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CONFERENCE REPORT

Bank resolution as a new MNB function – resolution of MKB Bank*

Krisztina Földényi Láhm – András Kómár – Antal Stréda – Róbert Szegedi

In this study, the authors provide a comprehensive overview of the process of the successful resolution and reorganisation of MKB Bank Zrt., and the practical implementation of the resolution regulations, which was one of the first applications of these regulations in the European Union. The authors present the resolution tools and powers used by the central bank of Hungary (Magyar Nemzeti Bank), as the resolution authority, emphasising the indispensable cooperation between Hungarian and European Union authorities and institutions. As a conclusion, they find that the only fast and efficient way to protect the stability of the Hungarian financial system without the use of public funds was to apply the new resolution toolset. In connection with the resolution procedure, the creditors of MKB Bank Zrt. suffered no losses, as the funds of the bank's customers and business partners were safely protected at all times.

Journal of Economic Literature (JEL) codes: E48, H12, G01, G29

Key words: MKB Bank, MNB, financial stability system, resolution, resolution authority, Resolution Act, Resolution Fund

1. Introduction

The financial crisis of 2007–2008 demonstrated that national states lacked tools efficient enough to manage crisis situations at financial institutions. The crisis management in relation to the investment bank Lehman Brothers was a good illustration of the fact that, in the case of significant financial institutions on the brink of insolvency, a lengthy liquidation procedure with often uncertain results may cause disturbances on the market and jeopardise financial stability.

In most countries, the only real alternative to liquidation was to save the banks using state funds (via a so-called "bail-out"), in the form of capital increases or various guarantees. The Commission of the European Union (hereinafter: European

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* The views expressed in this paper are those of the author(s) and do not necessarily reflect the offical view of the Magyar Nemzeti Bank.

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Commission) approved state aid for financial institutions in the amount of EUR 4.5 trillion from October 2008 to October 2011 (*European Commission 2012a*).

Typically, governments were only able to provide the funds required for bail-outs by issuing government bonds in significantly higher volumes, and in many cases, because of the high indebtedness, this resulted in imbalances in state budgets and increased volatility in national economies. In a number of cases, management of the financial crisis developed into a crisis of sovereign states (e.g. Ireland, Greece). The costs of state bail-outs were ultimately borne by taxpayers, which triggered social unrest in several cases. Therefore, it was urgently necessary to set up a framework which would be able to remedy the crisis situation of financial institutions in a manner that it did not threaten the balance of the state budget and did not render national economies vulnerable. As an alternative to liquidation and state bail-out, a number of countries around the world created resolution frameworks, which – together with strong official powers – lay the burdens of financing the crisis management not on the taxpayers, but primarily on the owners of banks, and ultimately on agents in the financial sector.

The Financial Stability Board (FSB) created by the G20 group of the world's leading economies published the features of efficient resolution frameworks in 2011 for the first time (*FSB 2011; 2014*) and offered guidance for the formulation of regional and national regulations regarding resolution. The European Commission published its proposal on the recovery and resolution of credit institutions and investment firms in 2012 (*European Commission 2012b*), which was adopted and promulgated in 2014 as a result of a legislative process lasting several years.[1] Member States were obliged to transpose the provisions of the directive into national law by 31 December 2014, but the Hungarian Parliament – as the first in the European Union – adopted the national resolution regulations based on the EU directive in the summer of 2014, weeks before the effective date of the directive.[2] Consequently, the Hungarian resolution framework was already in place in 2014, ensuring that a crisis at a domestic financial institution – which could potentially threaten financial stability – would not be solved using taxpayer money, but rather using market financing and applying resolution tools that comply with global standards and best practices, as well with the EU regulations.

