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Some Features of Hungarian Financial Literacy in the Light of the Economic Behaviour of Small and Medium-sized Enterprises

SUMMARY: The study examines the financial management culture of the SME sector based on the results of a nationwide representative survey. The analysis focuses on the financial literacy and behaviour of entrepreneurs: the knowledge and use of different financial products, the planning of financial management, the late settlement of invoices and the substantiation of financial management decisions. The database of our research is based on the survey entitled “Financial Literacy in Hungary”, conducted by Corvinus University of Budapest in 2017. We examined the different financial literacy indicators by means of simple statistics including, in some cases, their changes over time. In the next step, by applying a multinomial logistic regression, we showed that the domestic SME sector can be segmented according to certain corporate demographic and other independent variables, as well as financial literacy indicators. Three groups can be distinguished: (1) traditional thrifty enterprises, (2) enterprises lacking resources and (3) smartly-financed enterprises.¹

KEYWORDS: small and medium-sized enterprises, financial literacy, financial behaviour

JEL-CODES: D22, G21

According to the professional literature, SMEs play a crucial role in respect of innovation, employment and hence, the growth of the national economy (Acs – Audretsch, 1990; Kotey – Meredith, 1997). Nowadays in Hungary the role of SMEs is especially prominent in the knowledge-intensive sector (real estate business, professional, scientific and technological activities) and in the construction industry, where nearly 90 per cent of the jobs are

provided by SMEs (Hágen – Holló, 2017). At the same time, a high percentage of SMEs end up liquidated (liquidation within five years is particularly common among young companies (HCSO, 2017)). According to the international literature, besides low productivity, this can be also attributed to the poor financial literacy of SME owners and managers (Bosma – Harding, 2006; Drexler et al., 2014). This phenomenon not only affects the assessment and understanding of various financing opportunities, but also leads to bad financial

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decisions, loss or even failure (Joo – Grable, 2000). International research has proven that low-level financial knowledge and literacy prevent the making of rational financial decisions and orientation in the formal financial system of the company (Ibua, 2009; Wiklund – Shepherd, 2005).

One of the key factors contributing to the growth of SMEs is the availability of financial resources, as the use of new technologies and the increase in productivity and competitiveness depends on it (Hewitt-Dundas, 2006). The survey conducted by Hewitt-Dundas (2006) among Irish enterprises draws attention to the fact that the lack of financial resources creates serious disincentives for corporate innovativeness, which is in correlation with the lack of financial knowledge, because it limits access to external resources and the innovativeness of the company.

Foreign and domestic training programmes provide information to owners of small start-up businesses. The main goal is to develop the financial knowledge and literacy of young and/or micro-entrepreneurs and the effect is essentially positive (Bruhn – Zia, 2013; Cole *et al.*, 2012; Drexler *et al.*, 2014). In Hungary, as well, a number of programmes aimed at adults and young people are intended to prevent vulnerability deriving from ignorance. Such programmes provide detailed information on money, banks, loans, etc. in order to improve household management skills (Németh *et al.*, 2016; Zsótér – Nagy, 2012) that strengthen the self-confidence, financial knowledge and awareness of consumers.

The socio-economic, anthropological and behavioural psychological definition of financial literacy consists of several elements (Luksander *et al.*, 2016; Németh *et al.*, 2016; Kovács *et al.*, 2013; Atkinson – Messy, 2012; Botos *et al.*, 2012; Béres – Huzdik, 2012). In empirical and descriptive statistical surveys it is expedient to consider certain operationalis-

able elements of financial literacy, such as the definition used in the OECD comparative international research. According to this definition, “Financial literacy is a combination of awareness, knowledge, skill, attitude and behaviour necessary to make sound financial decisions and ultimately achieve individual financial well-being” (Atkinson – Messy 2012, p. 14). The OECD conducts an international comparative survey every five years, in the course of which they examine the features of financial literacy in different countries, including the financial literacy, knowledge and financial behaviour of people, as well as their attitude related to certain aspects of financial literacy. Based on the results of the aforementioned comparative survey, the financial knowledge of Hungarians is above-average, but their performance in the practical application of financial knowledge is below average (Kenesei, 2014).

The goal of our empirical research is to present the financial management behaviour of the owners of small and medium-sized enterprises according to the financial awareness elements measured among them. The results of our analysis performed on the basis of various indicators show whether entrepreneurs

- know and use certain modern banking and financial services and new products;
- handle money with a thrifty, accumulative attitude or this is not their intention;
- take out a loan for developments or they do not want to become indebted;
- strive for security even by taking out various insurance policies;
- are able to tackle temporary solvency problems.

DATA AND METHODS

Our analysis is based on the database of the research entitled Financial Literacy in Hungary, conducted by the Institute of Sociology

and Social Policy of Corvinus University of Budapest in the winter of 2017, which was the third wave of a series of surveys started in 2006. Data collection was based on a national representative sample covering nearly 1,000 companies employing at least 10, but no more than 249 employees. The companies in the sample were selected from the company register of the HCSO, based on the number of businesses in the sector of small and medium-sized enterprises and their distribution by sector and regional location. The sample was nationally representative by company size (10–19 employees, 20–49 employees and 50–249 employees), economic sector (manufacturing sector, food industry, construction industry, trade, services) and geographical location (region). The purpose of the survey was to collect information on the features of financial behaviour among small entrepreneurs. In the course of data collection, we met the managers and owners of the SMEs or the employees in charge of finances designated by the managing director to answer our questions about the company's spending, saving, investment and insurance habits, as well as about the company's real data and other financial management details.

In line with the population rates, the company sizes in the sample are distributed as follows: most companies (57%) employ 10–19 employees, nearly a third of the companies employ 20–49, while a seventh of them employ 50–249 persons. The majority (nearly half) of the companies surveyed belong to the lowest revenue category: their annual net revenue is below HUF 250 million; a quarter of them (23%) realised a revenue between HUF 251 million and HUF 500 million, while a third of them (31.3%) collected revenues over HUF 500 million in the financial year prior to the survey. The companies were typically founded before 1996 (47%), more than a third were established between 1997 and 2007, and 18% of the enterprises

are young: set up during the financial crisis in 2008 or later; in other words, they have been present in the market for less than 10 years. By economic sector, a quarter of the respondents (24.3%) were commercial firms, another quarter (23.2%) were enterprises in the manufacturing and food industry, a fifth of them (21%) provided business and other qualified services, a sixth of them were in the construction industry and a seventh were engaged in transportation and tourism. Analysing the actual structure of the enterprises in the sample, it can be said that the SMEs are usually in Hungarian ownership. Only a tenth of the enterprises are in the exclusive or majority ownership of foreigners: ownership is practically homogenous, all-Hungarian. In our sample, the percentage of small organisations founded by family members, relatives or friends is very high (67.2%), although the associates recruited on a professional basis make up almost one third (32.8%) of the SME sector. As regards enterprises organised on the basis of friendship, we do not know whether the good relationship between the associates is enough for the establishment of an enterprise, but we assume that professional commitment and expertise also play a role in the decision.

