FUNDING RISK PERCEPTION BY SLOVAK SMES: IMPACT OF AGE AND SIZE OF THE COMPANY

Abstract. Small and medium-sized enterprises are facing many types of business risks, almost unknown or unimportant for the large companies, where the funding risk plays an essential role due to the importance of the need of the external financial sources for their growth. This paper investigates the impact of a size of the company and an age of the owner on the perception of the funding risk in the segment of small and medium-sized enterprises in Slovakia in response to the restraints in their access to credit finance. The results of the research specify the importance of these factors in determining the scope of the funding risk exposure on Slovak SMEs. The paper is based on the data from the scientific research carried out in 2016 in Slovakia among 438 companies. The data were analyzed by Pearson’s chi-square statistics, which allowed to confirm the existence of the statistically significant dependencies between the chosen factors and the perception of the funding risk. The presented statistical evidence confirms that the size of the company and the age of the owner are significant in relation to the funding risk of a company from the segment of SMEs. Smaller companies do perceive the funding risk more intensively than larger ones. The statistically significant impact of the selected factors on the frequency of bank loans rejection was confirmed only in case of the age of the owner, but not in case of the size of the company, when the entrepreneurs of the age between 36 and 45 declared the highest rejection rate of the loan applications. A surprising finding is that younger entrepreneurs are significantly more self-confident in case of the potentially negative influence of the funding risk on their companies than their older colleagues. The results of the research also confirm the existence of the statistically significant dependence between the selected factors and the reasons for the rejection of bank loans applications. We can declare that a credit rejection is most common in case of younger business owners but is not typical for the smaller companies. In the group of entrepreneurs aged between 36 and 45 years the most frequent reason was related to the negative values of the financial indicators, and in case of the oldest entrepreneurs the most often reasons of the rejection of the loan application were the lack of collateral, poor business plan and negative values of the financial indicators.

Keywords: credit risk, small and medium-sized enterprises, age, size, loan financing, bank financing, external finance, access to finance.

Introduction. Small and medium-sized enterprises (SMEs) belong to the specific segment of the economy that has several distinct characteristics, usually related to the size of the companies. The scale of SMEs’ contribution to the economy makes them a backbone of each market economy (Cepel et al., 2018; Dobeš et al., 2017; Kozubíková et al., 2017; Sobeková, 2011, Mura and Gašparíková, 2010), and allows to consider them for one of the most important components of the world’s economy (Karpak and Topcu, 2010, Badulescu, 2010). Henderson and Weiler, 2010, Hajduová et al., 2014 declare that SMEs are the most important engine of an economic growth. 99 % of all companies in the USA and the European Union belong to the segment of SMEs (Bhaird, 2010). According to the data of the Slovak business agency, the number of SMEs in this country is exactly 99.9 %, while they create 50 % of the state added value and are responsible for the employment of the 70 % of the workforce. Despite their vital contribution to the economy, the companies from the segment of SMEs segment belong to the category of endangered economic species, mainly because of their size. These companies are facing many types of business risks, almost unknown or unimportant for the large companies, where the funding risk plays an essential role due to the importance of the need of the external sources of finance for the growth of SMEs (Bena

and Ondko, 2012, Ključníkov and Belás, 2016, Ključníkov et al. 2016a, Vojtovič, 2016, Ključníkov et al. 2016b, Mercieca et al., 2009, Mentel and Brožyna, 2015; Gambini a Zazzaro, 2013, etc.). SMEs often experience difficulties with the obtaining of the bank loans because of their weak capital power and a usually short history.

The aim of this paper is to investigate the impact of a size of the company and an age of the owner on the funding risk in the segment of small and medium-sized enterprises in Slovakia in response to the restraints in their access to credit finance. The paper has the following structure. The actual start of the art in this field of study identified through the literature research is described in the first chapter. The second chapter presents the research methodology and describes the research data. The results are presented in the third chapter and are discussed in the fourth one. The last chapter concludes the findings of the research.

**Literature review.** Funding risk is the possibility, that a company will be unable to execute its strategic plans due to the financial reasons, including an inability to gain sufficient value of financial sources neither by concentration of an additional equity, nor by the credit resources, or the cases of unacceptable increase of the price of these financial sources (Fetisovová et al., 2012). Bena and Ondko (2012) declared that an access to the external sources of finance is important for the companies with the growth potential in the developed countries. The claim that access to finance is necessary for the growth and further development of SMEs is concurrently confirmed by Mercieca et al. (2009) and Rabbani and Moosa (2014). According to Jakubec et al. (2012), insufficient financing is one of the most important barriers for young entrepreneurs. Steinerowska-Streb and Steiner (2014) declared that the lack of finance is considered to be the main reason for the limitation of the growth of SMEs. Italian researches Gambini and Zazzaro (2013) found that bank lending has a positive effect on the growth of companies. Behr and Guttler (2007) considered the bank lending for a dominant external financial source used by German SMEs.

Cheng, Tang and Shi (2012) confirmed the results of Majková (2008) by the finding that a weak capital power and a credit degree as the biggest problems of SME financing. Sobeková (2011) found that the usage of the internal sources of financing in case of SMEs in Slovakia is dominating over the external financial sources, including leasing and bank loans. She also stated that in case of the debt financing Slovak SMEs are mainly experiencing problems with the guarantees. While the economic crisis has reduced the profitability of SMEs in the Czech Republic and Slovakia (Belás et al, 2015), three quarters of the entrepreneurs in the segment of SMEs in the Czech Republic perceive the intense action of the financial risk, but at the same time their ability to properly manage financial risks in the segment of SMEs is not at an appropriate level (Belás et al., 2016; Kozubíková et al., 2017).