[1] Directive 2014/59/EU of the European Parliament and of the Council (15 May 2014) establishing a framework for the recovery and resolution of credit institutions and investment firms and amending Council Directive 82/891/EEC, and Directives 2001/24/EC, 2002/47/EC, 2004/25/EC, 2005/56/EC, 2007/36/EC, 2011/35/EU, 2012/30/EU and 2013/36/EU, and Regulations (EU) No 1093/2010 and (EU) No 648/2012, of the European Parliament and of the Council, text with EEA relevance, OJ. L. 173, 12.6.2014. p. 190–348, http://eur-lex.europa.eu/legal-content/HU/TXT/PDF/?uri=CELEX:32014L0059&from=HU, downloaded: 15 July 2016

[2] Act XXXVII of 2014 on the further development of the system of institutions strengthening the security of the individual players of the financial intermediary system

2. MNB as the resolution authority – new roles, more efficient intervention options

One of the key issues in the resolution framework is which organisation will perform the functions of the resolution authority. In Hungary, since 1 October 2013, the Magyar Nemzeti Bank (hereinafter: MNB) has been designated as the resolution authority. However, the detailed rules regarding its authorisation and activity were only adopted in the summer of 2014, after the implementation of the resolution directive, providing 60 days for preparations to the authorities and market players.

The role of the resolution authority significantly expanded the competence of the MNB which had already been augmented with other functions (e.g. supervisory activity), allowing (in the last resort) the MNB to take over the exercise of ownership rights, in addition to management rights at a financial institution in crisis situations.

2.1. Conditions of placing under resolution

The MNB may place a credit institution or investment firm under resolution when the following three conditions are simultaneously met:

a) the MNB, acting in its scope as the supervisory authority (hereinafter: Supervisor) determines that the institution is failing or is likely to fail;

b) considering the circumstances, the MNB, as the resolution authority, deems it unlikely that any action other than resolution – including the actions of the Supervisor, the institution, the institutional protection scheme or other market players, and the possibility of writing off or transforming the capital elements that can be executed by the MNB, as the resolution authority – would prevent the insolvency of the institution;

c) in the opinion of the MNB, acting as the resolution authority, the resolution is justified in the public interest.

Therefore, the MNB does not have to wait until a financial institution fails to place it under resolution, when crisis management already has its constraints. The MNB can take action in a preventive manner, intervening at a point in time when it expects that the financial institution will likely fail in the near future, within 12 months at the most, without the intervention of the authorities. Public interest is also an important condition, because in the lack of public interest in resolution, the insolvent financial institution will be liquidated.

2.2. Resolution tools

As the resolution authority, the MNB can use the following resolution tools:

a) sale of business tool: selling some parts or all of the institution to market players;

b) bridge institution tool: selling some parts or all of the institution to a bridge institution (to bridge bank or bridge investment firm);

c) asset separation tool: transferring some parts of the institution under resolution or the bridge institution to a resolution asset management vehicle;

d) bail-in tool: forcing the creditors to bear losses for the success of resolution.

In the course of a resolution process, the MNB is free to combine the various resolution tools; the only restriction is that it may not apply asset separation on its own. In the resolution of MKB Bank Zrt., (hereinafter: MKB Bank), the sale of business and the asset separation resolution tools were used.

2.3. Guarantee role of asset valuations in resolution

When resolution is ordered, the MNB can exercise wide-ranging powers, and therefore the regulation contains guarantees to protect the parties affected by the intervention (e.g. strict legal conditions for official actions, remedy options, compensation rules), among which independent valuations play a special role. As a main rule, resolution actions shall be based on independent valuations, and if that is not possible in advance because of lack of time or other circumstances, the MNB may take resolution actions on the basis of its own provisional valuation, but even in this case, an independent valuer shall be appointed subsequently to review the calculations of the resolution authority (so-called ex-post definitive valuation). A separate type of valuation is the 'no creditor worse-off' valuation (hereinafter: NCWO valuation) which determines what would have been the position of the owners and creditors if the affected institution had been placed under liquidation, instead of resolution. Legal regulations stipulate that owners and creditors may not find themselves in a position that is worse than the liquidation scenario. If the NCWO valuation for any owner or creditor finds that liquidation would have yielded better results for them, they may claim this difference and it shall be paid to them by the Resolution Fund.

