

## CREDIT OR CAPITAL?

### *An empirical survey of the financing decisions of micro, small and medium-sized enterprises in Hungary*

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#### **Abstract**

One of the most serious problems faced by micro, small and medium-sized enterprises in Hungary is how to acquire the financial resources necessary for their operation and growth. Bank loans, the classic channel of external financing available to SMEs, have dried up due to the economic crisis, increasing the significance of alternative options such as private capital investment. We examined the choices of micro, small and medium-sized enterprises in Hungary between credit and capital-based financing using binary logistic regression. Our results show that SMEs operating with higher leverage are more likely to lean towards raising external capital, while enterprises struggling with financial difficulties prefer to take out loans. The empirical research also confirmed the effect of adverse selection, where companies with more favourable prospects are less inclined to bring in new co-owners.

*JEL codes:* D22, G21, G24

*Keywords:* SME financing, capital investment, credit, venture capital

#### **1 INTRODUCTION**

Based on the 2013 survey by the European Commission (EC) on *Access to Finance* for SMEs<sup>1</sup>, access to financial resources represents the second most serious problem for the European Union's micro, small and medium-sized enterprises, after access to consumers (EC, 2013). Bank financing is strongly dominant in the continental financial system, as companies think primarily in terms of bank credit products besides their own (generated) internal resources and subsidies. At the same time, the inclination of European banks to take risks has considerably decreased in the wake of the crisis. As a consequence, only SMEs possessing a viable business plan, predictable operations and a stable customer base have been

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<sup>1</sup> The collective term "SME" is used in the study to embrace micro, small and medium-sized enterprises.

able to access loans, and even then only under much less favourable conditions than before. In addition, besides the shrinking supply of credit, the appeal of debt financing, with the obligation to make fixed repayments, has also faded on the demand side due to uncertain market prospects. The drying up of traditional channels of funding has enhanced the importance of alternative options such as equity-based financing.

There are no rules of thumb when it comes to choosing whether to take out a loan or raise capital. Generally it can be said that credit financing is more expedient for companies that generate a stable cash flow and hold the appropriate (negotiable) guarantees. In contrast, involving capital may prove more advantageous for companies with a strongly volatile cash flow, which are in a growth phase, which are not (yet) realising a profit, or which do not possess sufficient (material) collateral.

Negotiating with creditors is typically quicker and simpler (partly due to the established routine of bank practice, partly because of the guarantees required behind loans), while the process of reaching agreement with capital investors can be more lengthy and costly due to the need for thorough due diligence. The possibility of accounting interest payments as costs represents a further (tax) advantage in the event of taking out a loan.

The greatest advantage of credit financing is at once its most serious drawback: over and above the predetermined (and regular) repayment obligations stipulated in a loan agreement, the creditor providing the funding has no further claim (on the remaining portion of profit), and does not interfere in the management of the company. However, it does require that the given company is able to generate income to cover its obligations, meaning that its basic activity must remain continuously profitable.

Besides expectations of high returns, companies generally regard interference by new co-owners in the management of the enterprise as one of the most serious drawbacks of capital financing. New owners may lay claim to part of the generated profits proportionate with their ownership share, potentially reducing the amount of reinvested earnings. Depending on their (exit) strategy, meanwhile, they may prefer shorter-term financial interests over longer-term, professionally well-grounded decisions. As co-owners, external capital investors may also access all important business and technological information. At the same time, with the right choice of investors, the original owners may gain numerous advantages beyond the simple acquisition of funds (e.g. professional business advice, a network of contacts). Besides this, raising fresh capital offers greater flexibility, does not require the ability to immediately generate stable, regular profit from the time of the capital injection and does not tie down the company's assets, while a more stable capital position also improves the firm's credit standing. The latter

can prove a key aspect: of the two types of financing – with proper adherence to the company's current needs and goals – powerful synergies can be gained.

In our analysis, we are seeking to reveal the factors behind the decisions of SMEs in Hungary to choose between credit or capital-based financing. In this article we first examine SMEs' financing preferences from a theoretical point of view. Subsequently, based on the results of company surveys by the European Commission (*Access to Finance*) and the Hungarian Development Bank (MFB INDICATOR, spring 2013), we analyse the financing decisions of micro, small and medium-sized enterprises in Hungary. Finally, we examine the choice between credit or capital-based financing with the aid of a logistic regression model. We conclude our study with a summary of the results.

## 2. THEORIES OF CORPORATE CAPITAL STRUCTURE

We begin our examination of the financing preferences of micro, small and medium-sized enterprises, and within this the factors determining the decision to choose between credit or capital financing, with a brief review of the specialist literature dealing with capital structure.

Based on the *irrelevance theory* of Miller and Modigliani (1958), who initiated thinking about the capital structure of enterprises, the value of a company in the case of perfect markets is independent of the choice of capital structure. According to the *trade-off theory*, taking out credit is more favourable than equity-based financing due to the so-called tax shield<sup>2</sup> (De Angelo–Masulis, 1980), with companies striving to evolve an optimal leverage level accordingly (Myers, 2001). However, the trade-off theory does not explain, among other things, deviations within the sector, while from the point of view of SMEs' financing decisions it is less relevant because in this case the favourable effect of the tax shield is typically exceeded by the consequences of financial difficulties (Mac an Bhaird, 2010).

The *pecking order theory* holds that there is a prevailing preference in companies' financing decisions: companies finance their investments primarily from internal funds, while among external means of financing they proceed from the less risky (e.g. bond issues, loans) in the direction of forms of funding that represent a greater risk (raising external capital). Based on the pecking order theory, companies do not have a preferred (static) optimal leverage level. According to Zoppa and McMahon (2002), the financing decisions of SMEs are adequately explained

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<sup>2</sup> Interest paid on corporate loans reduces the tax base, so that with a corporate gains tax rate the proportion of the loan cost is effectively financed by the state, meaning that the government renounces this much tax income in the case of corporate borrowing (BREALEY–MYERS, 1999).

using a modified pecking order theory: here, micro, small and medium-sized enterprises rely much more on internal funds than large companies, and when these funds are exhausted they take advantage of short and then long-term debt financing, while external capital is brought in only as the very last resort, only after exploring the option of a capital injection from existing owners.