With respect to the qualifications of the respondent company owners, two-thirds of them (65.9%) hold higher education qualifications. Most of them (63%) acquired their skills in finances and entrepreneurship at school, further training and in adult education, while 37% acquired this kind of knowledge through informal channels (in the family circle, from friends, following the example of other enterprises, based on their own business practice or through self-education).

The regional distribution of SMEs is highly centralised: the percentage of small and medium-sized enterprises is the highest in the central region (in the capital city and Pest County, 44%). By settlement type, SMEs usually

operate in the capital city or at county seats (52%), less than a third (31%) are in towns, while the registered offices of the remaining one-sixth are located in villages. Regarding the geographical location of sales markets, more than two-thirds of the surveyed SMEs provide their services or sell their products exclusively in Hungary: one-third of the enterprises sell their products in regional markets, while somewhat more than a third operate at a national level; i.e. they have a presence in other regions as well. The share of products and services sold within or outside the EU in sales revenues is higher than the share of domestic sales at nearly one quarter of the companies.

During the data analysis, we used the univariate descriptive method to present the indicators of financial management literacy. Where permitted by the data, we also analysed the change of the indicators over time before, by means of cluster analysis, we identified the SME groups that could be distinguished based on financial behaviour, as we assume that the SME sector is not homogenous in terms of the measured financial literacy indicators. Finally, we explored the relationship between the segmented groups of the sample by means of multivariate analysis, with our indicators measuring the companies' demographic and behavioural features.

GENERAL FEATURES OF FINANCIAL LITERACY AMONG SMALL-SIZED ENTERPRISES

National and international research on financial literacy primarily examines the complexity of the financial literacy of the population (households), typically by considering the following sub-factors:

① financial knowledge (knowledge of financial products and services, financial competencies),

② financial inclusion (access to financial instruments),

③ financial behaviour and attitudes (planning and management of finances, such as accumulation of savings, long-term self-sufficiency, time orientation related to money, risk-taking), and

④ proficiency in topics related to finances (such as pension savings) (Atkinson – Messy, 2012; Lusardi – Mitchell, 2008; Németh – Zsótér, 2017; OECD/INFE, 2016; Shockey – Seiling, 2004).

The questionnaire used in the research Financial Literacy in Hungary mapped the financial literacy of SMEs on the basis of the following indicators: the awareness and use of different financial products and the services, the management of the company, foreseeing financial rationality and the substantiation of financial and financial management decisions.

Knowing and using financial products

The first group of questions targeted the exploration of the use of various financial and banking products. Knowing the individual products and services, being aware of possibilities can greatly influence the broad-based financial manoeuvring of enterprises. Moreover, the state of the economy, business conditions and the owners' ambition reflected in the performance of the enterprise can explain why the owners seek or accept certain banking services.

Online banking services

Nowadays, the use of Netbank is very common among companies: based on the results, 95 out of 100 enterprises in the SME sector use e-banking, while “only” 4.8% reported not using it. Those who refuse to use it (we would like to emphasise that their percentage is very low, N=48), claim to do so mainly for

security reasons: they do not use it because they do not consider it to be safe or they do not like the SMS identifier. Others cited impersonality and the fact that the bank’s online client portal was not user-friendly as a reason for the rejection.

The most well-known online banking services (*Table 1*) among SMEs include bank account balance and account history inquiries, transfers, card payments and requests for a certified bank account statement. Almost all respondents had heard about the use of bank applications. The least well-known services are POS-terminal usage and the sub-account option (7 and 8%). 5% of the respondents had not heard about the provision of a certificate of incorporation, and 2.6% were not familiar with the possibility of paying customs duties and taxes online.

Almost all of the enterprises that use e-banking (98.3%) regularly transfer money and check account balances and account history; these online banking services, therefore, are commonly used² (*Figure 1*). Three-fifths

of the SMEs pay by bank card, almost half of them use e-banking for the purpose of paying customs duties and taxes, while half of them request online certified bank account statements. Two-fifths of the respondents use online banking in connection with a sub-account, while a quarter of them use a POS terminal or a banking application in business matters.³ The least wide-spread service among SMEs using online banking is the service that provides a certificate of incorporation (17%). In our opinion, the use of these up-to-date or novel but as yet not widespread services is indicative of the enterprise’s openness to innovation.

Loans

More than two-thirds of the SMEs have some kind of loan (67.9%) (average: HUF 29,305 million, minimum value: HUF 1 million, maximum value: HUF 1,000 million). As shown in *Table 2* – in which one of the columns contains data of the sample from 2017 and the other column includes data taken in