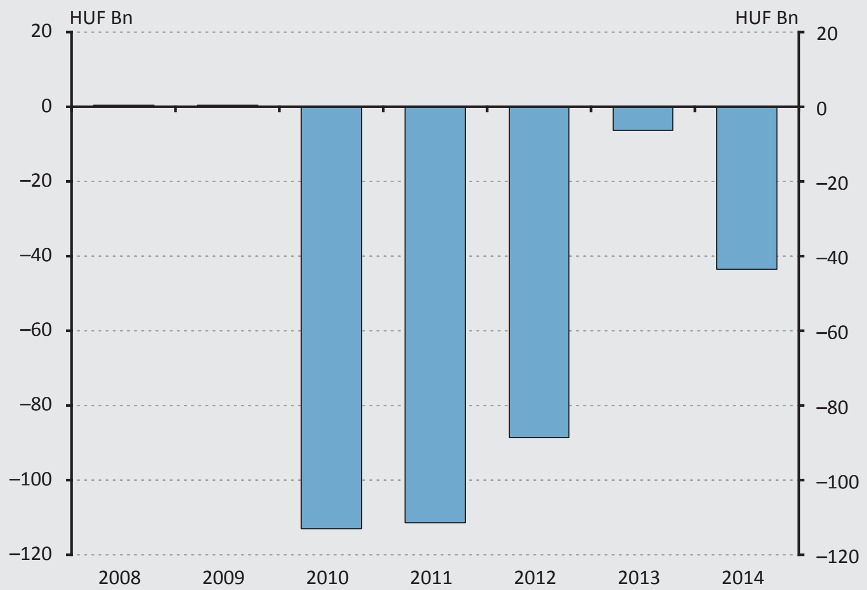
Within just a few months of formulating the regulations for the new function, in December 2014, MNB already had to face a situation in which the efficient management of the issue was only possible using resolution tools.

3. Acquisition of MKB Bank by the state and subsequent placement under resolution

As a result of the financial crisis, the willingness of domestic banks to lend dropped significantly. Amongst other things, maintaining sustainable economic growth required that the financial intermediary system become operational again, and for this to happen strong banks which were active in lending were needed. Achieving this strategic objective required a significant transformation of the banking system. The necessary consolidation of the banking system proceeded slowly, and thus the active involvement of the state became necessary. The banking market was characterised by a wait-and-see attitude, there were no acquisitions because of the risks in banks' balance sheets, and no new players appeared. Therefore, the state had to act as a catalyst in transforming the ownership structure.

Following the outbreak of the financial crisis in 2007–2008, MKB Bank suffered one of the largest losses among Hungarian banks, mainly due to its extremely poor quality real estate project loan exposure and higher-than-average market share. In addition, its owner – Bayerische Landesbank – also needed state aid, as the Bavarian state bailed out Bayerische Landesbank in the 2008 financial crisis,

Figure 1
MKB Bank's profit after taxation
(2008–2014)



Source: MNB

providing aid of EUR 10 billion.[3] Consequently, pursuant to the reorganisation agreement with the European Commission, its Hungarian affiliate had to be sold after one postponement, by the end of 2016.[4]

Due to the losses, it was necessary for the owner to continuously raise the capital of MKB Bank. Even though it did this, the capital ratio dropped below the minimum regulatory level. Bayerische Landesbank restrained the lending activity of MKB Bank and developments to support long-term operations, and the bank was unable to make any contribution to the growth of the economy. All of this indicated that the owners would not be committed enough to operate MKB Bank over the long term.

Mainly considering the financial stability aspects, the state recognised that by buying MKB Bank it could acquire a bank at a depressed price, which could be sold after transformation and could play an active role in lending (*Nagy 2016*). In determining the purchase price, important factors were that MKB Bank incurred significant losses, due to its real estate project loan portfolio which accounted for a high market share, and due to its inefficient operation.