*Baeyens and Manigart (2006)* observed that capital financing may be preferred over loans primarily by companies whose credit capacity is limited. For this reason, the financing of high-tech start-up companies with rapid growth potential – and thus typically still generating negative cash flow at the time of the capital injection – is interpreted according to a distinctive theory dubbed the *high technology pecking order hypothesis* (*Mac an Bhaird, 2010*). Here, financing from internal funds is followed in the pecking order by external capital, while debt financing only becomes a genuine alternative once companies become credit-worthy (their credit capacity increases) on the basis of classic banking operations.<sup>3</sup>

A company's decision to choose credit or capital-based financing may be strongly influenced by the higher cost of bringing in new capital, which is attributable to information asymmetry. The owners of SMEs hold a significant information advantage<sup>4</sup> over both creditors and potential external investors; however, verifying the fulfilment of loan agreements entails lower costs than the *due diligence* carried out in the case of capital investments, coupled with constant supervision and monitoring during the investment period.

According to *Kosztópulosz (2005)*, an adverse selection effect may also come into play in companies' decisions. Owners who display a lack of confidence – or uncertainty – about the company's future, or who expect only a modest profit, tend to be more inclined to share this expected modest profit than owners at companies with stable growth prospects, who tend to opt for fixed repayment instead.

The order of preference in terms of external sources of financing is not necessarily constant, and may vary at individual points of the company's life curve (*Ang, 1991*). Younger firms tend to have limited internal funds at their disposal and their

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3 CARPENTER and PETERSEN (2002) found that prior to a stock market launch (IPO) high-tech companies operate with comparatively low leverage, while their outstanding amount of credit rises significantly following a stock market listing. From this they drew the conclusion that these companies are particularly afflicted by borrowing constraints, and their access to loans only becomes easier after the information asymmetry existing in their case decreases as they acquire a stock market presence.

4 Besides uncertainty about a company's value and growth prospects, FORSAITH and McMAHON (2002) found that information asymmetry is increased by a lack of transparency in SMEs' financing. It is often difficult to clearly separate the assets of the company from those of the owner-manager, as well as loans between owners. In addition, it can also prove problematic to evaluate quasi-loans extended by family members or friends.

credit capacity is restricted; consequently, they may prove more likely to turn to external capital investors in order to finance their growth plans. In the case of start-up enterprises, however, the external investor must effectively base their decisions only on the entrepreneur and the skills and knowledge of the management team. As the company's *track record* lengthens, available historical financial and business data reduce the information advantage of "insiders" (managers, current owners), so that the firm can gain easier and cheaper access to financing (Diamond, 1989). Baeyens and Manigart (2006) found that changes in companies' preferences over time may depend on how their financing situation develops, and on this basis companies struggling with financial difficulties may become more open to raising external capital. In addition, the external (financing) environment may also have an influence on the attitude of companies to the various types of funding. Whenever classic financing channels (e.g. bank loans) dry up as a consequence of macroeconomic or financial shocks, the role of alternative financial resources may increase in value as a result.

An important aspect in the decision between credit and capital-based financing is the readiness of company owners or management to take risks, and how much they insist on controls. The majority of owners of SMEs are fundamentally risk-averse, which in many cases is partly attributable to the fact that their personal assets are tied up in the company, for example as collateral used to take out a loan. Cressy and Olofsson (1997) expressed the view that some entrepreneurs would rather sell the entire company than divide their share in ownership. In their opinion, companies which still decide to go ahead and bring in new co-owners are those that are fully aware of the additional concomitant advantages beyond access to financing (expertise, market connections, etc).

Finally, another important factor influencing the decision between credit and capital financing is the low level of familiarity with the latter, which is an additional cause of entrepreneurs' aversion to capital investors. Forsaith and McMahon (2002) found that SMEs are more familiar with credit-type products, of which they have a broader range at their disposal, while company managers are also more at home dealing with financial institutions with which they have already established personal or business connections. This effect is more strongly prevalent on markets such as Hungary, where – due to the predominance of bank financing and the hitherto low number and volume of capital investments<sup>5</sup> – only a small proportion of entrepreneurs are aware of the details of equity-based financing, or capable of weighing its benefits and drawbacks. Darazsacz

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<sup>5</sup> Based on data of the Hungarian Private Equity and Venture Capital Association (HVCA), a total of 416 investments were realised in Hungary between 1989 and 2010, which – according to the statistics of the European Private Equity and Venture Capital Association (EVCA) – was followed by 37 investments in 2011, 46 in 2012, and 41 in 2013.

and Szlatárovics (2009) quoted the results of market research by Garantíqa Zrt. in this regard, which showed that companies involved in the study were not familiar with the concept of venture capital at all, attached fundamentally negative associations to the term (such as “usury” or “swindling of companies”),<sup>6</sup> and – even once the concept had been explained to them – took the view that it is a solution only available to large companies. Baeyens and Manigart (2006) additionally observed that owner-managers of SMEs are not equipped to talk with investors, and consequently the negative feeling that they are “getting the worst” of negotiations can intensify.

As another serious barrier in Hungary, only a modest proportion of SMEs are properly prepared to draw in venture capital, or represent an attractive target for potential investors. Based on research by Szerb (2009), a mere 0.25% of SMEs in Hungary are equipped to accept venture capital. Only so-called gazelle companies – with high growth potential over a prolonged period (of an annual average rate of at least 15–30% over the 6–8-year time horizon of a capital investment) – are capable of meeting investors’ high yield expectations. An investigation by Békés and Muraközy (2011) showed that in the period 2005–2008, some 9.3% of companies employing between five and 250 people belonged in this category in Hungary. Based on a study by Futó and Szobonya (2012), besides firms with high growth potential, there is greater openness towards raising venture capital among companies employing 10–49 people and owners with a higher level of education. In addition, the authors found that the connection between the corporate life cycle and openness to capital financing is not linear, as the willingness to involve capital increases at both the beginning and end of the life cycle. This may be explained by the fact that start-up companies have a significant capital requirement (with traditional sources of financing being effectively closed to them), while owners will tend to think about selling a company at the end of its life cycle.

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6 In the English term *venture capital*, the word “venture” suggests daring, while we might tend more to associate the Hungarian terminology (literally, “risk capital”) with a negative outcome. For this reason, OSMAN (2005) proposed the phrase *development capital* instead of risk capital.