Table 1

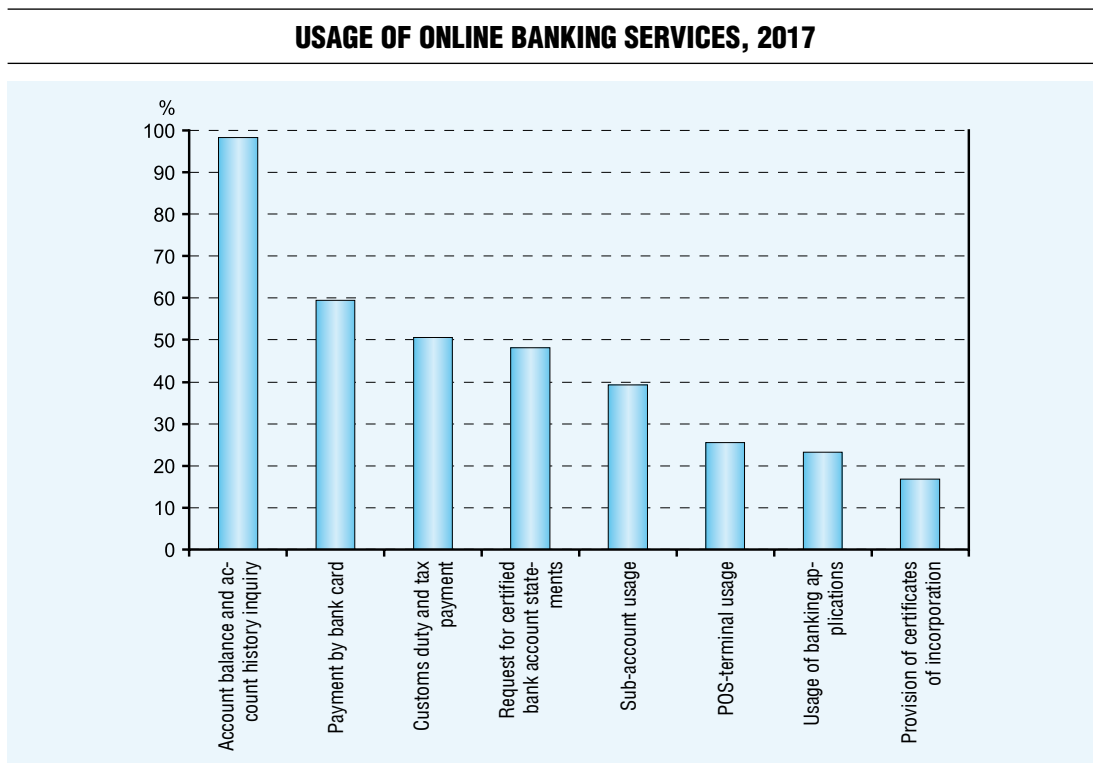
**AWARENESS AND USE OF ONLINE BANKING SERVICES,
2017 (PER CENT)**

Do you know and have you used the following? N=1,000	Yes, the respondent has used it.	No, the respondent has not used it.	The respondent has not heard of it.
Account balance and account history inquiry, transfer	98.3	1.6	0.0
Payment by bank card	59.5	40.0	0.0
Payment of customs duty and taxes	50.6	41.9	2.6
Request for certified bank account statements	48.1	42.4	0.0
Sub-account usage	39.3	51.1	7.1
POS-terminal usage	25.5	62.9	8.5
Usage of banking applications	23.2	57.3	0.3
Provision of a certificate of incorporation	16.8	73.5	4.7

Note: The table does not include “I do not know” answers.

Source: Financial Literacy in Hungary research, 2017

Figure 1



Source: Financial Literacy in Hungary research, 2017

Table 2

AWARENESS AND USE OF DIFFERENT LOAN PRODUCTS, 2006 AND 2017 (PER CENT)

Do you know and have you used the following?	Yes, the respondent has used it. N ₂₀₀₆ =1208 N ₂₀₁₇ =1000		No, the respondent has used it. N ₂₀₀₆ =1208 N ₂₀₁₇ =1000		The respondent has not heard of it. N ₂₀₀₆ =1208 N ₂₀₁₇ =1000	
	2006	2017	2006	2017	2006	2017
Overdraft	34.9	35.9	35.5	60.0	3.2	3.3
Leasing	36.6	32.9	56.4	67.0	7.1	7.5
Working capital loan	34.7	24.1	65.4	75.3	n.a.	n.a.
Investment loan	33.4	23.3	62.3	76.3	8.4	8.6
Credit card	8.6	14.1	62.2	85.1	6.4	6.5
Mortgage credit	14.6	8.9	71.8	90.8	7.8	8.1
Factoring	10.3	6.4	86.5	92.1	21.6	21.8
Collateralised loan	7.6	2.0	91.2	96.8	21.5	21.8
Consumer loan	1.9	1.8	79.2	97.6	8.7	8.9
Personal loan for business purposes	0.2	1.4	81.7	98.0	9.3	3.4
Loan with deposit coverage	4.8	0.8	92.5	98.5	20.3	22.5

Note: The table does not include "I do not know" answers.

Source: Financial Literacy in Hungary research, 2006 and 2017

2006 on a similar sample –, the best-known services among respondents were overdrafts, leasing, working capital loans and investment loans, mortgage credit and consumer loans, while the least known services were factoring, collateralised loans, investment units and loans with deposit coverage. Compared with the situation ten years ago, the use of all loan types has dropped sharply by 5–10 percentage points. Comparing the last two columns of Table 2, it is evident that the entrepreneurs’ awareness of different loans has increased significantly over the past 10 years. There are hardly any respondents who do not know the products.

With respect to the use of the bank loan products listed above (*Figure 2*), most SMEs (nearly a third) chose overdraft and leasing. Approximately the same percentage (24% and 25%) took out working capital and investment loans, but this implies a decline com-

pared to the status ten years ago. The credit crunch observed between the two periods is clearly perceivable: considerably fewer owners could or were willing to finance the operation of their enterprises by taking out loans.

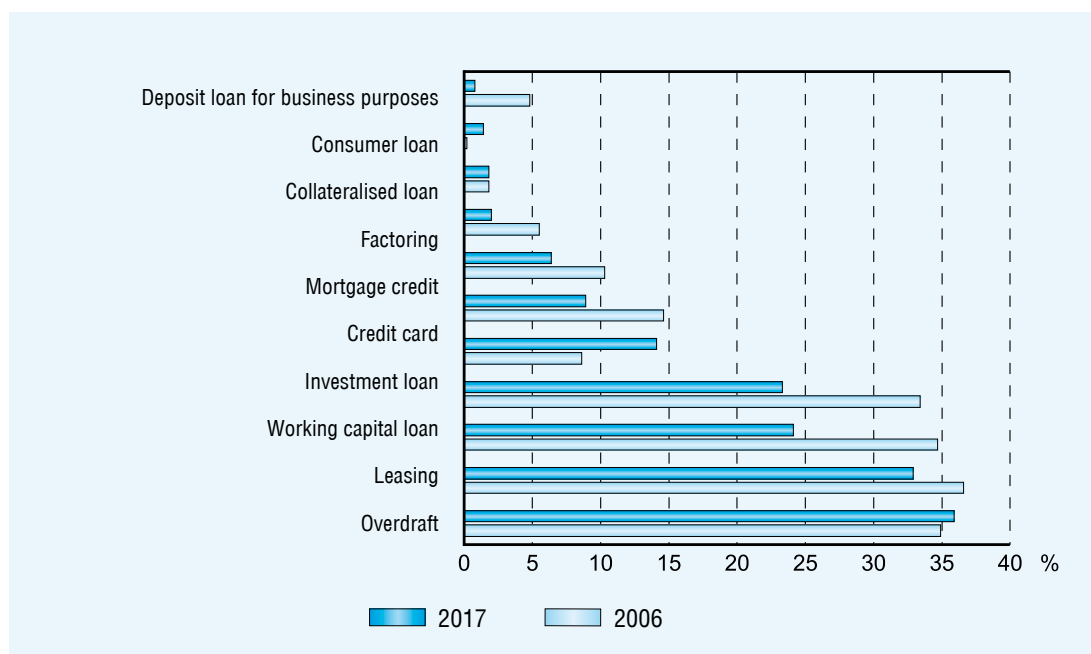
Savings

More than half of the SMEs (53.1%) save money. They prefer the types of savings listed in *Figure 3*.