The funding risk, an important part of the financial risk of the company, is closely related to the expense of usage of the loan financing, the most frequent source of external capital in case of SMEs. But is the size of the company in the SME segment a significant factor, that is able to influence the intensity of the funding risk? SMEs are experiencing problems with many obstacles in doing business (Simo et al, 2016). Irwin and Scott (2010) identified an access to bank financing as a significant barrier for business development in case of SMEs in the UK. While larger companies do not usually experience the problems with the collateral in case of the bank financing because of the level and structure of their assets, companies from the SME segment are more vulnerable in this case. Bottazzi et al. (2014) stated that small companies have more limited options for external financing than larger ones. Bougheras et al. (2006) found that the size of the company matters in the relationship with the banks. Belas and Sopkova (2016) found that larger companies belonging to the segment of SMEs are more active and more autonomous in comparison to microenterprises. These findings indicate that the size of the company could be an important factor in the assessment of the funding risk.

According to Seo (2013), SMEs are unable to provide a sufficient amount of collateral more frequently in comparison with large enterprises. While based on the previous researches Seo (2013) hypothesized
that the bank loans to SMEs are riskier in comparison with the loans to large companies, he found that the loans of smaller banks tend to be less responsive to the economic shock, which is in line with the large-bank barriers hypothesis. Dong and Men (2014) confirmed that smaller and younger companies are facing more financing constraints. The availability of credit information and the bank concentration ratio have a significant impact on SME financing. Small and growing firms in Great Britain are likely to have higher interest rates in case of bank loans than large firms with the regular turnover. Rostamkalaei and Freel (2015) stated that the size of the company affects the interest rates values: the smaller the firm is, the higher the interest rates are. Also, Oliveira and Fortunato (2006) considered the size of the company for a relevant factor. They presented the finding that the credit rejection or high-interest rates are most common in case of the small companies.

The age of the owner is the next discussed factor with the influence on the funding risk. The general impact of age on business was declared by many authors. Arenius and Minniti (2005) examined the influence of the demographic factors, including the age, gender and level of education on the willingness of an individual to become an entrepreneur, and according to the results of their research, the age is negatively related to entrepreneurship. The positive impact of age on business was declared by the other authors. Bonte, Falck and Heblich (2007) examined the relationship between the age structure and business startups in the western part of Germany. They considered the age as one of the most important factors for becoming an entrepreneur. Brunow and Hirte (2006) examined an impact of age on the regional economic growth. Levesque and Minniti (2011) bring a statistical evidence that the age has an impact on the entrepreneurial growth. According to Lazányi (2014), young entrepreneurs and tertiary students have a lack of entrepreneurial competencies in comparison with the older and more mature entrepreneurs.橄榄利亚和Monte（2010）提出了申请的年龄是一个重要的因素。

The number of studies, related to the impact of age on the credit risk of a company is quite limited. Such authors as Bougheas et al. (2006), Bottazzi et al. (2014), Dong and Men (2014), Hernández-Cánovas and Martinez-Solano (2010), Lazányi (2014), Oliveira and Fortunato (2006), Pickernell et al. (2011), Riding et al. (2012) Vos et al. (2007), declare that the funding risk is highly related to the age of an entrepreneur, while it is substantially higher in the group of younger entrepreneurs. Sobeková Majková (2016) brought statistical evidence that the age has a significant impact on the ability of the company to protect against the change of the interest rate and that young entrepreneurs have problems with obtaining capital and increasing interest rates and collaterals because of their higher risk profile.

Different authors state that the age of the owner influences the financing of the company, and therefore may influence the perception of the funding risk. Vos et al. (2007) brought a significant finding that young entrepreneurs do take loans according to their age. According to their study, younger and less educated entrepreneurs are more likely to use external financing sources to finance the growth of their businesses, while older and more educated entrepreneurs are more focused on the internal financial sources. The research by Colombo et al. (2016) identified that younger companies suffer from the financing constraints, directly related to the funding risk, sufficiently more than the older and more experienced ones, which limits their growth. The results of Neuberger and Räthke-Döppner (2014) from Germany confirm that due to the smaller size of business, lower level of liquidity and therefore higher probability of the delay of payments to the suppliers, young entrepreneurs are more likely to pay higher interest rates than their older colleagues. Oliveira and Fortunato (2006) in their research focused on Portuguese entrepreneurs found that the rejection of the loan or higher interest rates are most common in case of small and young firms. According to their results, small and young entrepreneurs are highly cash-flow sensitive, which is causing their financial restraints to be more substantial than in the case of the larger firms. Werner and Faulenbach (2008) confirmed that age has an impact on the funding risk, resp. that young entrepreneurs are facing the funding risk more often than older entrepreneurs. They found that older entrepreneurs have fewer problems in getting a start-up capital than the younger ones. Coleman et al. (2014) devoted their study to the impact of age of the owner on the composition of start-up capital of the companies and found the age...
to be a significant factor. They found that younger companies are more likely to focus on less formal (and more expensive) financial sources, often due to the inability to provide a sufficient collateral to secure the loan. The impact of age on funding risk is also declared by Bottazzi et al. (2014) and Bougheas et al. (2006). They brought the evidence that the age influences the relationship with the banks and influences the options of external financing. Even if the majority of the researches declare the significant impact of age on the financial risk, some authors present the opposite results. For instance, Slavec (2014) in his research of Slovenian SMEs has found no significant impact of the age of the business owner on the bank loans or trade credits.