### 3. FINANCING DECISIONS OF SMES IN HUNGARY

Most analyses<sup>7</sup> found that in Hungary, similarly to other countries in Central and Eastern Europe, the leverage level at companies is significantly lower,<sup>8</sup> while the pecking order theory typically prevails in firms' financing decisions.<sup>9</sup> In terms of indebtedness, however, the countries of Central and Eastern Europe do not form a homogenous group as significant discrepancies can be observed within the region (*Jensen-Uhl-Bartholdy*, 2008).<sup>10</sup>

Based on figures from the European Central Bank (ECB), the value of the corporate credit stock in proportion to GDP in the eurozone is more than double the average level in the Central and East European countries, and this has not decreased since the crisis erupted. In Hungary, the 8.3 percentage-point decrease that followed the record high of 2009 exceeded the drop registered in the eurozone (-6.7 percentage points), thus offsetting the at best only moderate decline seen in the other states in the region. The stock of credit of Hungarian companies in proportion to GDP, despite this significant decrease, still remains the highest among the countries of Central and Eastern Europe (Figure 1).

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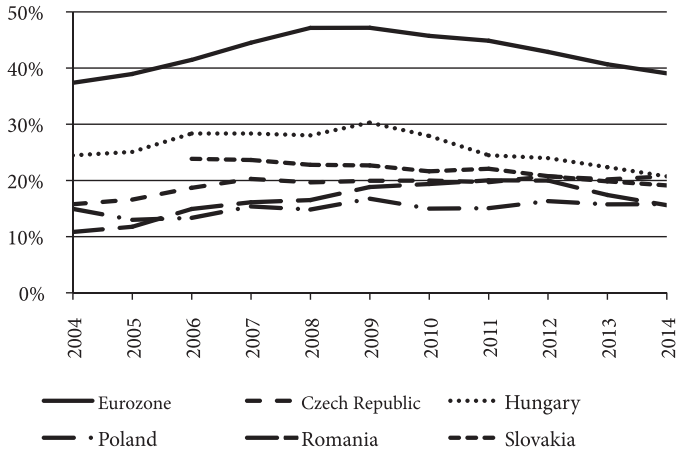
7 See, among others: JENSEN-UHL-BARTHOLDY (2008), HERNÁD-ORMOS (2012), NIVOROZHKIN (2004; 2002), HAAS-PEETERS (2004).

8 According to JENSEN-UHL-BARTHOLDY (2008), the influence of country-specific factors on capital structure is particularly significant in the case of SMEs, while its importance decreases as the size of the company grows. One possible explanation for this is that larger companies have easier access to international capital markets.

9 A substantial proportion of analyses found a significant, negative correlation between profitability and leverage at companies in Central and Eastern Europe, and within this Hungary, which indicates the prevalence of the pecking order theory [see, among others: *között* FILATOTCHEV et al. (2007), NIVOROZHKIN (2004), HAAS-PEETERS (2004), HERNÁDI-ORMOS (2012), GÁL (2013).

10 HERNÁDI and ORMOS (2012) examined 11 East European countries. Based on 2006 data, the total leverage index was the lowest in Poland (18.7%), and the highest in Latvia (40.2%). In the region as a whole, the rate remained practically unchanged between 2002 and 2006 (24.3% and 24.9%, respectively).

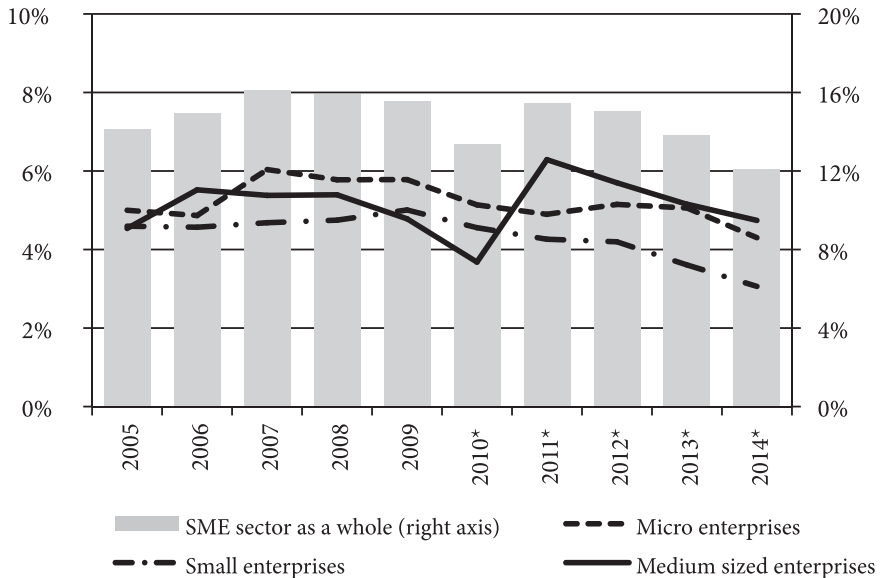
**Figure 1**  
**Evolution of corporate credit stock in proportion to GDP**



Sources: ECB, Eurostat, own calculations

Since the beginning of the crisis, statistics of the National Bank of Hungary (MNB) show a shrinking amount of outstanding lending in the SME sector in Hungary, and a similar trend can also be observed in the various segments of companies broken down according to size. The temporary break in the declining trend that occurred from 2010 to 2011 can be traced to the exchange rate effect, as the significant depreciation of the domestic currency temporarily led to a rise in credit stock data calculated in Hungarian forints due to the high proportion of foreign currency credit (Figure 2).



**Figure 2****Evolution of corporate credit stock in the SME sector (in proportion to GDP)**

Note: \*From 2010, calculated only with data from non-financial SMEs (MNB statistics for earlier years do not contain a breakdown of data along these lines).

Sources: MNB, KSH, own calculations

The lower level of corporate borrowing observed in the region, as well as the shrinkage typical of recent years in Hungary, is supported by data of the European Commission's *Access to Finance* survey of 2013 (EC, 2013). In the Visegrad countries and in Romania, the proportion of SMEs ruling out external financing is higher than the average in both the EU as a whole and the eurozone. In the sixth months prior to the 2013 survey, the proportion of companies which either declined to take advantage of any source of financing or relied exclusively on internal funds was 28.4% in Poland, 34.3% in Slovakia, 35.2% in the Czech Republic, 41.0% in Hungary,<sup>11</sup> and 44.2% in Romania. The corresponding ratio was 23.8% of companies in the EU as a whole, and 22.5% of those in the eurozone.