UNFIXED HUF DEPOSITS AND CASH are preferred by nearly 2/5 of the savers. This is a passive form of money management. We would like to draw special attention to the fact that the percentage of cash and unfixed HUF deposits has become extremely high by 2017, which suggests the revival of the cash culture. For some reason, entrepreneurs no longer choose fixed deposits: they need to be able to pay immediately, the reason for which should be examined in more detail. It is striking that this

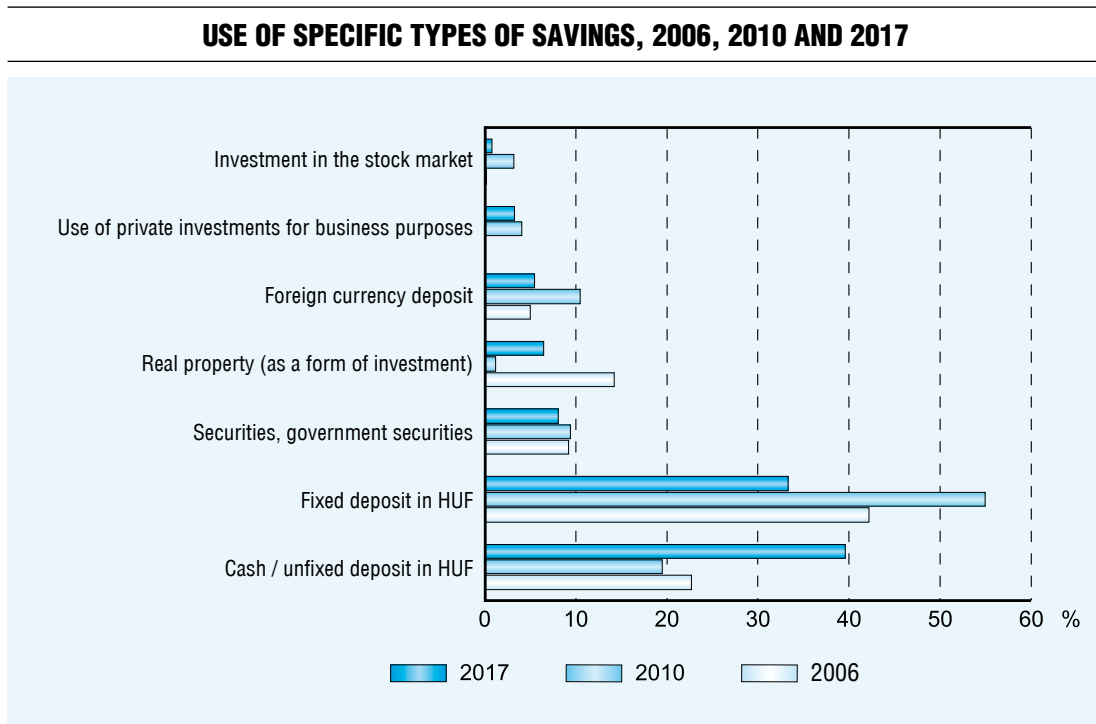
Figure 2

USAGE OF BANK LOANS, 2006 AND 2017



Source: Financial Literacy in Hungary research, 2006 and 2017

Figure 3



Source: Financial Literacy in Hungary research, 2006, 2010 and 2017

rate has doubled compared to the previous two surveys.

FIXED HUF DEPOSITS, which imply the lowest risk and low interest earnings, is preferred by one-third of the SMEs asked. This percentage has significantly decreased, especially compared to the 2010 survey (from 54.9% to 33.3%).

Every 7th enterprise chooses **SECURITIES OR GOVERNMENT SECURITIES** as a form of savings. Comparing the dates examined, their share has not changed considerably.

Enterprises may set aside savings or accumulate reserves in the form of investment into real property as well. 5 firms out of 100 that reported to save money using this method. The share of investment into real property was much higher in 2006, but it dropped in 2010. In 2017, the share of this type of investment was six times higher than during the years of the crisis.

Saving in **FOREIGN CURRENCY DEPOSITS** was popular in 2010, whereas investment in the stock market was fairly low. It is worth mentioning that there appeared to be no connection between the savings of enterprises and private savings in 2006. However, the results of the last two measurements were 3–4%, which suggests that there is a “link” between the finances of enterprising households and the finances of the enterprise. The link between the finances of the enterprise and personal/family finances also needs to be explained in the future.

IN THE CASE OF OTHER INVESTMENTS, entrepreneurs reported the expansion of stocks, loans provided to the parent company and marketing activity as forms of savings. This small group has no actual savings, but seeks to reduce the future expenditures of the company by pre-financing certain production processes. Consequently, these answers were not included in the detailed analysis.

Insurance

Refraining from insurance is typical of the traditional financial culture. Respondents often referred to taking out an insurance as an “unnecessary waste of money”. The refusal of taking out a loan – i.e. getting indebted – is also common. Such attitudes are deemed to be indicators of distrust in the institutions of the economy. The lack of market skills, the difficulty of navigating between institutions, uncertainty and the attitude of rejection towards financial institutions are correlated. This lack of confidence may be mitigated by a highly developed institutional system in the market, the widening range of products provided by banks, bank competition and well-informed clients.