Research Methodology and Scientific Methods of Survey. This part of the paper describes the scientific methods used in our research, the way of data collection, the characteristics and size of the data sample, and provides information about alternative working hypotheses. The research focused on the actual situation in the Slovak business environment was carried out in 2016. The questionnaire called Financial Risks of SMEs in Slovakia was distributed online and is available on the link: https://docs.google.com/forms/d/1Fhob6avbfQq4DcaYG44rmxNYyohzqcZWDICXkUgFbNq4/viewform?c=0&w=1.

The research data were collected in three specific ways. First of all, a random selection of the appropriate companies was made from the free database of Slovak companies available on www.vsetkyfirmy.sk. The selected companies were contacted by our research team by email. In case that the selected company did not react on the email, it was contacted by phone. The questionnaire was also placed on the specialized economic web-portals, focused on SMEs. Finally, the sample of the companies selected by the team experts was contacted directly by the researchers. The total number of 438 questionnaires was collected during the research. This number of respondents fulfils the requirements for stochastic selection.

Our research team defined four groups of monitored enterprises in relation to the size of the company according to the European Union Directive, where the main criterion for the aggregation was the number of employees: micro companies employ 0 to 9 employees, small companies 10 to 49 employees, middle-sized companies from 50 to 249 employees and big companies employ more than 250 of them. According to the newest official Slovak statistical data presented in the report of the Slovak business agency (Table 1) 531.063 of small and medium-sized enterprises were operating in Slovakia in 2015.

Table 1 – The number of companies and SMEs in Slovakia in 2015

<table>
<thead>
<tr>
<th>Legal Form (2015)</th>
<th>Basic data set</th>
<th>Selected sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total values</td>
<td>Share (%)</td>
</tr>
<tr>
<td>Micro enterprises (0-9 emp.) and individual entrepreneurs</td>
<td>515 236</td>
<td>96.9 %</td>
</tr>
<tr>
<td>Small enterprises (10-49 emp.)</td>
<td>12 984</td>
<td>2.4 %</td>
</tr>
<tr>
<td>Medium enterprises (50-249 emp.)</td>
<td>2 843</td>
<td>0.5 %</td>
</tr>
<tr>
<td>Large enterprises (250+ emp.)</td>
<td>666</td>
<td>0.1 %</td>
</tr>
<tr>
<td>Total number of business units</td>
<td>531 729</td>
<td>100 %</td>
</tr>
<tr>
<td>SMEs from total</td>
<td>531 063</td>
<td>99.9 %</td>
</tr>
</tbody>
</table>

Sources: Slovak Business Agency (2016): SMEs Report 2015, own processing

According to the calculated sample, the research team assumes that the data are representative and have the reliability of 95 %. The sampling error of +/- 5 % should be considered. The minimum size of the sample should be calculated according to the formula

\[ n = \frac{(1.96)^2 \times \sqrt{p \times (1 - p)}}{0.05^2} \]

where p is the share of the sample. The size of the minimum sample was 310, while the real size of our sample was 438.
The comparison of the different characteristics of the basic data set and our selected sample indicates striking similarities, while the differences between them are insignificant. For instance, the basic dataset contains 99.8% of SMEs, while our sample contains 93.8% of them (the difference is only 6.1%); the data about the regional structure and the area of primary economic activity of the selected companies are also close to each other.

In order to analyze the data and evaluate the results our research team used the tools of descriptive statistics (averages and percentage), Microsoft Excel (Office 2007) software as an important tool for data analysis due to its possibilities in data processing using the pivot tables, and the methods of comparison and deduction in data analysis. However, the aim of the paper is to examine the dependencies between the two variables we decided to use a statistical method of Pearson’s chi-square by using the statistical software available at www.socscistatistics.com to confirm the significance of the identified relations. This method allows to confirm the statistical results at 50% level of significance level and provides a simple verification of the existence of the statistically significant dependences and differences between the selected factors.

By the method of expert estimation, we have defined five alternative working hypotheses (H1 – H5) related to the chosen factors. The accuracy of the hypotheses was verified by the statistical methods. Each hypothesis included two parts – one in relation to the size of the company and the second in relation to the age of the owner. Null hypotheses assuming there are no statistically verifiable differences between the observed groups were supplementing the alternative hypotheses. Null hypotheses: There are no statistically significant dependencies between the chosen factors (size/age) and the chosen aspects of the funding risk.

Null hypothesis: \( \pi_1 = \pi_2 \) so \( \pi_1 = \pi_2 = 0 \). Alternative hypothesis: \( \pi_1 = \pi_2 \neq 0 \). Five alternative working hypotheses were defined as follows:

H1: There is a statistically significant dependence between the size of the company and/or the age of the owner and the opinion that the importance of funding risk has increased over the past three years. We suppose that smaller firms perceive the influence of the funding risk more intensively in comparison to the larger enterprises, and younger owners in comparison to the older ones.

H2: The size of the company and/or the age of the owner has a statistically significant impact on the opinion that the banks accept the needs of the companies and try to do their best to meet their expectations. We suppose that the banks present a better approach to the larger companies, and to the older owners.

H3: There is a statistically significant dependence between the size of the company and/or the age of the owner and frequency of the rejection of the bank loans. We assume that banks reject the loan applications of smaller firms and of the younger owners more often.

H4: The size of the company and/or the age of the owner has a statistically significant impact on the reasons for the rejection of a loan application. We assume smaller companies, and/or the companies owned by the younger owners more frequently experience the problems with the short history of the company and an insufficiency of the collateral.