Among types of external financing, bank overdraft facilities and other loans, as well as leasing and factoring agreements, are the three most popular options among SMEs in Hungary, as in the eurozone. Within our region, subsidies and

<sup>11</sup> In Hungary, 8.5% of enterprises relied exclusively on internal funds in the six months preceding the survey, the second highest proportion after Austria (9.2%) in the European Union.

preferential loans fill an important role in financing enterprises in both the Czech Republic and Hungary, although this still lags behind the average in the eurozone.<sup>12</sup>

With respect to the proportion of SMEs resorting to capital financing in the preceding six months, or having earlier acquired experience in this regard, Hungary (3.3%) occupies 27th place among the 28 member states of the European Union (ahead of only Estonia) according to the European Commission's survey (EC, 2013). The other member states of Central and Eastern Europe can likewise be found in the bottom third of the ranking, while the European vanguard in this regard is led by Lithuania (63.1%), Latvia (43.3%) and France (38.4%), closely followed by Greece (36.0%) and Sweden (35.8%). Findings similar to the European Commission research are provided by a spring 2013 survey of MFB INDICATOR,<sup>13</sup> which shows that venture capital financing played a role (in spring 2013) in the financing of 4.6% of Hungarian micro, small and medium-sized enterprises.

Data of the European Private Equity and Venture Capital Association (EVCA) likewise reveal the immaturity of the private equity market in the states of Central and Eastern Europe, although they also paint a different picture on the level of individual countries compared to the survey of the European Commission.<sup>14</sup> Based on EVCA data, the shortfall of the Central and East European countries in the area of equity-based financing has increased further in the past four years. A more significant deficit is observable in venture capital investment, although the latter has not deepened since 2010, thanks almost entirely to the growth in such investment in Hungary.<sup>15</sup> Taking all private equity investment into account, Hungary stands on the average level in the region, while it ranks as the regional leader in venture capital financing based on its performance in the past four years, which even exceeds the EU average (Appendix 1).

The choice between debt and equity financing is significantly influenced by the cost of the various types of funding, as well as by their comparative development.

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12 If we take into account only the six-month period preceding the survey, 18.9% of Hungarian enterprises took advantage of subsidies or preferential credit, which is almost one and a half times the EU-28 average (12.8%). Of the EU countries, this proportion was higher only in Malta (19.4%), Italy (19.2%) and Spain (19.0%).

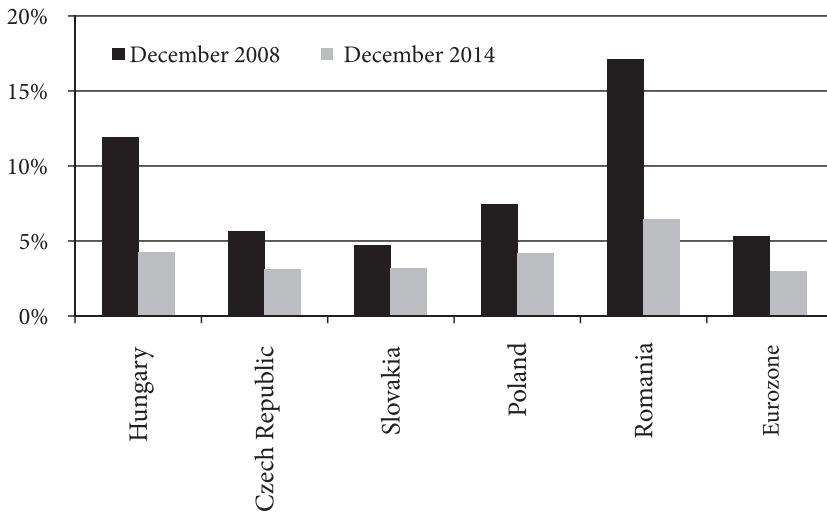
13 The MFB INDICATOR corporate survey, launched in summer 2009 by the Hungarian Development Bank, was prepared for the eighth occasion in spring 2013.

14 Due to the differing methodologies, only a limited comparison of the two data sources is possible.

15 Hungary's private equity market, thanks to the launch of the JEREMIE funds focusing on venture capital investments, has performed well in recent years in both regional and European comparison (MIKESY, 2014; 2015). Comparing the development of credit and capital-based financing in Hungary in the period 2010–2013, EVCA data show that the value of private equity investment amounted to an annual average of 0.107% of GDP, while statistics of the National Bank of Hungary reveal that investment credit extended to (non-financial) SMEs amounted to 1.217% of the given annual GDP on average.

In Europe yield expectations vary between 15% and 45%, depending on the stage of the investment (*Baeyens–Manigart, 2006*), while in Hungary venture capital investors expect a return of at least 20–25% (*Tóth, 2013; Halaska, 2014*). Naturally, there can be substantial differences between the expected and actually realised yields: calculations by *Papp (2012)*, for example, show that the yield on funds investing in early-stage enterprises looking back over two decades was negative in Europe. The economic crisis and a prolonged low level of economic activity have prompted the world's major central banks to cut benchmark rates to historically low levels. Meanwhile, falling interest on corporate loans (Figure 3) weakens the price competitiveness of capital investments compared to debt financing.

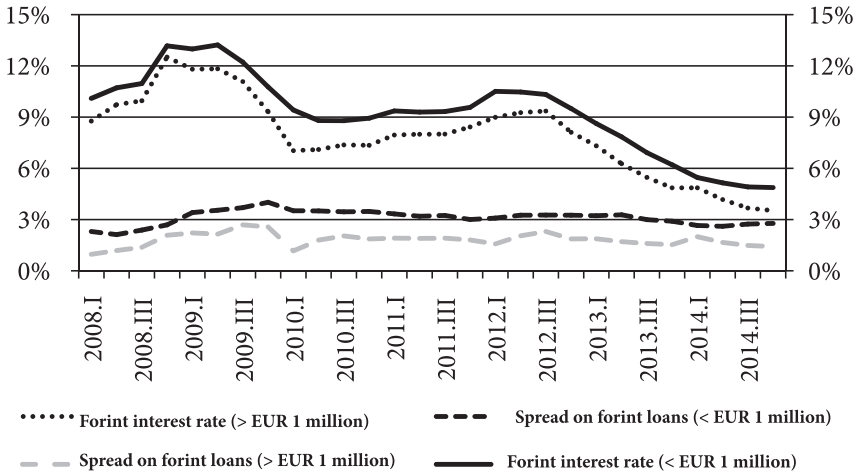
**Figure 3**  
**Evolution of interest rates on corporate loans of over 5 years' maturity in Central and Eastern Europe and the eurozone**



Source: ECB

Interest on new corporate forint loans has continuously decreased in Hungary since 2012. In the case of loan amounts of less than EUR 1 million, relevant from the point of view of SMEs in Hungary, the average interest rate fell by more than half from 10.5% at the beginning of 2012 to 4.9% at the end of 2014. The main factors in this were the combined effects of easing Hungarian interest conditions due to the cycle of base rate cuts begun by the central bank in summer 2012, coupled with the Funding for Growth Scheme introduced in mid-2013, while average spreads in this segment have remained practically unchanged in recent years.