Table 1

Market share of MKB Bank according to the balance sheet total and real estate project loans, and the cost/income index of the banking system and MKB Bank (2008–2014)

	2008	2009	2010	2011	2012	2013	2014
MKB market share to banking sector							
Balance sheet	9%	10%	10%	9%	9%	7%	7%
Commecial project loans	36%	39%	40%	37%	36%	33%	33%
Cost to income ratio							
MKB Bank	60%	45%	67%	87%	86%	76%	60%
Banking sector	51%	43%	43%	40%	49%	42%	42%

Source: Calculated on the basis of MNB data

Following a thorough audit of MKB Bank, the state purchased the bank at a negative price, thus creating coverage for expected further impairments and avoiding spending taxpayers' money on buying the bank. In practice, this meant that the purchase price of EUR 55 million (HUF 17 billion) agreed in the deal was available on the condition that Bayerische Landesbank waives the still outstanding loan of EUR 100 million (HUF 31 billion) extended to MKB Bank, as well as the repayment of the outstanding subordinate loan capital of EUR 170 million (HUF 53 billion). Thus, the state purchased the bank at a negative value, for EUR –215 million (HUF

[3] *European Commission* (*2008*): State aid: Commission approves state support for BayernLB http://europa.eu/rapid/press-release_IP-08-2034_en.htm
[4] *European Commission* (*2012*): State aid: Commission approves restructuring aid to BayernLB subject to repayment of EUR 5 billion of aid http://europa.eu/rapid/press-release_IP-12-847_en.htm

–67 billion). This transaction generated an extraordinary profit which was added to the profit reserves and partially stabilised the capital position of the bank. It is not certain whether a capitalisation of this extent could have been achieved without state intervention via the acquisition.

In December 2014, when the results of the European Asset Quality Review (AQR) were already known, it was clear that the only fast, efficient solution that was feasible without involving public funds would be to apply the new resolution tools, in order to restore the long-term operation of MKB Bank, which had significant impairment requirements and was expected to become insolvent within 12 months barring any external intervention, to protect Hungarian financial stability.

As a result of the above conditions, by the end of 2014, the MNB found that all three conditions for resolution were met, as defined in point 2.1, and therefore the bank would probably have failed within a year, and it seemed very likely that this situation could not be solved with any other tool, only with resolution, and that was what the public interest called for. Upon identifying the conditions for resolution, due to the lack of time, the MNB performed a provisional valuation, which was used as a basis for completing the resolution actions defined in the resolution action plan, and was confirmed by an appointed independent valuer in an ex-post definitive valuation.

4. The resolution action plan and its completion

In order to carry out the resolution, the MNB had to formulate a resolution action plan, which contained the resolution and reorganisation actions required to achieve the resolution objectives and the planned schedule of their application, as well as the financing plan of the resolution, and the expected contribution of the Resolution Fund.

4.1. Structure of the resolution action plan and the resolution objectives

From the resolution objectives defined in Act XXXVII of 2014 on the further development of the system of institutions strengthening the security of the individual players of the financial intermediary system (hereinafter: Resolution Act), the MNB wished to enforce the achievement of the following resolution objectives of identical priority, regarding the resolution of MKB Bank:

- protection of public funds by minimising the need for and the use of extraordinary financial support from the state in any form;
- ensuring the continuity of critical functions;
- eliminating the generation of impacts endangering the stability of the financial intermediary system, or terminating impacts already generated;
- protecting the deposits insured by the deposit protection system – including OBA – and the investment protection system, including Beva; and

• protecting the funds and assets of customers, and maintaining the confidence of deposit holders and investors in the stability of the financial intermediary system.