H5: The size of the company and/or the age of the owner has a statistically significant impact on the expression of the opinion that it is difficult to meet loan conditions, and the opinion that SMEs in the other EU countries have better loan conditions than SMEs in Slovakia.

The results of the research. The third chapter of the paper is divided into 5 parts, where each one is focused on the rejection of confirmation of the selected alternative hypothesis in relation to the chosen factors. The hypotheses, related to the first analyzed factor – the age of the owner – are marked by the letter a, and the hypotheses, related to the second analyzed factor – the size of the company – is marked by the letter b. Also, the working hypothesis is marked as H1a, H1b, H2a, etc......H5b. An impact of the selected factors on the change of importance of the funding risk. At first, we have investigated the impact
of the size of the company and the age of the owner on the funding risk of the company, specifically on the opinion that the importance of funding risk has increased over the past three years. The results presented in Table 2 confirm the existence of a statistically significant dependence between the age of the owner and the perception of the funding risk of Slovak companies. According to the findings, older entrepreneurs are more concerned about the funding risk than their younger colleagues. The differences were identified between the group of entrepreneurs younger than 35 years (47.24 % of them agree with the opinion that the importance of the funding risk has increased over the past three years) and older than 35 years (64 % of them agreed with this statement).

Table 2 – The age of the owner and the importance of the funding risk*

<table>
<thead>
<tr>
<th>An importance of funding risk has increased over the past three years</th>
<th>Agree</th>
<th>Disagree</th>
<th>Neutral position</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>absolute values and chi-square subtotals</td>
<td>%</td>
<td>absolute values and chi-square subtotals</td>
<td>%</td>
</tr>
<tr>
<td>To 35 years</td>
<td>47.24</td>
<td>77 (93.78) (3.00)</td>
<td>11.66</td>
<td>19 (19.72) (0.03)</td>
</tr>
<tr>
<td>36–45 years</td>
<td>66.67</td>
<td>76 (65.59) (1.65)</td>
<td>15.79</td>
<td>18 (13.79) (1.28)</td>
</tr>
<tr>
<td>46 and more</td>
<td>61.49</td>
<td>99 (92.63) (0.44)</td>
<td>9.49</td>
<td>16 (19.48) (0.62)</td>
</tr>
<tr>
<td>Total</td>
<td>-</td>
<td>252</td>
<td>-</td>
<td>53</td>
</tr>
</tbody>
</table>

*Grand total in chi-square calculation

Sources: own processing

The results of the calculations (Table 2) confirm our assumption of the statistically significant dependence between the age of the owner and the perception of the funding risk of the Slovak companies. The value of chi-square statistic \( \chi^2 = 19.5571 \) is significant at \( p < 0.01 \). This fact allows us to confirm our alternative working hypothesis H1a with the level of probability of 99 %. The second part (b) of the hypothesis H1 was devoted to the impact of the size of the company on the opinion that the importance of funding risk has increased over the past three years. We supposed that smaller firms perceive the influence of the funding risk more intensively in comparison to the larger enterprises. We have found a statistically significant dependence between the size of the company and the expressed opinion in relation to the defined statement, which confirms that smaller companies do perceive the funding risk more intensively than larger companies. Our evidence shows that while 58.67 % of the representatives of the companies from the SMEs segment perceives that the importance of the funding risk has increased over the past three years, only 55.56% of the representatives of the large companies agree with the statement. It is interesting, that the lowest level of interest in relation to the funding risk was presented by the representatives of the micro-enterprises, the segment that should be the most vulnerable in case of funding. We consider that the fact that micro companies do not perceive the importance of the funding risk so intensely can be reasoned by a lower level of usage of bank loans for their financing.

The results of the calculations presented in Table 3 allow us to confirm the hypothesis H1b about the statistically significant dependence between the size of the company and the perception of the funding risk of the Slovak companies at the level of probability of 99 %. The value of chi-square statistic \( \chi^2 = 21.7351 \) is 0.05 with 6 df. and the p-value of 0.001352 indicates that the result is significant at \( p < 0.01 \).
Funding Risk Perception by Slovak SMEs: Impact of Age and Size of the Company

Table 3 – The size of the company and the importance of the funding risk

<table>
<thead>
<tr>
<th>An importance of funding risk has increased over the past three years</th>
<th>Agree</th>
<th>Disagree</th>
<th>Neutral position</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Micro</td>
<td>56.79</td>
<td>163 (15.12) [0.03]</td>
<td>7.67</td>
<td>22 (4.67) [0.12]</td>
</tr>
<tr>
<td>Small</td>
<td>60.00</td>
<td>57 (14.66) [0.10]</td>
<td>18.95</td>
<td>18 (11.50) [0.68]</td>
</tr>
<tr>
<td>Medium</td>
<td>58.62</td>
<td>17 (16.68) [0.01]</td>
<td>24.14</td>
<td>7 (3.51) [0.47]</td>
</tr>
<tr>
<td>Large</td>
<td>55.56</td>
<td>15 (15.53) [0.02]</td>
<td>22.22</td>
<td>6 (3.27) [0.29]</td>
</tr>
<tr>
<td>Total</td>
<td>56.49</td>
<td>252</td>
<td>46 (53) [0.02]</td>
<td>133</td>
</tr>
</tbody>
</table>

Source: own processing

An impact of the selected factors on the perception of the relationships with the banks. Our research results do not bring any statistically significant evidence about the existence of the dependency between the age of the owner and the expression of the opinion that the banks accept the needs of the companies and try to meet their expectations. General results show that most of the business owners regardless of their age are quite sceptic about the effort of the banks to accept their needs. Only approximately one-third of the respondents (30.67 – 38.60 %) in each age category agreed with the presented statement, while almost half of them (45.96 – 48.25 %) disagreed with it. Middle-aged entrepreneurs (36–45-year-old) are the most optimistic. Younger and older groups were more pessimistic. The results of the research presented in Table 4 do not confirm the assumption from the hypothesis H2a about the statistically significant dependence between the age of the owner and the opinion that banks accept the needs of the companies. The value of chi-square statistic $\chi^2 = 5.5064 = \chi^2_{0.05} = 5.5064 = \chi^2_{0.05}$ with 4 dfg. and the p-value of 0.239164 allows us to reject our working alternative hypothesis H2a.

