

# Focus on Economics

No. 107, 6<sup>th</sup> October 2015

## Financial literacy helps with business start-ups: easier, better funded, more competitive

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Financial literacy is a significant factor in the success of business start-ups. This is demonstrated for the first time in a special analysis of the KfW Start-up Monitor 2014. When it comes to financial matters, experienced entrepreneurs are more competitive and their start-ups are more resilient. This is due, among other things, to the fact that they have fewer problems obtaining external funding and use more favourable sources of finance.

Germany is losing valuable entrepreneurial potential through insufficient financial knowledge. However, these deficits are not set in stone: training programmes and start-up coaching have proved effective. Start-up activity would benefit from higher participation rates.

Year after year, hundreds of thousands take the plunge into self-employment – in Germany in 2014, the number totalled 915,000. However, not all business start-ups can (or want to) establish themselves in the marketplace: of the approximately 2.5 million start-ups set up over the past three years, 450,000 (17%) have done so. Some start-ups folded after just a few weeks, others kept going for quite a few months.

The probability of an average start-up project aborting can be calculated from the exact start-up dates between 2005 and 2014 (and the termination dates) using the KfW Start-up Monitor. After one year, the drop-out probability was 15% and after three years it was 30%, which means that only 70% of all start-up pro-

jects in Germany go on to celebrate their third anniversary (Figure 1).

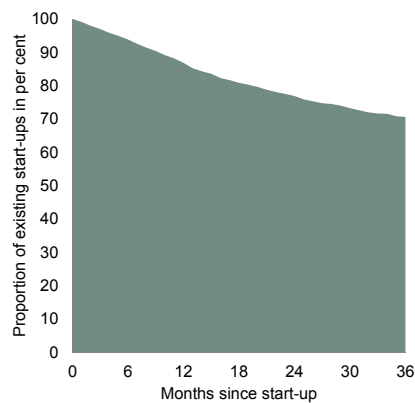
A period of self-employment can end for very different reasons. Some start-up projects are set up on a temporary basis from the outset, others are given up due to attractive job offers. However, start-ups also often prove to be uneconomical or the entrepreneurs are overstretched. Ultimately, by taking a step into self-employment, new entrepreneurs have to make a lot of critical decisions – and often in areas that are new to them.

### Short-lived: start-ups in trade, those of young entrepreneurs and those set up out of necessity

What are the most common start-up projects to be aborted? A look at the data from the KfW Start-up Monitor shows: the drop-out ratio is highest in the highly-competitive sectors of trade and construction.<sup>1</sup> Almost a quarter of all new trading companies from the last three years have since shut down. This is significantly higher than the average of 17% (Figure 2).<sup>2</sup>

**Figure 1: Drop-out probability of start-up projects**

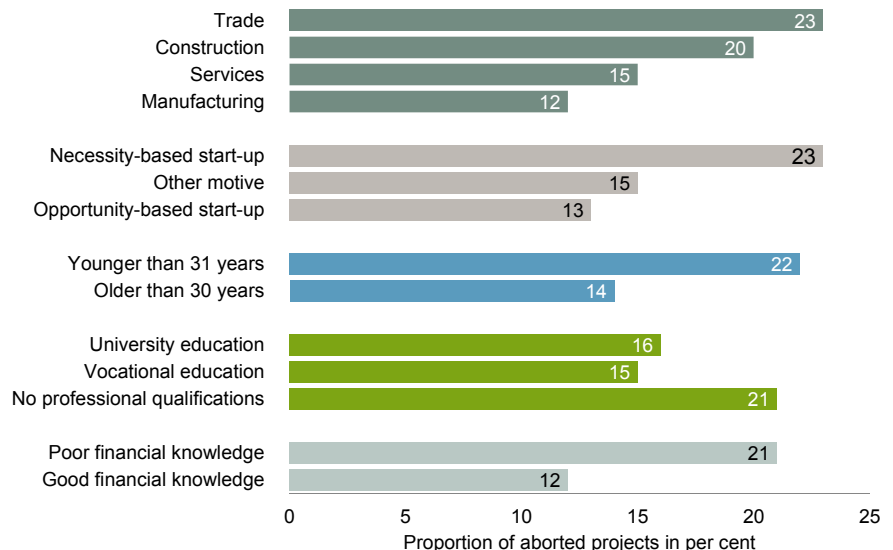
Kaplan-Meier estimates on the survival of start-up projects within the first three years.