**Figure 4**  
**Evolution of interest rates and spreads on new corporate forint loans**  
**according to loan amount**



Source: MNB

Besides the low interest rate environment, the attraction of capital-based financing is also reduced in the eyes of companies by the fact that responding to high yield expectations is only a realistically viable option for fast-growing so-called gazelle companies, particularly in an environment of low growth. A study by *Békés and Muraközy* (2011) of the enterprise sector in Hungary, based on the Schreyer index<sup>16</sup> calculated by companies' revenues, identified a total of 5,452 gazelle firms among enterprises employing between five and 250 people in the period 2005–2008 (meaning 9.3% of enterprises belonged in this category). One important finding of the research by *Békés and Muraközy* (2011, 2012) is that companies in either the secondary or tertiary sectors in Hungary are similarly likely to become “gazelles.” In his own analysis, *Papanek* (2010) likewise found that the gazelles are distributed evenly in the Hungarian economy, and that their proportion in high-tech sectors, or in the central region with the greatest growth momentum, still only slightly exceeds the average level. A 2012 publication by the OECD paints a similar picture, showing that in both manufacturing and the service sector in Hungary, there are almost identical proportions of so-called high-growth firms (3.09% vs. 3.99%) and gazelle companies (0.69% vs. 0.76%) (OECD, 2012).<sup>17</sup>

<sup>16</sup> Besides percentage growth, the Schreyer index also takes into account absolute changes in revenues or employment levels (BÉKÉS–MURAKÖZY, 2011).

<sup>17</sup> The OECD differentiates between high-growth firms and gazelles. High-growth firms are those at which the number of employees increases by at least 20% annually. Gazelles are younger enterprises displaying rapid growth (OECD, 2012).

One important reason that (bank) loans are preferred over capital financing may be that small and medium-sized enterprises do not have sufficient information or knowledge about the expectations of potential investors and do not feel at home in negotiations with capital firms, while experiences and information acquired previously as private individuals or through acquaintances may help company managers whenever credit products are concerned. Based on the survey by the European Commission (EC, 2013), a total of only 12.9% of Hungarian SMEs stated that they felt confident in negotiations with capital investors, which is practically equal to the corresponding proportion in the eurozone (12.6%). By comparison, some 53.9% of Hungarian companies, and 63.9% of firms in the eurozone, said they felt prepared to conduct negotiations with banks. This confirms the existence of the knowledge gap outlined in the preceding theoretical section.

### 3.1. Financing plans

Similarly to other European SMEs, firms in Hungary also intend to primarily use bank loans to finance their growth plans, according to the 2013 survey by the European Commission (Appendix 2). At the same time, in the case of Hungarian SMEs the high proportion of the “other” category presumably indicates an orientation towards subsidies and preferential credit.<sup>18</sup> Based on the EC survey, the willingness to take out loans is most striking among small enterprises (EC, 2013), while the results of the MFB INDICATOR of spring 2013 show that the proportion of firms thinking of bringing in external capital rises in parallel with company size. A shared finding of both surveys is that the proportion of companies planning to take advantage of loans is higher among industrial companies than in the tertiary sector.

In implementing their growth plans, barely 2.4% of Hungarian firms envisage capital-based financing (compared to 4.3% in the eurozone). In the region, both Romania (5.7%) and Poland (3.7%) are ahead of Hungary: the Hungarian economy ranks only 22nd of the 28 member states in this regard. However, while the MFB survey shows the proportion of SMEs planning to raise external capital decreasing as the company size increases, the *Access to Finance* research reveals a contrary correlation. While the European Commission’s study indicates that the preference for capital financing is greatest among industrial companies, the MFB INDICATOR shows the share of SMEs intending to admit external co-owners to

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18 This is supported by the spring 2013 findings in the MFB INDICATOR series of corporate surveys, in which subsidies (from the state or EU sources) proved to be the most popular financing channel, with some 69.3% of SMEs planning to avail themselves of such funding. The preference for credit-based financing lagged only very slightly behind (69.0%), while the involvement of external capital investors was an option for 19.9% of firms.

be more than one and a half times greater (almost 30%) in the service sector than in the secondary sector. In terms of the age of companies, both surveys reveal that “middle-aged” firms (aged 5–10 years) think about capital investments in the greatest numbers.<sup>19</sup>

#### **4. AN EMPIRICAL STUDY OF CHOICES BETWEEN CREDIT OR CAPITAL-BASED FINANCING AMONG SMES IN HUNGARY**

The goal of our empirical study is to map the factors behind the choice between credit and capital-based financing, taking data from the MFB INDICATOR corporate survey of spring 2013 as a basis. In order to make a clear differentiation, we concentrated our analysis on firms which chose either exclusively credit or exclusively capital financing from the available market sources of funding. A total of 164 micro, small and medium-sized enterprises were thus included in the study. Some 89.0% (146) of the companies involved in the study would opt exclusively for credit, and 11.0% (18) exclusively for raising external capital.

We began by examining the correlations between corporate demographic variables<sup>20</sup> and financing preferences with the help of a cross-tabulation analysis, on which basis sector, size and geographic location carry (significant) explanatory power.<sup>21</sup> Based on the results, the proportion of companies contemplating only capital financing when bringing in external (market) funding was highest among companies operating in the Central Hungary region (26.8%), in the service sector (21.7%), or in the micro-enterprise segment (21.6%). Concentration exclusively on credit financing was most typical in agriculture (97.6%), among medium-sized enterprises (93.6%), and outside of the Central Hungary region (Eastern Hungary: 93.7%, Western Hungary: 95.0%).

Following this, we examined companies' financing preferences, and the factors behind their choices between credit and capital financing, by means of a binary logistic regression<sup>22</sup> analysis.<sup>23</sup> The dependent variable included in the study (CREDIT\_CAPITAL) refers to whether the given company is considering exclusively

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19 This contradicts the results of FUTÓ and SZOBONYA (2012), who found that the correlation between the corporate life cycle and openness to capital financing is not linear, and that willingness to raise capital increases at both the beginning and end of the life cycle.