Table 4 – The age of the owner and the relationships with the banks

<table>
<thead>
<tr>
<th>Banks accept the needs of the entrepreneurs and try to meet them</th>
<th>Agree</th>
<th>Disagree</th>
<th>Neutral position</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>absolute values and chi-square subtotals</td>
<td>%</td>
<td>absolute values and chi-square subtotals</td>
<td>%</td>
</tr>
<tr>
<td>To 35 years</td>
<td>30.67</td>
<td>50 (53.59) [0.24]</td>
<td>46.63</td>
<td>76 (76.29) [0.00]</td>
</tr>
<tr>
<td>36 – 45 years</td>
<td>38.60</td>
<td>44 (37.48) [1.13]</td>
<td>48.25</td>
<td>55 (53.36) [0.05]</td>
</tr>
<tr>
<td>46 and more</td>
<td>31.06</td>
<td>50 (52.93) [0.16]</td>
<td>45.96</td>
<td>74 (75.35) [0.02]</td>
</tr>
<tr>
<td>Total</td>
<td>-</td>
<td>144</td>
<td>-</td>
<td>205</td>
</tr>
</tbody>
</table>

Source: own processing

The next partial aim was to evaluate the impact of the size of the company. The research team assumed that with the increase of the size of the company the frequency of the occurrence of the consent
with the statement that banks accept the needs of the companies and try do their best to meet their expectations will increase. The results, presented in Figure 1 confirm this assumption, while only 26.83 % of the micro companies agreed with the statement, in case of the large companies the consent was presented by 62.96 % of them, and the share was growing correspondingly with the growing size of the companies.

![Figure 1 – Reactions on the statement that banks accept the needs of the companies in %](image)

The results of the calculations presented in Table 5 allow us to confirm the hypothesis H2b, stating that the size of the company has a statistically significant impact on the opinion that the banks accept the needs of the companies and try to do their best to meet their expectations at the level of probability of 99 %.

<table>
<thead>
<tr>
<th>Banks accept the needs of the entrepreneurs and try to meet them</th>
<th>Agree</th>
<th>Disagree</th>
<th>Neutral position</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>% absolute values and chi-square subtotals</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Micro</td>
<td>26.83</td>
<td>50.87</td>
<td>22.30</td>
<td>100</td>
</tr>
<tr>
<td>Small</td>
<td>37.89</td>
<td>48.42</td>
<td>11.11</td>
<td>100</td>
</tr>
<tr>
<td>Medium</td>
<td>48.28</td>
<td>34.46</td>
<td>17.24</td>
<td>100</td>
</tr>
<tr>
<td>Large</td>
<td>62.96</td>
<td>25.93</td>
<td>11.11</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

* Grand total in chi-square calculation

Sources: own processing

The value of chi-square statistic \( \chi^2 = 25.9681 = \chi^2 0.01 \) with 6 dfg. and the p-value of 0.000226 indicates that the result is significant at \( p < 0.01 \). An impact of the selected factors on the frequency of
bank loans rejection. At this part of the research, our team focused on the impact of the age of the owner on the frequency of bank loans rejection, and a confirmation or a rejection of the hypothesis H3a. The results, presented in Table 6, confirm the existence of the statistically significant dependence between the age of the owner and a rejection of bank loan.

Table 6 – The age of the owner and the frequency of bank loans rejection

<table>
<thead>
<tr>
<th>The bank rejected our loan application within the past 5 years</th>
<th>Yes</th>
<th></th>
<th>Yes</th>
<th></th>
<th>Yes</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>% absolute values and chi-square subtotals</td>
<td>% absolute values and chi-square subtotals</td>
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<td>% absolute values and chi-square subtotals</td>
<td>% absolute values and chi-square subtotals</td>
<td>% absolute values and chi-square subtotals</td>
</tr>
<tr>
<td>To 35 years</td>
<td>30.06</td>
<td>50 (53.59) [0.24]</td>
<td>69.94</td>
<td>76 (76.29) [0.00]</td>
<td>100.00</td>
<td>163</td>
</tr>
<tr>
<td>36 - 45 years</td>
<td>39.47</td>
<td>44 (37.48) [1.13]</td>
<td>60.53</td>
<td>55 (53.36) [0.05]</td>
<td>100.00</td>
<td>114</td>
</tr>
<tr>
<td>46 and more</td>
<td>24.84</td>
<td>50 (52.93) [0.16]</td>
<td>75.16</td>
<td>74 (75.35) [0.02]</td>
<td>100.00</td>
<td>161</td>
</tr>
<tr>
<td>Total</td>
<td>-</td>
<td>144</td>
<td>-</td>
<td>205</td>
<td>100,00</td>
<td>438</td>
</tr>
</tbody>
</table>

Sources: own processing

Entrepreneurs of the age between 36 and 45 declared the highest rejection rate of the loan applications (39.47 %) in comparison with the other two groups of entrepreneurs (younger than 35 and older than 46). The reason for this may be a higher range of usage of bank financing in case of this group of entrepreneurs. The results of the calculations presented in Table 6 confirm our assumption about the existence of a statistically significant dependence between the age of the owner and the frequency of bank loans rejection. The value of chi-square statistic $x^2 = 6.7612 = x^2 0.05$ with 2 dgf. and the $p$-value of 0.034027 indicates that the result is statistically significant at $p < 0.05$. This fact allows us to confirm our alternative working hypothesis H3a at the level of probability of 95 %.