Source: KfW Start-up Monitor 2008–2014.

**Figure 2: Drop-out frequency of different business types**

Proportion of aborted start-up projects as a percentage, taken from all start-ups in the last three years (total average: 17%)



Source: KfW Start-up Monitor 2014.

The personal conditions of the entrepreneurs also have a major influence on resilience: For example, it is more common for young entrepreneurs to abort their projects (22%). Furthermore, “opportunity-based start-ups” that exploit an explicit business idea are longer-lasting than “necessity-based start-ups” set up in the absence of better employment alternatives. Over the last three years, 23% of necessity-based start-ups have come to an end. For opportunity-based start-ups this figure is just 13%.<sup>3</sup>

**The key to success is education**

The resilience of start-up projects is strongly influenced by the new entrepreneur’s level of education. This can be shown by means of formal professional qualifications: new entrepreneurs without professional qualifications are more likely to abort their projects (21%) than those with vocational or academic degrees (15 and 16%).

One of the key educational components for the success of the start-up, however, which up until now has not been given any special attention, is financial literacy. Information on the financial knowledge of entrepreneurs was first compiled in the KfW Start-up Monitor 2014. For this, basic knowledge in finance topics such as credit financing, interest calculation and inflation was recorded by means of standard questions. The respondents were also to give a subjective evaluation of how good their financial knowledge is (see Box).

**Financial literacy protects against an early exit**

The correlation between financial literacy and resilience is clear: looking at the new entrepreneurs from the last three years, those with better financial knowledge were much less likely to abort their projects. With good financial knowledge, the drop-out rate is just 12%, with poor financial knowledge, it is 21%.<sup>4</sup>

Multivariate analyses which monitor characteristics such as education, gender and start-up type confirm the influence of the above-mentioned factors. It also shows that financial literacy has a bigger influence on the resilience of a start-up than sector, age or the entrepreneur’s motive.

Statistically, the drop-out probability of an average start-up project reduces by a third through good financial knowledge alone.<sup>5</sup>

By including financial literacy in the regression model, the professional qualification loses the explanatory power it had previously.<sup>6</sup> This is an indication that specific financial literacy is more decisive in the success of a start-up than the general level of professional education.

**Financial literacy prevents financial problems**

An essential connection between financial competence and start-up success is the – often complicated – financing of the start-up project. New entrepreneurs find it much harder to obtain outside funding than established companies. They often lack guarantees and credit history, making it difficult for investors to assess the risk. A total of 20% of start-ups from the last three years have been affected by financing difficulties. Typically, it manifested itself as a lack of own funds, lengthy loan negotiations or ultimately failed funding.<sup>7</sup>

New entrepreneurs with good financial knowledge get into financing difficulty far less (17%) than those with poor financial knowledge (24%). Also, the extreme case where fundraising efforts remain