20 Corporate demographic variables included in the study were: sector, size, geographic location, age, legal form, ownership structure.

21 Based on the value of the Pearson chi-square indicator, with a 5% significance level, we can reject the null hypothesis whereby no correlation exists between the given variable and SME financing decisions (Appendix 3).

22 The choice of process was justified by the fact that our outcome variable is dichotomous (i.e. it can assume values of only 0 or 1), so that it cannot be valued using the traditional method of least squares (KOVÁCS, 2009).

23 For our analysis we used the SPSS 17.0 for Windows computer program.

credit ( $y=0$ ) or only capital financing ( $y=1$ ). Due to some missing data, only 130 of the 164 observed companies (79.3%) were eventually included in the model. A total of 90.8% (118) of the enterprises in the analysis indicated they would exclusively employ credit, while 9.2% (12) saw the involvement of an external capital investor as the only viable route. This is the initial situation for the logistic regression analysis, which means that if we had to “guess” at random whether an SME is planning to use credit exclusively, then we would be correct 90.8% of the time.

We included the following explanatory variables in the analysis<sup>24</sup>:

- assessment of the obstacles raised by banks during the borrowing process;
- leverage ratio measuring the indebtedness of the company;
- object of the planned investment or development;
- evolution of revenues and operating profit in the year prior to the survey, as well as companies’ expectations of these with respect to the 12 months following the study;
- expectations of the evolution of interest on loans in the year following the study; and
- factors shaped with the help of an analysis of the main components of enterprises’ medium-term objectives.

To ensure that we concentrated only on variables with a significant impact, we applied the so-called *backward stepwise* variable selection method.<sup>25</sup> By including the independent variables in the model, the fit of the logit model was improved (the value of the  $-2\ln L$  model fit indicator decreased from 80.040 to 41.827), while the explanatory power based on the Cox & Snell, Nagelkerke and indicators was 25.5%, 55.4% and 47.7%, respectively.<sup>26</sup> The logit model, taking into account the explanatory variables, is able to determine with 96.2% accuracy the attitude of a company towards raising external capital. This represents a 5.4 percentage-point improvement compared to a random selection from the sample included in the analysis.<sup>27</sup>

Having run the *backward* algorithm on the model, eight explanatory variables remained: FINANCIAL\_STABILISATION, ACQUISITION, COLLATERAL, LI-

24 For descriptions and coding of the independent variables, see Appendix 4.

25 We applied the Wald statistics: the entry criterion was determined with a 5% and the removal criterion with a 10% probability value.

26 The 47.7% value qualifies as “reassuringly high” based on SZÉKELYI–BARNA (2008).

27 We examined whether the 96.2% accuracy rate is significantly better than if we were to estimate based only on the mode (most frequent) value, omitting the independent variables. To determine this, we can use a lambda association measure (SZÉKELYI–BARNA, 2008). Taking CREDIT\_CAPITAL as a dependent variable, the obtained value of 0.583 is significant, meaning that the explanatory variables of the logit model have effectively increased the accuracy rate.

MITED\_CREDIT\_SUPPLY, LOAN\_INTEREST\_EXPECTATION, LEVERAGE, REVENUE\_EXPECTATION and WORKFORCE\_TRAINING (Appendix 7).

Of the significant explanatory variables, the value of the beta coefficient was negative in the case of LOAN\_INTEREST\_EXPECTATION, FINANCIAL\_STABILISATION and REVENUE\_EXPECTATION, so that as these increase, the chances diminish – or in the case of other significant variables, grow – that a company will prefer capital financing over credit.

#### 4.1. Interpretation of results

Based on odds ratios (assuming that we keep the other variables under control), the effects of the individual explanatory variables on the dependent variable are as follows:

- **FINANCIAL\_STABILISATION:** The more an SME regards financial stabilisation as an important objective in the medium term, the greater the chance that it will prefer credit-based financing (among these firms, the chance they will think only of raising external capital is reduced to 0.31 – or to approximately one third – of the likelihood of credit financing). In another analysis (Mikesy, 2015), we established that companies setting financial stabilisation as their goal are more open to bringing in external capital investors. This apparent contradiction may be resolved if we consider that, in order to strengthen their financing situation, these firms are more accepting of any type of funding (which is consistent with the assertion of *Baeyens* and *Manigart* [2006]). However, if they have to choose between own equity or external capital types of funding, then they will tend to opt for the latter. This may be because, in the event of successful stabilisation of a company's situation, the current owners (in the case of credit financing, because of predetermined, fixed repayments) are more able to profit from an increase in the company's value, while the lending bank bears a significant portion of the loss if the consolidation fails.
- **ACQUISITION:** If a firm plans acquisitions in the medium term, it is almost three times (2.832 times) more likely that it will prefer capital financing. The explanation for this, among other factors, may be that acquisition loans are not yet widespread in Hungary.<sup>28</sup>
- **COLLATERAL:** If an SME has considerable difficulty producing the collateral required by banks, this significantly increases the chance (by a factor of 28.434) that the involvement of external owners will enjoy precedence in its

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<sup>28</sup> Besides the new Civil Code easing legal conditions for leveraged buyouts (LBOs), the second phase of the National Bank of Hungary's Funding for Growth Scheme may bring a change in this, under which investment loans may also be used for the purchase of permanent shares in a business.



financing plans. Producing the required collateral typically causes serious problems for start-up companies or for those in the service sector, due to the low level or inappropriate type of acceptable (negotiable) guarantees, or their low tradability. For this reason, the credit capacity of such enterprises is limited or quickly exhausted, which is consistent with the findings of *Baeyens and Manigart* (2006) that these firms may be diverted towards accepting external capital.

