 34 employees reflects the respective 75th quantile of the sample.

[12] Cf. Coad, A., Segarra, A. and M. Teruel (2016): Innovation and firm growth: Does firm age play a role? Research Policy 45(2), p. 387–400.

[13] Cf. Zimmermann. V. (forthcoming): Does innovation output of SMEs decline as entrepreneurs age? Zeitschrift für KMU und Entrepreneurship, or Schwartz, M. (2016): KfW SME Panel 2016. SMEs are using their financial buffers – but not boosting investment, KfW Research.

[14] Cf. Zimmermann, V. (2015): What are the hallmarks of consistently successful businesses? Focus on Economics No. 113, KfW Research.

[15] Cf. Schwartz, M. (2016): KfW SME Panel 2016. SMEs are using their financial buffers – but not boosting investment. KfW Research.

[16] Cf. Leifels, A. (2015), Recruitment of skilled workers in SMEs: Optimism must not distract from qualification problems, Focus on Economics No. 100, KfW Research.

[17] Cf. Fuchs, J., Söhnlein, D. and B. Weber (2017): Projektion des Erwerbspersonenpotenzials bis 2060. Arbeitskräfteangebot sinkt auch bei hoher Zuwanderung. IAB Kurzbericht 5/2017 (*Projection of labour force potential up to 2060. Labour supply will decline even with high immigration. IAB short report 5/2017* (in German).

[18] Cf. Zimmermann, V. and J. Thomä (2016), SMEs face a wide range of barriers to innovation activity – support policy needs to be broad-based, Focus on Economics No. 130, KfW Research. Zimmermann, V. (2016), KfW SME Innovation Report 2015 – Germany's innovation performance remains low despite slight increase, KfW Research, or Zimmermann, V. (2012): Barriers to innovation in SMEs, Focus on Economics No. 6, KfW Research.

[xix] These include full-time and part-time employees as well as owners active in management, but no trainees or apprentices. Two part-time employees are counted as one full-time employee.

[xx] Turnover expectations within an industry (typically on a two-digit level) are calculated as the balance of positive and negative expectations of the companies surveyed by the KfW SME Panel, while excluding from the calculation the assessment by the enterprise currently being analysed.

[xxi] Cf. Huber, P. J. (1967): The behaviour of maximum likelihood estimates under non-standard conditions, Proceedings of the Fifth Berkley Symposium on Mathematical Statistics and Probability 1: 221–233 and White, H. (1982): Maximum Likelihood Estimation on Misspecified Models, Econometrica 50: 1–25.