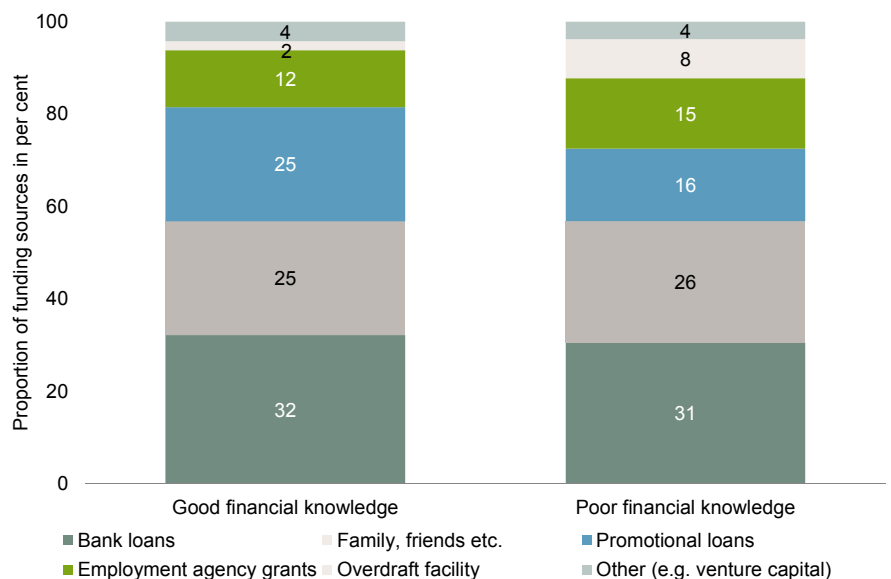
unsuccessful is much less common: new entrepreneurs with good financial knowledge are almost always successful in funding their projects. Just 3% end up not using either their own or outside capital. For those new entrepreneurs with poor financial knowledge, the rate of failed funding is noticeably higher at 11%.<sup>8</sup>

**Financial literacy reduces capital costs**

Most new entrepreneurs who seek funding eventually manage to finance their projects – even raising external funds is successful most of the time. However, a low level of financial literacy still has negative consequences: it leads to an unfavourable financing mix (Figure 3). Indeed, the proportion of funding from bank loans (approx. 30% of external funds) and relatives/friends (approx. 25%) is almost identical. New entrepreneurs with good financial knowledge, however, make use of promotional loans on a much larger scale. These cover on average 25% of their financial resources, whereas new entrepreneurs with poor financial knowledge cover just 16%. In turn, overdraft facilities play a much bigger role for those with poor financial knowledge. Their proportion of funding is four times higher than for those with good financial knowledge (8 vs. 2%).<sup>9</sup>

**Figure 3: Financing mix with varying levels of financial literacy**

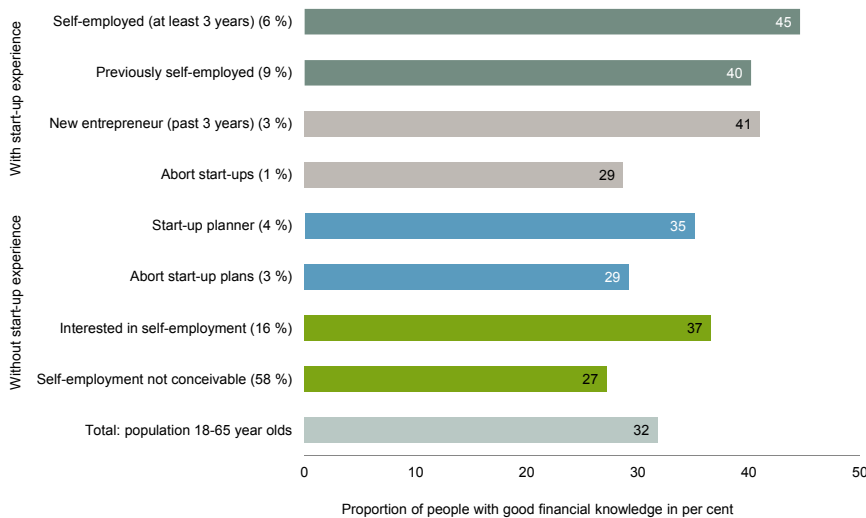
Proportion of different external sources of funding as a percentage. Based on new entrepreneurs from the last three years who have used external funding.



Source: KfW Start-up Monitor 2014.

**Figure 4: Financial literacy of different population groups**

Proportion of people with good financial knowledge in different population groups with/without start-up experience as a percentage. Percentage share of the population aged 18 to 64 in brackets.



Source: KfW Start-up Monitor 2014.

these skills. The average financial literacy of the self-employed person increases in accordance with age, something that does not apply to the population as a whole.