In 2017, after a serious crisis, insurance became widespread among SMEs as well. 94.9 per cent of the SMEs hold some kind of liability insurance policies, and a similar percentage

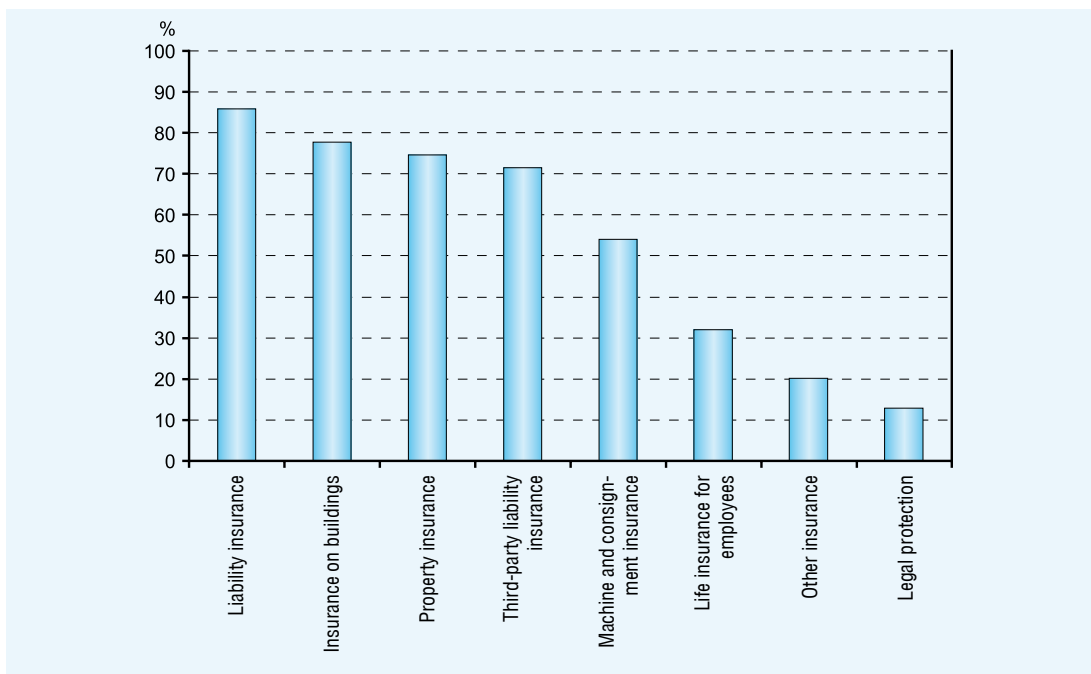
of SMEs hold building insurance, property insurance or third-party liability insurance (*Figure 4*).

More than half of the companies took out an electrical equipment insurance, a machine insurance or a consignment insurance. One third of the enterprises hold a workplace insurance for employees and one-eighth of them hold a legal protection insurance. The high percentage of other insurances signals that SMEs hold mandatory liability insurance (35.2% of all other insurance types), service and product liability insurance (14.5% of all other insurance types), and an increasing number of companies take out agricultural indemnity insurance and environmental insurance (12.3% of all other insurance types). Loan repayment insurance and apprentice/trainee indemnity insurance have also appeared.

As we mentioned, 67.9% of the enterprises had loan debt in 2017; however, only 27.8%

Figure 4

BUSINESS INSURANCE TYPES TAKEN OUT BY SMES, 2017



Source: *Financial Literacy in Hungary research, 2017*

of the respondents took out a loan repayment insurance. This percentage is surprisingly low compared to the percentage 10 years ago (Table 3). Apparently, insurance product development turned the attention of the risk insurance community from real estate collateral to combined insurance packages taking life situations into account.

Solvency

Whether entrepreneurs pay each other for their services and receive their money in time is considered to be a fact that characterises financial literacy. Circular debt is a well-known phenomenon. Debt collection can be initiated by the enterprises by commissioning institutions or enterprises specialised in debt collection. However, only a few enterprises resort to the aforementioned legal institutions of debt collection.

In 2016, two-thirds of the companies in the SME sector (67.7%) received their money later than two months after issuing an invoice (Figure 5). In the case of one-fifth of the enterprises that received their money late, payment was regularly or almost always late. For one-fourth of the companies it rarely occurred (on a quarterly basis), for another fourth, it happened occasionally (once or twice a year). One

third of the companies questioned claimed that their invoices had never been settled late; they had always received the invoiced revenue within three months. These data reflect that “mutual” delay is fairly common.

Groups of SMEs according to financial behaviour

We analysed the topic “financial literacy of SMEs” more thoroughly by classifying SMEs according to financial behaviour indicators. We examined whether clearly defined groups of SMEs can be formed based on the following financial habits and attitudes described in detail in the previous chapter:

- 1 usage of online banking services,
- 2 borrowing habits,
- 3 accumulation of savings
- 4 striving for security and
- 5 liquidity.

In the individual dimensions – (1)–(5) – indicators were formed on the basis of the frequency at which the different options were used. However, as these options were obviously captured on different scales, we used a standardised form in the calculation.

By applying hierarchical clustering, we

Table 3.

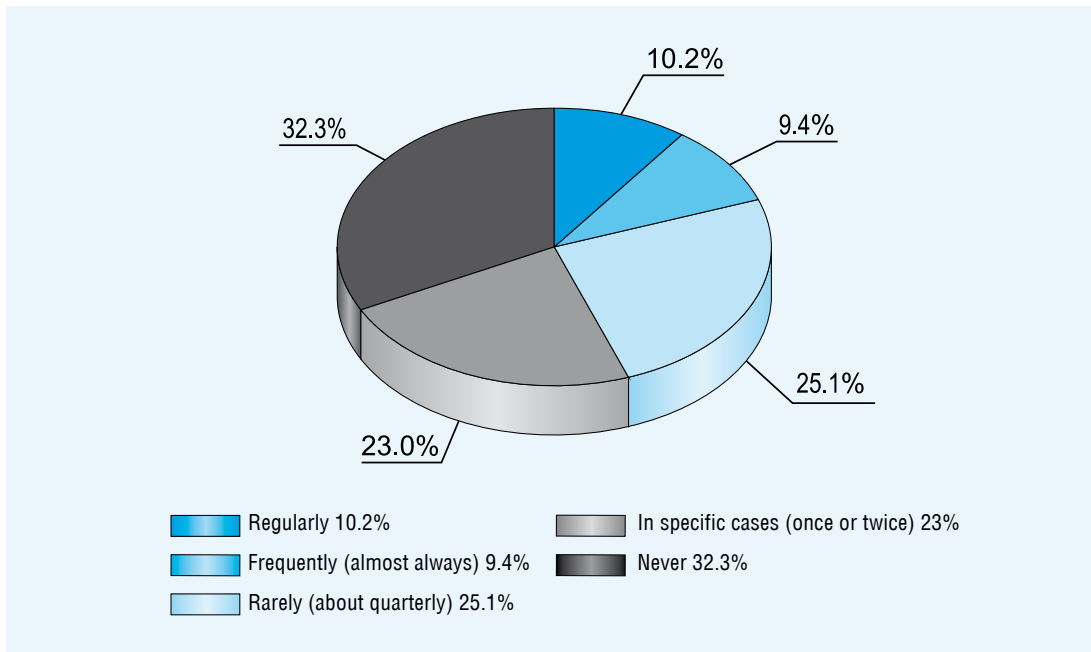
LOAN REPAYMENT INSURANCE OF SMES, 2006 AND 2017 (PER CENT)