- **LIMITED\_CREDIT\_SUPPLY:** The more a company perceives banks' altered, unfavourable or passive lending behaviour as a serious obstacle, the greater the likelihood (by a factor of 9.293) that it will join the category of companies which exclusively contemplate capital-based financing.
- **LOAN\_INTEREST\_EXPECTATION:** If a firm expects a stagnation or decline in interest on loans, it is much more likely to move towards credit-based financing (the odds ratio it will prefer capital investment falls to 0.034 or 0.077 of the likelihood of credit financing). The attraction of capital diminishes in an environment of (expected) lower interest, while the attraction (price competitiveness) of debt financing is enhanced in comparison with the yields expected by investors.
- **LEVERAGE:** With a 1 percentage-point increase in leverage, the chance of an SME contemplating only external capital investment increases by a factor of 1.07 (i.e. by 7%). The significant impact of this variable represents empirical proof that declining credit capacity brings with it the growing likelihood that a company will prefer capital financing over taking out a loan. At the same time, leverage cannot be increased indefinitely and, once indebtedness reaches a certain level, the strengthening of the financing situation becomes an important goal, potentially lessening firms' willingness to raise capital (as we have seen with the *FINANCIAL\_STABILISATION* explanatory variable).
- **REVENUE\_EXPECTATION:** If a firm expects a growth in revenues in the 12 months following the survey, then it will more likely prefer to take out credit (with the likelihood it will only want to bring in an external capital investor decreasing to 0.17). This means that SMEs with better prospects are more likely to opt for loans, while those with less favourable expectations will tend more to think in terms of capital financing. This adverse selection effect, already discussed in the theoretical section, represents empirical proof that owners with a less favourable outlook are more inclined to share the expected lower profit (or loss) than firms with better growth prospects, which tend more to choose loans with fixed repayments (thus avoiding having to share either control over the enterprise or the information advantage they enjoy with regard to their own assets).

- **WORKFORCE\_TRAINING:** Among enterprises which feature workforce training among their development plans for the 12 months following the survey, the chance that they will choose to bring in external capital is greater (by a factor of 7.568) than among firms which do not plan developments of this kind. The appearance of workforce training among development plans can be regarded as a kind of indicator of higher value-added but riskier activity. In addition, it can be supposed that such companies have a greater proportion of intangible assets on their balance sheets. A lower level of negotiable guarantees, meanwhile, also diverts companies towards bringing in capital.

## 5. CLOSING THOUGHTS

Access to external funding is one of the most serious problems currently faced by micro, small and medium-sized enterprises in both Europe and Hungary. In the Central and East European region, and within it Hungary, the leverage level at companies is significantly lower than in developed (West European) countries, while their financing decisions are typically made according to an order of preferences established on the basis of the pecking order theory. Combined with companies' limited familiarity with capital financing and a low level of openness to capital investment, this helps explain why equity-based external financing has not played an important role at Hungarian SMEs to date, and why – based on their plans – it cannot be expected to do so in future.

We attempted to reveal the factors behind the choices between credit and capital financing at companies in Hungary by means of a binary logistic regression model. Our findings provided empirical confirmation of several theoretical theses. As leverage increases and credit capacity is exhausted, companies are more likely to turn to capital investment. The limit to this arrives, however, when financing difficulties reach a level where financial stabilisation becomes a strategic goal, at which point credit (once again) becomes the preferred channel for securing funding. At the same time, an adverse selection effect also comes into play whereby companies with more favourable prospects are less inclined to give up expected (higher) profits, thus opting instead for debt financing with predetermined, fixed repayments. Firms expecting the conditions for debt financing (credit supply, interest rates) to become less favourable are more likely to prefer equity-based external financing, as are SMEs with few or non-negotiable guarantees. Firms planning acquisitions or generating higher added value are also more likely to choose to involve capital financing.

In our empirical analysis, to facilitate examination of the factors influencing the decision between credit and capital-based financing, we included companies

which planned to take advantage of one option or the other exclusively; however, in practice the two financing forms are not sharply separated from each other. Their simultaneous application can open up significant potential synergies for exploitation: a capital injection can stabilise and consolidate the enterprise's capital position and increase its credit capacity, enabling it to take out more loans and under more favourable terms than before. One potential topic for further research is an approach to examining the financing needs and preferences of SMEs in Hungary which extends beyond the "classic" types of funding to include hybrid financing forms – such as mezzanine financing – that blend the features of both credit and capital financing.

## APPENDICES

### Appendix 1

#### Evolution of private equity and venture capital investments in the European Union and the Central and East European region

Evolution of private equity and venture capital investments in the European Union and Central and East European countries (proportionate to GDP)		2007– 2013 (average)	2010– 2013 (average)
European Union*	Total private equity investment	0.342%	0.305%
	Venture capital investment	0.033%	0.026%
Czech Republic	Total private equity investment	0.253%	0.101%
	Venture capital investment	0.010%	0.007%
Hungary	Total private equity investment	0.189%	0.107%
	Venture capital investment	0.024%	0.036%
Poland	Total private equity investment	0.142%	0.147%
	Venture capital investment	0.006%	0.004%
Romania	Total private equity investment	0.112%	0.054%
	Venture capital investment	0.010%	0.003%
Central and East	Total private equity investment	0.168%	0.116%
European average**	Venture capital investment	0.010%	0.008%

Notes: \* EU-28 (except Cyprus, Malta, Slovakia, Slovenia, Croatia)

\*\* Czech Republic, Hungary, Poland, Romania

Sources: own calculations, EVCA/ Pereg Analytics, Eurostat

**Appendix 2****Preferred types of funding for financing of growth plans**

<b>Preferred types of funding for financing of growth plans</b>							
	EU-28	Euro-zone	Czech Republic	Hungary	Poland	Romania	Slovakia
Bank loans	67.2%	71.0%	75.2%	58.5%	57.6%	35.5%	74.4%
Other credit	12.6%	12.4%	12.5%	11.7%	21.4%	13.1%	8.9%
Capital financing	4.7%	4.3%	0.0%	2.4%	3.7%	5.7%	0.6%
Subordinated loan capital	2.7%	3.0%	3.1%	0.0%	0.6%	2.4%	1.0%
Other	6.3%	4.8%	5.6%	20.2%	7.3%	22.5%	8.4%
Did not respond	6.5%	4.6%	3.5%	7.2%	9.4%	20.8%	6.6%

Source: EC (2013)

**Appendix 3: Cross-tabulation analysis**

<b>Pearson's chi-square test</b>			
	Value	df	Asymp. Sig. (2-sided)
SECTOR	8.872	2	0.012*
SIZE	5.985	2	0.05*
PART OF COUNTRY	14.119	2	0.001**

Notes: \* significant on 5% level

\*\* significant on 1% level

Source: own calculations

#### Appendix 4

#### Variables included in an examination of the financing preferences of micro, small and medium-sized enterprises using the binary logistic regression model