**Those interested in self-employment underestimate their potential**

When deciding whether to become self-employed or not, one’s own financial knowledge obviously plays a part – or one’s subjective evaluation of it. The differences shown in financial literacy between different groups of people do indeed closely reflect their own evaluation. However, one noticeable deviation stands out: people who are interested in start-ups but have no business experience or no start-up plans are characterised by significantly above-average levels of financial literacy – however, they systematically underestimate this.<sup>11</sup>

It is, however, not possible to definitively answer how underestimating yourself prevents those interested in start-ups from seriously tackling a business start-up. In terms of obstacles, however, corresponding risks come out on top: two thirds shy away from the financial risk, about half worry about income and workplace risks. Just 41% of those interested in start-ups stated that it was the lack of a business idea.

For start-up planners – i.e. those interested in start-ups who have already taken the first steps – these worries play a less critical role. This also applies to those who have been self-employed before and now have a renewed interest in start-ups. The confidence of this group can be traced back to a more optimistic risk assessment, alongside their fundamentally larger appetite for risk. This is, among other things, influenced by their own perception of their financial literacy.

**For the start-ups of tomorrow: entrepreneurship on the curriculum**

Due to the positive economic effects it has, greater start-up activity in Germany is desirable. The large number of people interested in start-ups represents a considerable potential – and indeed a well-educated one at that. These “hidden reserves” are not only held back by low unemployment<sup>12</sup> but also by their risk

This shift away from favourable promotional loans towards more expensive overdraft facilities is an indication of a lack of information or planning when there is insufficient financial literacy.

**Self-employed are out in front when it comes to financial literacy**

Given the great importance financial literacy has for funding and resilience of a business start-up, the question arises how novices, the long-standing self-employed and people without any start-up experience differ in this respect. It is shown here (Figure 4):

- (1) The self-employed (incl. new start-ups) have much better financial knowledge than people without start-up experience.
- (2) The experienced self-employed are on average more adept in financial matters than novices.
- (3) New entrepreneurs who have already aborted their project have significantly less financial knowledge than new entrepreneurs who are still active.
- (4) Start-up planners have poorer financial knowledge than new entrepreneurs. The average financial literacy of those who abort start-ups and plans is even worse.

(5) The majority of the population has no start-up experience. Those who in principle could not even imagine going self-employed have significantly worse financial knowledge than those generally interested in starting a business.<sup>10</sup>

**Selection and learning effects explain differences in financial literacy**

The group comparison of financial literacy yields two main findings. Firstly, someone who is interested in start-ups performs better than someone who is not interested and secondly, those who are experienced in self-employment perform better than novices. Both findings point to self-selection and learning effects as key influencing factors.

In this way, people with business skills are much more likely to be interested in self-employment and are more likely to put this interest into practice. Therefore, a self-selection takes place according to existing (and assumed) skills. Market-based competition results in further selection, as shown by the below-average financial knowledge of those who abort start-ups.

Learning effects result from practical experience of self-employment: the longer the entrepreneur is self-employed for, the more their business skills improve. Financial literacy also makes up part of

preferences and a self-evaluation that is sometimes too pessimistic.

Risk-reducing measures, such as the reform of the insolvency law 1999, have in the past not had the intended effect.<sup>13</sup> Alongside a general entrepreneurial framework, long-term efforts to promote the entrepreneurial spirit can particularly boost start-up activities. Entrepreneurial skills (self-initiative, dealing with risk, decisiveness, financial literacy) should, therefore, already be taught to young people.<sup>14</sup> In Germany, there is still much to do to mobilise future potential entrepreneurs.

**For the start-ups of today: financial literacy through further training**

New entrepreneurs of today can benefit directly and quickly from targeted training

and support. Above all, gaps in knowledge of financial topics should be addressed. Firstly, financial literacy is an important factor in the success of business start-ups, particularly when financing with external funds. And secondly, financial literacy can be learnt.

A study based on the KfW Start-up Monitor 2013 demonstrated that training programmes make business start-ups more competitive and more successful. Most programmes deal with financial topics: tax (82%), business planning (75%) and company financing (73%). 85% of participants considered the acquired competencies as useful, the probability of aborting their start-up project drops statistically by 30%.<sup>15</sup> Start-up coaching and training not only imparts financial and other specialist knowledge; it also

boosts self-confidence and decision-making. The costs and the time required are also manageable.<sup>16</sup> Despite this, the participation rate leaves room for improvement: Less than a third of new entrepreneurs take part in training programmes before or at the start of self-employment.