Do you hold a loan repayment insurance policy?	2006 N ₂₀₀₆ =1028	2017 N ₂₀₁₇ =1000
No	70.2	72.2
Yes; distribution within this category:	29.4	27.8
• <i>real estate collateral insurance</i>	69.7	54.6
• <i>mixed package: real estate, life and insolvency insurance</i>	<i>n.a.</i>	20.1
• <i>insolvency insurance</i>	14.1	11.5
• <i>life insurance</i>	6.6	3.7
• <i>other collateral insurance</i>	9.7	10.0

Source: Financial Literacy in Hungary research, 2006 and 2017

Figure 5

**LATE SETTLEMENT OF INVOICES IN THE SME SECTOR,
2017**



Source: Financial Literacy in Hungary research, 2017

determined the optimal number of clusters. Based on this method, the enterprises of the sample can be divided into three groups. Next we formed groups by way of K-means clustering.⁴ Figure 6 clearly shows that 42.5% of the SMEs (N=341) belong to cluster 1, which has the largest sample size. 35.5% of the enterprises (N=285) are in cluster 2, while cluster 3 is even smaller (N=176). Based on the results of the final cluster centres, the features of the individual clusters are summarised in Table 4.

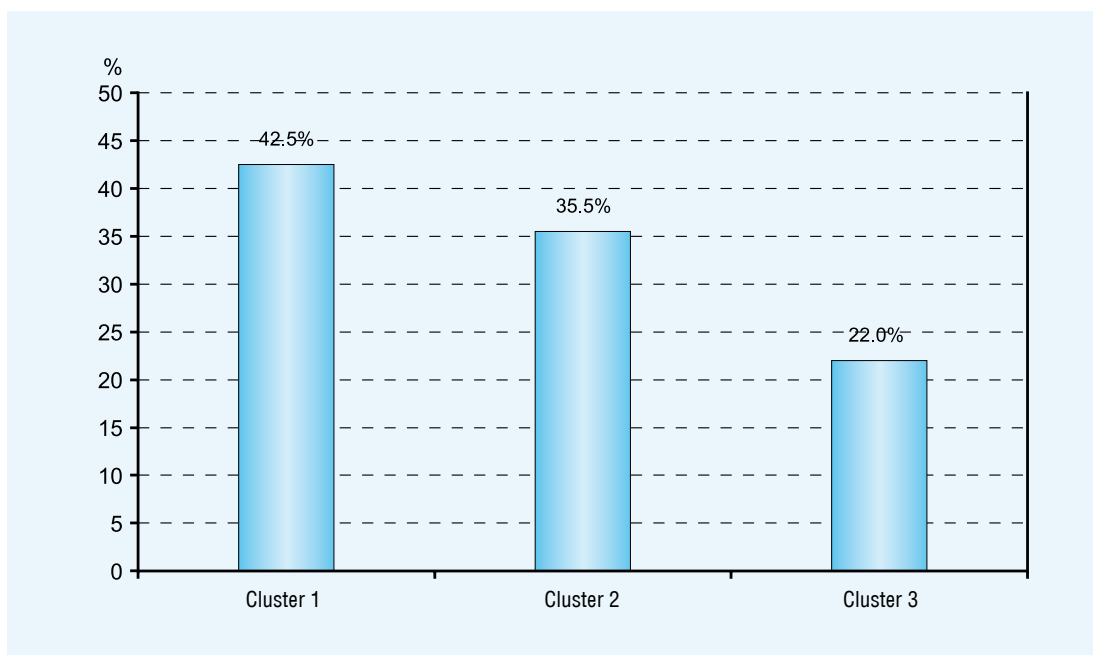
CLUSTER 1: The largest group of the sample consists of traditional, thrifty SMEs. They have several types of savings, reduce their risk by means of insurance to some extent, their and their partners' solvency is predictable. As opposed to other entrepreneurs, they refuse loans (they are the least likely to take out loans), and they are not likely to use up-to-date online banking services either.

CLUSTER 2 This cluster includes SMEs that lack resources. As opposed to the members of other clusters, they save the least amount and spend the least amount on insurance. At the same time, unlike the entrepreneurs in the previous cluster, they take out more types of loans. They are also different with respect to the arising cash-flow difficulties: they are affected by the late settlement of invoices to a medium extent. The distinctive feature of the enterprises in Cluster 2 is that they are the least open to the use of innovative (up-to-date) banking services.

CLUSTER 3 SMEs belonging to the smallest cluster, which makes up nearly a quarter of the sample, finance their businesses very "smartly". By means of taking out insurance policies, they try to reduce several risks. They use the most loan types for financing. They also strive to take advantage of most new online banking services.

Figure 6

CLASSIFICATION OF SMES BASED ON FINANCIAL LITERACY INDICATORS, N=802



Source: Financial Literacy in Hungary research, 2006 and 2017

Table 4

CLASSIFICATION OF SMES BASED ON FINANCIAL LITERACY INDICATORS AND THE FEATURES OF THE GROUPS, N=802

Variables of corporate financial behaviour*	Cluster 1 42.5 per cent Traditional, thrifty SMEs	Cluster 2 35.5 per cent SMEs lacking resources	Cluster 3 22.0 per cent Smartly financing SMEs
The intensity of the application of up-to-date online banking services is	low	the lowest	the highest
Occurrence of saving types	the highest	the lowest	medium
Use of bank loan product types	the lowest	medium	the highest
Use of insurance types	medium	the lowest	the highest
Late settlement of invoices, based on the frequency of occurrence	the lowest	medium	the highest

*The number of banking products, insurance products, etc. the enterprise uses or buys from the diversity of options.