While investigating the impact of the size of the company on the frequency of bank loans rejection during the last 5 years we found that despite the seeming existence of such a dependence, application of the statistical methods discourages this assumption. In spite of the fact, that large companies declared the highest rate of bank loans rejection, the value of chi-square statistic (Table 7) $x^2 = 2.1131 = x^2 0.05$ with 3 dgf. and the $p$-value is 0.54971 allow us to reject an alternative working hypothesis H3b.

Table 7 – The size of the company and the frequency of bank loans rejection

<table>
<thead>
<tr>
<th>The bank rejected our loan application within the past 5 years</th>
<th>Yes</th>
<th></th>
<th>Yes</th>
<th></th>
<th>Yes</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>% absolute values and chi-square subtotals</td>
<td>% absolute values and chi-square subtotals</td>
<td>% absolute values and chi-square subtotals</td>
<td>% absolute values and chi-square subtotals</td>
<td>% absolute values and chi-square subtotals</td>
<td>% absolute values and chi-square subtotals</td>
<td>% absolute values and chi-square subtotals</td>
</tr>
<tr>
<td>Micro</td>
<td>31.01</td>
<td>89 (87.80) [0.02]</td>
<td>68.99</td>
<td>198 (199.20) [0.01]</td>
<td>100.00</td>
<td>287</td>
</tr>
<tr>
<td>Small</td>
<td>28.42</td>
<td>27 (29.06) [0.15]</td>
<td>71.58</td>
<td>68 (65.94) [0.06]</td>
<td>100.00</td>
<td>95</td>
</tr>
<tr>
<td>Medium</td>
<td>24.14</td>
<td>7 (8.87) [0.40]</td>
<td>75.86</td>
<td>22 (20.13) [0.17]</td>
<td>100.00</td>
<td>29</td>
</tr>
<tr>
<td>Large</td>
<td>40.74</td>
<td>11 (8.26) [0.91]</td>
<td>59.26</td>
<td>16 (18.74) [0.40]</td>
<td>100.00</td>
<td>27</td>
</tr>
<tr>
<td>Total</td>
<td>-</td>
<td>144</td>
<td>-</td>
<td>205</td>
<td>100,00</td>
<td>438</td>
</tr>
</tbody>
</table>

Sources: own processing

Hypothesis H3 was partially confirmed. The statistically significant impact of the selected factors on the frequency of bank loans rejection was confirmed only in case of the age of the owner, but not in case of the size of the company. We can declare that a credit rejection is most common in case of younger
business owners, but is not typical for the smaller companies.

An impact of the selected factors on the reasons for a loan application rejection. A total of 144 companies in our research declared their experience with the rejection of bank loan application. There can be many reasons for the rejection of loan applications. We assumed that in case of the youngest entrepreneurs the most frequent reason for the rejection would be a short company history or a problem with lack of collateral.

The results, presented in Figure 2 confirmed our assumption. In case of the entrepreneurs up to 35 years old (the youngest respondents), the most frequent reason of the rejection was a short history of the company and the second most common reason was the lack of collateral. In the group of entrepreneurs aged between 36 and 45 years the most frequent reason was related to the negative values of the financial indicators, and in case of the oldest entrepreneurs the most often reasons of the rejection of the loan application were the lack of collateral, poor business plan and negative values of the financial indicators. The results of the research confirm the existence of the statistically significant dependence between the age of the owner and the reasons for the rejection of bank loans application. The value of chi-square statistic $\chi^2 = 15.2197 = \chi^2 0.05$ with 6 df, and the p-value of 0.018615 indicates that the result is statistically significant at $p < 0.05$. This fact allows us to confirm our alternative working hypothesis H4a at the level of probability of 95 %.

Figure 2 – Reasons for the rejection of bank loan application for the different age groups in %

Sources: own processing

The second part of the hypothesis H4b was devoted to the impact of the size of the company on the reasons of the rejection of bank loans application. Application of the research methodology brought several interesting findings.

We found that the reasons for the rejection of bank loans application were different for the companies in each size group (Figure 3). In the group of micro companies, the most frequent reasons were the absence of the collateral (36.63 %) and a short history of a company (32.67 %). In the group of small companies, the most frequent reason of the rejection was related to the negative values of the financial indicators (35.90 %), a lack of collateral and a short history (both 23.08 %). Middle-sized companies pointed out a lack of collateral (38.46 %), negative values of the financial indicators (30.77 %), and large
companies mentioned negative values of the financial indicators (52.38 %) and inadequate business plan (19.05 %) and the most frequent reasons for the rejection of their loan applications.

Figure 3 – Reasons for the rejection of bank loan application for the companies of the different size in %

Sources: own processing

After the summarization of the results, we have specified the most significant reasons for the rejection of bank loans application: SMEs – lack of collateral and a short company history, large companies – negative values of the financial indicators, inadequate business plan. The value of chi-square statistic $\chi^2 = 17.9159 = 0.05$ with 9 df, and the p-value of 0.036162 confirmed the statistical significance of the results at $p < 0.05$. This fact allows us to confirm alternative working hypothesis H4b at the level of probability of 95 %.