Some start-up projects in recent years could have been more successful with better financial knowledge. And many a project may not have even got to the planning stage for lack of financial literacy. This untapped potential is a strong argument for coaching and training in the run-up to starting a business. It is, however, firstly up to the new entrepreneurs to make use of this support. ■

**Financial literacy in the KfW Start-up Monitor 2014**

In the KfW Start-up Monitor 2014, information about the financial literacy of new entrepreneurs and a representative sample of the rest of the population (totalling around 11,000 observations) was collected. The seven questions used for this (see below) derive from the scientific literature, e.g. the international research project “Financial Literacy around the World”, and deals with, amongst other things, the basic principles of credit, interest calculation, inflation and risk diversification in financial investment.<sup>17</sup> The evaluation of financial literacy used in this report is based on the number of questions answered correctly. Persons who answer at least six out of seven questions correctly are considered to have “good” financial knowledge, those who answer three or less correctly are assumed to have “poor” financial knowledge. Respondents also provided a self-assessment of their financial literacy.

How would you assess your own knowledge of financial matters and contexts?

(very good, quite good, average, quite poor, very poor)

Suppose you invest EUR 100 at an annual interest of 2% for a fixed five-year period. What do you think: how much will be in the account after five years?

- a) more than EUR 102
- b) exactly EUR 102
- c) less than EUR 102

Suppose you invest EUR 100 at an annual interest rate of 1%. What do you think: after one year, at an inflation rate of 2%, will you be able to buy exactly the same amount, more than the amount or less the amount with the asset than you can today?

- a) more,
- b) exactly the same,
- c) less

Suppose you take out a loan of EUR 100 at an annual interest rate of 10%. After one year, you pay the bank back EUR 5. What do you think: how much do you still owe the bank after this repayment?

- a) more than EUR 100
- b) exactly EUR 100
- c) less than EUR 100

Suppose you take out a loan of EUR 100 at an annual interest rate of 20%. What do you think: how many years will it take for the debt to double if you do not make any payments to the bank?

- a) 2
- b) 2 to 5
- c) 5
- d) more than 5

True or false: investing in the shares of an individual company is less risky than investing in a fund with a portfolio of shares of similar companies.

True or false: if you use your bank account overdraft, you generally have to pay less interest than if you take out an instalment loan of the same amount.

True or false: The shorter the term of the loan is, the higher in general the monthly repayments are. The total sum of the interest payments drops, however.

Solutions: a, a, c, a, b, a, b, f, f, t

<sup>1</sup>The particularly high competitive pressure in these sectors can be explained principally by the low barriers to entry.

<sup>2</sup>In principle, shareholdings are also less persistent than new start-ups because they are more commonly planned on a short-term basis from the very outset. Take-overs are, on the other hand, particularly persistent, not least because by continuing an existing company, some of the risk factors of new start-ups are eliminated.

<sup>3</sup>The decision for necessity-based entrepreneurs to go into self-employment is often made before coming up with the business idea. The statistical explanatory power of the influential factors mentioned (age of entrepreneur, sector, motive behind the start-up) is confirmed by regression analyses controlling for other factors.

<sup>4</sup>The evaluation of financial literacy used in this report is based on the number of questions answered correctly. People who answer at least six or seven questions correctly are confirmed as having a “good” level of financial knowledge. This applies to approx. 40 % of the new entrepreneurs over the last three years, of which 15 % had correct answers throughout. Three correct answers or less is deemed “poor” financial knowledge. This applies to approx. 20 % of the entrepreneurs. The results based on this relatively simple distinction remain the same even when more complex measures are used, e.g. the distribution of a weighted score according to empirical difficulties.