Name of variable	Description of variable	Values
OWN_ RESOURCES	The most significant obstacles raised by banks during the borrowing process, in the assessment of companies: the requirement for own resources.	1 = Serious obstacle, 0 = Not serious obstacle
COLLATERAL	The most significant obstacles raised by banks during the borrowing process, in the assessment of companies: the requirement for collateral.	1 = Serious obstacle, 0 = Not serious obstacle
BUSINESS_ PLAN	The most significant obstacles raised by banks during the borrowing process, in the assessment of companies: strict judgement of business plan.	1 = Serious obstacle, 0 = Not serious obstacle
LIMITED_ CREDIT_ SUPPLY	The most significant obstacles raised by banks during the borrowing process, in the assessment of companies: banks' risk-averse behaviour.	1 = Serious obstacle, 0 = Not serious obstacle
HIGH_ INTEREST	The most significant obstacles raised by banks during the borrowing process, in the assessment of companies: too high interest rates.	1 = Serious obstacle, 0 = Not serious obstacle
OTHER_ CONDITIONS	The most significant obstacles raised by banks during the borrowing process, in the assessment of companies: other borrowing conditions (maturity, grace period etc).	1 = Serious obstacle, 0 = Not serious obstacle
FINANCIAL_ STABILISATION	Strategic objective for the 3 years following the survey: financial stabilisation, consolidation.	factor value
ACQUISITION	Strategic objective for the 3 years following the survey: acquisitions.	factor value
FOREIGN_ EXPANSION	Strategic objective for the 3 years following the survey: presence and expansion on foreign markets.	factor value
GROWTH_ EXPANSION	Strategic objective for the 3 years following the survey: growth in output/ services, expansion of product range.	factor value

REORGANISATION	Strategic objective for the 3 years following the survey: rationalisation of company activity, cost reduction.	factor value
INCREASING_OWNER_INCOME	Strategic objective for the 3 years following the survey: increasing owners' income.	factor value
LEVERAGE	Balance sheet footing / equity	constant variable
REAL_ESTATE	Object of planned investment/development: purchase, construction of real estate.	1 = Yes, 0 = No
MACHINERY	Object of planned investment/development: purchase of machinery.	1 = Yes, 0 = No
IT_DEVELOPMENT	Object of planned investment/development: IT development.	1 = Yes, 0 = No
WORKFORCE_TRAINING	Object of planned investment/development: workforce training.	1 = Yes, 0 = No
REVENUE_CHANGE	Evolution of company revenues in 12 months preceding survey.	1 = Increased, 0 = Did not change, or decreased
PROFIT_CHANGE	Evolution of company operating profit in 12 months preceding survey.	1 = Increased, 0 = Did not change, or decreased
REVENUE_EXPECTATION	Expected evolution of company revenues in 12 months following survey.	1 = Will increase, 0 = Will not change, or will decrease
PROFIT_EXPECTATION	Expected evolution of company operating profit in 12 months following survey.	1 = Will increase, 0 = Will not change, or will decrease
LOAN_INTEREST_EXPECTATION	Company's expectation of evolution of loan interest in 12 months following survey.	2 = Will decrease, 1 = Will not change, 0 = Will increase

Source: MFB INDICATOR corporate survey of spring 2013

## Appendix 5

### Designation of main components included in logistic regression analysis

Factors formed from variables describing company characteristics and objectives for next 3 years			
	Factor	Designation	Closely correlated variables* (in order according to factor weight)
Company objectives	1. factor	FINANCIAL_STABILISATION	goal_17, goal_18, goal_16, goal_15, goal_20, goal_14
	2. factor	ACQUISITION	goal_13, goal_12
	3. factor	FOREIGN_EXPANSION	goal_02, goal_03, goal_01
	4. factor	GROWTH_EXPANSION	goal_07, goal_09, goal_08, goal_04
	5. factor	REORGANISATION	goal_06, goal_05, goal_11
	6. factor	INCREASING_OWNER_INCOME	goal_19

Note: \*for a description of the variables, see Appendix 6

## Appendix 6

### Company objectives

*Assessment of importance of company objectives for the next 3 years based on 20 aspects on a five-point Likert scale (on a scale of 1–5, where 1: less important aspect, 5: most important aspect)*

goal\_01: Increasing market share

goal\_02: Launching and expanding exports

goal\_03: Foreign expansion (setting up companies, acquisitions)

goal\_04: Altering and broadening profile

goal\_05: Reorganisation of company activity (crisis management/reorganisation)

goal\_06: Cost reduction

goal\_07: Expansion of output/services

goal\_08: Improvement in quality of output/services

goal\_09: Introduction of new product(s)/service(s) on market

goal\_10: Development of new patent, licence

goal\_11: Purchase of new patent, licence

goal\_12: Acquisition of competitor(s)

goal\_13: Vertical acquisition within industry

goal\_14: Preserving corporate independence (warding off hostile takeovers)

- goal\_15: Deepening contacts with suppliers  
 goal\_16: Stabilising the company's financing situation  
 goal\_17: Repaying loans  
 goal\_18: Reducing debts to suppliers  
 goal\_19: Increasing income for owners  
 goal\_20: Enhancing employees' specialist skills and qualifications

Source: MFB INDICATOR corporate survey of spring 2013

## Appendix 7

### Variables included in the model (backward method)

Variables included in the model						
	B	S.E.	Wald	df	Sig.	Exp(B)
COLLATERAL	3.348	1.378	5.904	1	0.015	28.434
LIMITED_CREDIT_SUPPLY	2.229	1.272	3.072	1	0.08	9.293
FINANCIAL_STABILISATION	-1.17	0.488	5.762	1	0.016	0.31
ACQUISITION	1.041	0.458	5.164	1	0.023	2.832
LEVERAGE	0.067	0.028	5.886	1	0.015	1.07
WORKFORCE_TRAINING	2.024	1.205	2.823	1	0.093	7.568
REVENUE_EXPECTATION	-1.773	1.062	2.79	1	0.095	0.17
LOAN_INTEREST_EXPECTATION			5.113	2	0.078	
LOAN_INTEREST_EXPECTATION (1)	-2.489	1.172	4.507	1	0.034	0.083
LOAN_INTEREST_EXPECTATION (2)	-1.967	1.11	3.138	1	0.077	0.14
Constant	-5.523	1.82	9.206	1	0.002	0.004

Notes: \* significant at 5%; \*\* significant at 10%



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