The results of our research confirm the evidence of the other authors, who declared a collateral as one of the most often problems for the obtaining of a bank loan in case of SMEs (Irwin and Scot 2010, Seo, 2013 and Majková 2008).

An impact of the selected factors on the reasons for a loan application rejection on the other aspects of the funding risk. In the last part of this paper we bring the results of the research whether the size of the company and/or the age of the owner has a statistically significant impact on the expression of the opinion that it is difficult to meet loan conditions, and the opinion that SMEs in the other EU countries have better loan conditions than SMEs in Slovakia.

We found no statistically significant evidence of the significant impact of the age of the owner on the other aspects of the funding risk. The results of the research, presented in Table 8 do not bring a statistically significant evidence that the age of the owner has an impact on these two other aspects of the funding risk of SMEs in Slovakia. In both cases were the p-values were $> 0.05$. An alternative working hypotheses H5a was rejected.

The opposite results were found in case of the size of the company, while the results of the calculations by Pearson’s chi-square indicate that the size of the company is a relevant factor. According to the percentage evaluation, almost two-thirds of the respondents (63.51 %) agree with the opinion that it is difficult to meet loan conditions in Slovakia. It means that Slovak companies perceive the loan conditions as difficult to fulfill. It is an interesting finding that nearly a half of the respondents (46.13 %) agree with the opinion that the companies in the other EU countries do have a better/easier loan conditions in comparison...
A. Kljucnikov, M. S. Majkova. Funding Risk Perception by Slovak SMEs: Impact of Age and Size of the Company

to Slovakia. On the other hand, we bring a statistical evidence about the impact of the size of the company in relation to the other aspects of the funding risk. Since the p-values in both cases are lower than 0.05, we can confirm an alternative working hypotheses H5b. Our results confirm the existence of a statistically significant dependence between the size of the company and the opinion that it is difficult to meet the loan conditions, and also between the size of the company and the opinion that SMEs in the other EU countries do have better loan conditions.

Discussion. The third part of this paper presented the results of the research on the impact of the specific factors on several aspects of the funding risk in case of SMEs in Slovakia. These results bring the evidence that the size of the company is a factor with a stronger impact on the funding risk than the age of the entrepreneur. The significant impact of the size of the company was confirmed in five cases out of six observations, and the impact of the age of the owner was confirmed only in three cases.

Table 8 – Summary of the results of the hypotheses H1 – H5

<table>
<thead>
<tr>
<th>Hypotheses/questions</th>
<th>Impact of the age</th>
<th></th>
<th>Impact of the size</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Chi-square</td>
<td>p-value</td>
<td>Chi-square</td>
<td>p-value</td>
</tr>
<tr>
<td>H1: The importance of funding risk has increased over the past three years</td>
<td>19.5571</td>
<td>0.006111&lt; 0.01</td>
<td>21.7351</td>
<td>0.001352&lt; 0.01</td>
</tr>
<tr>
<td>H2: The banks accept the needs of the companies and try to meet their expectations</td>
<td>5.5064</td>
<td>0.239164</td>
<td>25.9681</td>
<td>0.000226&lt; 0.01</td>
</tr>
<tr>
<td>H3: Frequency of the rejection of the bank loans</td>
<td>6.7612</td>
<td>0.034027&lt; 0.05</td>
<td>2.1131</td>
<td>0.54971</td>
</tr>
<tr>
<td>H4: Reasons for the rejection of a loan application</td>
<td>15.2197</td>
<td>0.018615&lt; 0.05</td>
<td>17.9159</td>
<td>0.036162&lt; 0.05</td>
</tr>
<tr>
<td>H5a: It is difficult to meet loan conditions</td>
<td>5.9892</td>
<td>0.199958</td>
<td>16.6106</td>
<td>0.010826&lt; 0.05</td>
</tr>
<tr>
<td>H5b: SMEs in the other EU countries have better loan conditions than SMEs in Slovakia.</td>
<td>6.9037</td>
<td>0.141065</td>
<td>12.8419</td>
<td>0.045617&lt; 0.05</td>
</tr>
</tbody>
</table>

Sources: own processing

In a majority of cases, our results confirmed that the firm’s size has a significant impact on the perception of the funding risk, resp. that smaller companies perceive the funding risk more intensively than the larger ones. This finding in conformal with the results of the other authors, including Jakubec et al. (2012) and Sobeková (2011). Dong and Men (2014) informed that smaller and young companies face more financing constraints. The availability of credit information and the bank concentration ratio have a significant impact on SMEs financing. Cheng, Tang and Shi (2012) and Majková (2008) presented a weak capital power and a credit degree as the biggest problems for SMEs financing. Rostamkalaei and Freel (2015), Oliveira and Fortunato (2006), Bottazzi et al. (2014), Bougheras et al. (2006) considered the firm’s size for a relevant factor affecting the funding risk of a company.