<sup>5</sup>Marginal effect of the binary variable “good financial knowledge” from a regression (logistic survival model) of the monthly drop-out rate probability based on the KfW Start-up Monitor 2014 (start-ups from the last three years). Other statistically significant variables (confidence level: \* 90 %, \*\* 95 %, \*\*\* 99 %): age under 30 (+)\*\*\*, previous self-employment (-)\*\*\*, trade sector (+)\*, necessity-based start-up (+)\*\*\*, shareholding start-up (+)\*\*\*, duration of prior planning (-)\*\*.

<sup>6</sup>The level of education is measured here as the highest professional qualification achieved.

<sup>7</sup>Looking at the start-ups from the last three years, the statistical relation between financial difficulties and resilience is: 25 % of the aborted start-ups had financial difficulties, 19 % of those start-ups that are still going have or have had problems. However, financial difficulties do not signify the end of a start-up project by any means. They are much more a measure of how much effort the entrepreneur has to put in to persuade potential investors.

<sup>8</sup>Under the category “failed funding” falls any entrepreneur who reports problems with raising funds and ultimately has not used any financial resource, neither their own nor an outside source. Together with the entrepreneurs who have used financial resources, they form the group “sought funding”.

<sup>9</sup>Another difference is the larger weight of funding from the Federal Employment Agency (15 vs. 12 %) for new entrepreneurs with poor financial knowledge. It is explained by the greater proportion of previously unemployed new entrepreneurs within this group.

<sup>10</sup>The fact that the financial literacy of the actual start-up planners is significantly worse than that of those only generally interested in start-ups can in part be explained by socioeconomic differences between these two groups: Being interested in self-employment without a concrete start-up plan is accompanied by an above-average level of education and income, i.e. often with attractive employment, which makes a business start-up unattractive in comparison. Amongst those interested in start-ups, the start-up planners are - economically speaking - those with lower opportunity costs of self-employment.

<sup>11</sup>Relative distributions are considered when comparing objective financial literacy and its subjective assessment. Therefore, objective financial literacy is measured in a weighted score according to empirical difficulty (i.e. the frequency of correct answers per question). The distribution of this score (ratio scale) is divided into categories that correspond to the subjective variables (ordinal scale) in their size. For example, almost 15 % of all people describe their financial literacy as very good. This means the 15 % with the highest score are credited with “very good” financial knowledge (etc). On this basis, each person is reviewed to see whether they are in the same category for both distributions; if not, they have either under- or overestimated. This method assumes that the size of the respective groups “very good”, “quite good” etc. have been correctly assessed. As an objective evaluation of financial literacy is not possible, such an assumption is necessary. It is thus not an absolute measure of over-/underestimation but a relative measure. It enables the comparison between different groups of people in the form of assertions such as “Group A overestimates their own financial literacy much more frequently than Group B”, but not assertions such as “The working-age population as a whole underestimates their financial knowledge.”

<sup>12</sup>On a macro-economic level, two factors influence start-up activity: the business cycle and the labour market. The individual decision to set up a business depends substantially on the attractiveness of the alternative “paid employment”. In other words, a good job market increases the opportunity costs of getting self-employed.

<sup>13</sup>See Metzger, G. (2015): Where there's a will, is there a way? Barriers to becoming self-employed, Focus on Economics No. 82, KfW Bankengruppe, Frankfurt am Main.

<sup>14</sup>Current initiative „Unternehmergeist in die Schulen“ (*Bringing the spirit of entrepreneurship into schools*) sponsored by the Federal Ministry of Economics and Energy.

<sup>15</sup>See Metzger, G. (2013): Good advice helps – and it needn't be expensive, Focus on Economics No. 28, KfW Bankengruppe, Frankfurt am Main.

<sup>16</sup>More than half of the training programmes used are free of charge thanks to various funding programmes. The average duration of qualification programmes is 23 hours.

<sup>17</sup>See Lusardi, A. and O. S. Mitchell (2011): Financial Literacy around the World: An Overview, *Journal of Pension Economics and Finance*, 10(4), pp. 497–508; Bucher-Koenen, T. and A. Lusardi (2011): Financial Literacy and Retirement Planning in Germany, *Journal of Pension Economics and Finance*, 10(4), pp. 565–584.