Source: Financial Literacy in Hungary research, 2006 and 2017

They have a moderately thrifty, accumulative attitude when it comes to handling money. At the same time, as opposed to the enterprises in other clusters, they are the most likely to receive their money late on a regular basis, even beyond two months after issuing the invoice.

MULTIVARIATE ANALYSIS OF THE FEATURES THAT DETERMINE THE FINANCIAL LITERACY OF SMES

Below we examine the extent to which corporate demographic and behavioural variables influence the financial behaviour of the groups of our sample segmented by the clustering procedure. Consequently, our dependent variable is a categorical variable that indicates the subjects' belonging to the groups separated on the basis of financial literacy indicators. We sought an answer to the question whether these groups have significantly different features based on corporate demographic and behavioural characteristics.

The correlation between dependent and independent variables was examined by means of the multinomial logistic regression model. It is a specificity of multinomial logistic regression analysis that, in addition to the three values of our dependent variable (three different groups of enterprises), it estimates two models which are compared to the benchmark group in pairs. In our analysis, the group of traditional, thrifty SMEs (Cluster 1) was chosen as a benchmark, as it is a statistically modal cluster. Based on the indicators examined, this group is the most likely to rely on own resources in financial management; it takes out loans only to the extent required, spends moderate amounts on insurance, avoids late payment and the resulting problems. Based on the indicators measured, we believe that entrepreneurs in Cluster 2 try to ensure the necessary conditions for financial management by

reducing costs, while the members of Cluster 3 do the same by involving external resources, which is perhaps riskier.

Corporate demographic features constitute one of the groups of the explanatory variables. We approximated the size of the enterprise based on the number of employees, and used it as a categorical variable [(1) 10–19 employees, (2) 20–49 employees and (3) 50–249 employees] in the analysis. In order to measure the changing effect of sectorial variables based on the core activity of the companies, we used five categorical variables in the equation:⁵

- ① manufacturing and food industry,
- ② construction industry,
- ③ trade,
- ④ transportation and tourism,⁶ and
- ⑤ business services and other qualified services.⁷

In order to measure the age of the company, we used a categorical variable based on the original continuous variable:

Foundation

- ① before 1997,
- ② between 1997–2007,
- ③ after 2007.

The indicator of the ownership structure of the enterprise, which refers to the composition of the owners as family members (relatives), friends, acquaintances and professionals, was converted into a dichotomous variable and entered into the model along the main fault line separating professional and non-professional owners. The other group of explanatory variables consists of behavioural variables, including export activity (dichotomous variable: does the company export?), the personal qualifications of the SMEs' owners (dichotomous variable: did they acquire their management skills in higher education or professional training?), as well as the innovation activity of the company (dichotomous variable: did the company introduce any product or procedure innovation in the two years pre-

ceding the survey?). In addition, we examined the regional location of the companies, which was included in the equation as a categorical variable, based on the economic development (per capita GDP) of the regions.

1 the economically most developed central region,

2 more developed regions in the countryside,

3 less developed regions.⁸

The model was constructed step by step: the explanatory variables were gradually included, in groups, so that we could examine the effect of the individual variable groups

Table 5

PARAMETER ESTIMATES OF THE MULTINOMIAL LOGISTIC REGRESSION – BENCHMARK: TRADITIONAL, THRIFTY SMES

	Financial behaviour of SMEs	
	SMEs lacking resources	smartly financed SMEs
Company size		
• 20–49 employees	3.212***	0.696*
• 50–249 employees	1.610**	1.026
Sector		
• Manufacturing and food industry	0.434**	0.677
• Construction industry	0.678	0.662
• Trade	0.696	1.514**
• Business services and other qualified services	0.301***	0.522**
Date of foundation		
• between 1997 and 2007	1.098	2.870***
• after 2007	1.166	1.375*
Ownership: family member, friend	1.326*	1.108
EXPORT ACTIVITY	0.669*	1.106
Financial and financial management skills	1.185	1.486**
Innovation activity	0.572**	1.008
Regional location		
• The most developed central region,	0.614**	1.750**
• More developed countryside regions,	0.780	0.127

Note: *** p < 0.001; ** p < 0.01; * p < 0.05; N=679

Benchmark group: 10–19 employees; transportation and tourism; established before 1997; ownership structure is organised on professional grounds; does not carry out any export activity; the owner of the enterprise acquired his/her financial and management knowledge through informal channels, based on his/her own experience; the company has not introduced any technological innovations in the past two years; less developed regions.

Source: own editor

on the dependent variable and on each other. The estimated results are shown in *Table 5*. As Cluster 1 was used as the benchmark category, the odds ratios listed in *Table 5* show how likely it is that the company gets into the group of enterprises lacking resources (2), the group of smartly financed companies (3) or the category of traditional, thrifty enterprises (1).

First, let us examine how likely it is that SMEs get into the cluster of enterprises lacking resources (Cluster 2); that is, into the group of companies that save the least, do not take out many types of insurance and are the least open to use online banking services. We find that the size of the enterprise increases the likelihood of a company's falling into this cluster: compared to enterprises with 10–19 employees, SMEs with 20–49 employees are three times, while companies employing more than 50 persons are 1.6 times more likely to belong to this group. Examining sectorial effects, it is clear that, compared to the transportation and tourism sector, companies operating in the manufacturing and food industry, providing business services or other qualified services lack resources to a significantly lesser extent. In contrast with the age of the company, the variable measuring the composition of ownership has a significant effect: if the owners of a company consist of family members and friends, the company is more likely to belong to Cluster 2 than SMEs organised only on the grounds of professional competence. Based on our results, production for exports and the introduction of technological innovations are less likely to occur in this group. At the same time, the explanatory power of financial, financial management and leadership competence (business management knowledge acquired in formal education) is not significant. As opposed to regional location in the less developed countryside, belonging to the most developed

central region significantly decreases the occurrence of a corporate financial attitude that overcomes the lack of resources on its own, in a subdued manner.