The impact of the age on the funding risk is not so obvious as in the case of the firm’s size, because its impact was confirmed only partially. The studies of the other foreign authors are also contradictory. Arenius and Minniti (2005), Bonte et al. (2007), Brunow and Hirte (2006) and Levesque and Minniti (2011) brought the evidence that the age of the owner is a significant factor, that is affecting the business. The data from our research state that older entrepreneurs feel themselves more threatened in case of the funding risk than their younger colleagues. Neuberger and Räthke-Döppner (2014) brought an interesting evidence, that in case of Germany young entrepreneurs are more likely to pay higher interest rates because their businesses are smaller and their ability to pay at the time is lower than in case of the older
entrepreneurs due to the liquidity reasons. This fact could also indicate that younger entrepreneurs should feel more threatened by the funding risk than the older ones. Oliveira and Fortunato (2006) stated that a credit rejection or the higher interest rates are most common in case of smaller firms with the younger owners. Werner and Faulenbach (2008) confirmed that age has an impact on the funding risk, resp. the young entrepreneurs face the funding risk more frequently than their older colleagues. Bottazzi et al. (2014) and Bougheas et al. (2006) bring the evidence that younger and smaller companies face the funding credit risk more intensively and that they have fewer options for the financing of their companies than the firms with the older owners. Unlike all the presented studies, our results show that the companies with the younger owners (mostly small companies with a short period of existence) feel more comfortable and are significantly more self-confident in case of the potentially negative influence of the funding risk on their companies than their older colleagues.

Our results are also contrary to the study realized among Slovenian businesses by Slavec (2014), who stated that the age of the entrepreneur has no significant impact on bank loans or trade credits, while such factor as the level of education does play a significant role in case of the bank loans.

The results of our research clearly indicate that smaller companies are experiencing significantly more problems with the obtaining of bank financing, are facing the more intensive impact of the funding risk, and perceive the loan criteria to be quite difficult to fulfil. Many authors declare that SMEs are a backbone of the market economy, resp. that they are one of the most important components of all world economies (Sobeková 2011, Karpak and Topcu 2010, Badulescu 2010, Henderson and Weiler 2010, Bhaird 2010, etc.). The results of this research should warn the governmental officials of Slovakia, and make them think about setting up the specific forms of support of this sector of the economy to achieve a sustainable economic growth. The quotation “think in small” is very important. Slovakia needs to prepare more efficient supporting tools to help SMEs to overcome the difficulties related to their financing, which is the main engine of their growth. Effective state support of small or micro companies may bring a very good result. We see the solution in the supporting schemes with the accent on microfinance (5 000 – 15 000 eur) or guarantee schemes with the participation of the private sector. The key attribute of this too is low bureaucracy, the online agreement process and a small interest rate. Next was how to support small and young companies is venture capital. It is a special type of finance for innovative companies. But in this field is still very poor information and state support. The government can support this type of project through venture capital funds and business angel nets.

**Conclusion.** The aim of the paper was to investigate the impact of a size of the company and an age of the owner on the perception of the funding risk in the segment of small and medium-sized enterprises in Slovakia in response to the restraints in their access to credit finance and to specify the importance of these factors in relation to the selected aspects of the funding risk. The data were analyzed by Pearson’s chi-square statistics, which allowed to confirm the existence of the statistically significant dependencies between the chosen factors and the perception of the funding risk.

We have found that smaller companies do perceive the funding risk more intensively than larger companies. Entrepreneurs of the age between 36 and 45 declared the highest rejection rate of the loan applications. The impact of the size of the company on the frequency of bank loans rejection during the last 5 years was not statistically significantly confirmed. The statistically significant impact of the selected factors on the frequency of bank loans rejection was confirmed only in case of the age of the owner, but not in case of the size of the company. We can declare that a credit rejection is most common in case of younger business owners, but is not typical for the smaller companies.

In the group of entrepreneurs aged between 36 and 45 years the most frequent reason was related to the negative values of the financial indicators, and in case of the oldest entrepreneurs the most often reasons of the rejection of the loan application were the lack of collateral, poor business plan and negative values of the financial indicators. The results of the research confirm the existence of the statistically
significant dependence between the age of the owner and the size of the company and the reasons for the rejection of bank loans application. General results show that most of the business owners regardless of their age are quite a sceptic about the effort of the banks to accept their needs, but the bigger the company is, the lower is the level of consent with this statement.

We would like to expand the focus of our further research on investigating the impact of the other relevant factors influencing all aspects of the financial risk of the company in the SME segment in the countries of the V4. The research team is aware of a certain degree of limitation of research results, especially in terms of the number of respondents, forms of the research implementation, and geographic targeting only on Slovak territory, and plans to remove them in the future by expanding the research to a larger number of Central European countries.

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References


Доступ до фінансування, як відсутність, розміром середніх фінансових підприємств, які є низькими лише для малих компаній. На відмови відмови за головними причинами відмов від малих компаній зазначено на фінансових рисках, які характерні для молодих підприємств. Авторами встановлено, що менш за риски відмови від малих компаній є низькими. На відмови, що виникають залежно від відмов вручну від банківських кредитів лише за фактором – вік власника. Так, підприємці віком від 36 до 45 років отримують найбільшу кількість відмов у отриманні кредиту. Автори вважають, що молоді підприємці краще самозавершенню та рішучіші у відмову, аніж старші. Результати дослідження також підтверджують наявність статистично значущої залежності між обсягами факторами та причинами відмов у отриманні банківських кредитів. У роботі підтверджено гіпотезу, що відмови у кредитуванні найчастіше зустрічаються серед молодих підприємців, але це не є характерним для невеликих компаній. Для підприємств віком від 36 до 45 років головною причиною відмов кредитування є негативне значення основних фінансових показників. При цьому для іншої категорії підприємців (старші за віком) головними причинами відмов у кредитуванні стали: відсутність застави, низька якість бізнес-плану та негативне значення основних фінансових показників.

Ключові слова: кредитний ризик, малі та середні підприємства, вік, розмір, кредитне фінансування, банківське фінансування, зовнішні фінанси, доступ до фінансування.

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