Companies in the group of **SMARTLY FINANCED ENTERPRISES** (Cluster 3) make the greatest effort to reduce risks by taking out insurance policies. They take recourse to the most loan types, and use up-to-date online banking services the most intensely. The late settlement of invoices is the most frequent in this group, odds ratios predict converse probability compared to the previous groups. The larger an SME is, the more likely it belongs to this cluster. Companies carrying out trading activity are significantly more likely to be smartly financed, while companies providing business or other qualified services are significantly less likely to be in this cluster. Compared to enterprises which are at least 20 years old, younger companies, especially those which were established between 1997 and 2007, are considerably more likely to be “forced” to finance their operation in a smart manner. The composition of ownership and the explanatory power of export and innovation activities are not significant in this group. On the other hand, the explanatory power of financial management skills is significant: compared to the group of enterprise owners who acquired financial skills through informal channels or based on their own experience, company owners who acquired financial and management skills in systematic training are nearly 1.5 times more likely to finance their companies smartly. Belonging to the most developed central region also increases the probability of smart financing behaviour on the part of company owners.

Consequently, **SMEs LACKING RESOURCES** tend to be larger SMEs, whose owners are mainly family members, friends or acquaintances. They do not introduce any technological innovations, do not appear in foreign markets

and are located in less developed regions in the countryside. These enterprises do not expressly operate in the manufacturing industry or provide highly qualified services.

As opposed to the owners of SMEs lacking resources, the owners of **SMARTLY FINANCED SMEs** typically manage trading companies with a limited number of employees in the developed central region. As these companies are not older than 20 years, compared to other clusters of entrepreneurs, their owners have the strongest financial and financial management skills that signify substantiated decisions.

CONCLUSIONS

Our study analysed the financial management behaviour of enterprises based on the elements of financial literacy identified among the owners of domestic small and medium-sized enterprises. We wanted to find out whether entrepreneurs know and use certain modern banking and financial services and new products; whether they have an accumulative attitude towards money or they do not intend to save; whether they take out loans for investment purposes or do not want to become indebted; whether they strive for security by taking out different types of insurance policies, and whether they are capable of tackling the temporary insolvency of their partners.

Based on the findings of our primary research, today almost all SMEs use online banking. Since 2010 – when only 78 of the enterprises used the internet (*Kepka, 2011*) – online banking has become widespread, standing at 95% today. In the 2020s, the gaining ground of infocommunications devices and the guarantees ensuring the security of their operation will facilitate the further spread of the use of financial products on the internet:

we found that users have become fully aware of the different products over the past ten years. Obviously, economic policy influences the use of certain important financing institutions (financial products). Prior to the years of the 2008 financial crisis, companies borrowed heavily. After a temporary decline, loans play a key role once again. It is also apparent that the range of insurance products has become wider and more modern on the supply side, and entrepreneurs have changed their adverse attitude towards insurance products. Based on our data, as a result of government measures and the experience gained by entrepreneurs during the crisis, financial discipline has improved, and our data point to a decline in the problems stemming from the lack thereof.

In our analysis, we presented three homogeneous groups of small and medium-sized enterprises, based on financial literacy indicators. The three groups of entrepreneurs manage the operation of the respondent companies with markedly different financing and financial management methods.

The largest group (Cluster 1) comprises 42.5% of the enterprises. Based on their financing and financial management methods, they are considered to be traditional, as their operation is financed from own resources, they have savings and, albeit in a subdued manner, they take recourse to the option of insurance policies in order to reduce their risks. As they do not take out loans and they refrain from using modern banking services, their management is considered to be expressly thrifty.

In our analysis we compared other groups to this cluster. Based on the regression parameters, this group includes small enterprises employing no more than 20 people, operate in industry, in the construction industry, provide business or counselling services and already existed in the 1990s. Their ownership structure was organised on professional basis and they operate in more developed rural re-

gions. Based on our data, they operate in the domestic market, and do not tend to take part in innovation.

Entrepreneurs belonging to Cluster 2 appear to be in a worse situation than those in the larger group. Despite their lower number, they still represent more than one-third of the SME sector. Regarding financing and financial management, the shortage of resources determines the financial literacy attitude reflected in their decisions. With limited own funds and savings, they take recourse to loans, but they still do not rely on different insurance types. Problems arising from the settlement of invoices affect companies that struggle with a lack of resources and refrain from modern services offered by banks to a medium extent. Not surprisingly, technological innovation and the endeavour to be present in foreign markets are not typical in this group, as these enterprises do not represent knowledge-intensive or professional sectors such as the construction or the manufacturing industry. They tend to be medium-sized companies in less developed regions.

Small-sized enterprises belonging to Cluster 3 have to overcome difficulties by smart management. They tend to be the youngest

and not knowledge-intensive enterprises operating in trade in the developed central region. Their financial decision-making style and financial literacy are influenced (albeit not significantly) both by the ownership structure – that consists mainly of friends and relatives – and by exports. However, due to the professional entrepreneurial and financial skills acquired through education, these companies are significantly more likely to take out a wide range of loans to finance their operation, use modern banking instruments and take out different types of insurance. Moreover, their financial management is characterised by the accumulation of reserves, while they are the most exposed to the risk of non-payment.

Finally, we assert that despite the fact that only a few empirical surveys have been conducted in Hungary on the financial literacy of small and medium-sized enterprises, the Hungarian SME sector can be segmented very well along the financial literacy indicators examined by us. It is important to continue the research that explores the population's financial literacy and money handling habits and the attitudes of households, as ultimately, it contributes to deepening our understanding of the entrepreneurial skills of the population.

NOTES

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² As almost all of the enterprises answering our questions use online applications for checking their bank account balance and account history, they were excluded from our subsequent analysis, and only the

SMEs using the not so widespread online banking services were included.

³ Slightly fewer enterprises use banking applications in matters related to their enterprise than in personal matters (25% of the respondent SME owners use banking applications in personal matters, as well).

⁴ Cluster analysis treats these variables together, attempting to form homogenous groups in which the elements are as close to each other as possible and as

far from other groups as possible in all aspects (*Aldenderfer – Blashfield*, 1984).

- ⁵ Companies operating in the areas of mining and the energy sector were excluded from the analysis due to the very small sample size (4 companies).
- ⁶ Companies dealing with arts, entertainment and leisure activities were also classified into the category of transportation and tourism.
- ⁷ The category of business services and other qualified services include the following activities: informa-

tion, communication; financial and insurance activities; real estate transactions; professional scientific and technological activity, administrative and service supporting activity, education.

- ⁸ In 2016, the per capita GDP was HUF 5,327 thousand (around EUR 16,550) in the central region (the capital city and its agglomeration), HUF 3,209–3,765 thousand (around EUR 9,930–11,650) in the more developed country regions (Central and Western Transdanubia) and HUF 2,182–2,263 thousand (around EUR 6,755–7,006) in less developed regions (*Source*: www.statinfo.ksh.hu).

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