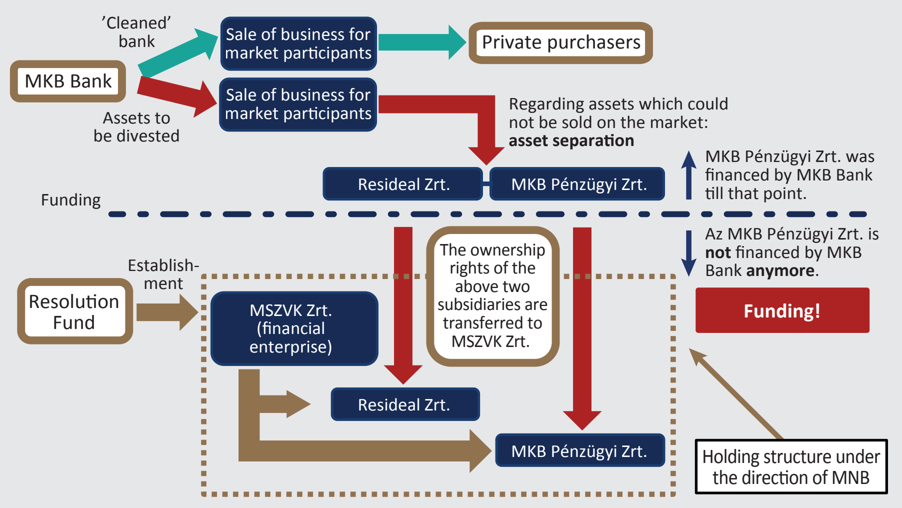
The resolution action plan aimed to achieve the above resolution objectives by performing the following steps that rely on one another.

• rationalising the operation of MKB Bank, transforming group-level investments, cutting operating costs, improving efficiency and thus restoring profitability;

• using the sale of business and the asset separation tools to separate the assets which caused the problems leading to the ordering of resolution, from the balance sheet;

• then, at the end of the process, selling MKB Bank under market conditions (sale of business by using resolution tools).

Figure 2
Resolution action plan for MKB Bank



Note: The company name of MKB Pénzügyi Zrt. was changed to Szanálási Követeléskezelő Zrt. (Resolution Claim Management Private Limited Company, hereinafter: 'SZKK Zrt.') after application of the asset separation tool, in order to highlight that it is institutionally separated from MKB Bank.
Source: Authors' compilation

4.2. Reorganisation measures and asset sale

In order to restore the long-term viability of MKB Bank and lay the foundations for a resilient bank, the performance of resolution and reorganisation measures – in line with the resolution action plan – was immediately started after the ordering of resolution.

In order to properly realise the resolution objectives and measures, the MNB exercised its resolution powers through four resolution commissioners after placing the bank under resolution. The resolution commissioners acted in the competence of the MKB Bank board and general meeting, within the limits defined by the MNB. As the resolution procedure and the reorganisation progressed according to plan, in July 2015 the MNB recalled the assigned resolution commissioners (*MNB 2015a*). At the same time, the renewed management of MKB Bank was entitled again to exercise the management rights, although the owner's rights were still exercised by the MNB through the Financial Stability Council.

As part of reorganisation, business lines which did not serve the basic commercial banking activities of MKB Bank, produced losses and tied up too much capital were terminated. As the first step of the transformation programme, in December 2014, MKB Bank sold almost all of its minority shares in the MKB insurance companies to the majority owner Versicherungskammer Bayern, in order to avoid further capital injections necessitated by the loss-making operations. MKB Bank kept a share of one percent, while the exclusive strategic cooperation continues.

Within the framework of transforming the subsidiaries, the ownership structure of the Euroleasing company group was resolved. Based on the agreement of the parties, in the separation of the company group, the companies making up the car financing business line were transferred to the 100 per cent ownership of MKB Bank, and the co-owner took over the companies involved in car trading and insurance brokering. Based on the agreement, MKB-Euroleasing Autópark Zrt. (involved in fleet management) was sold jointly. Following completion of the separation process, the capital position of MKB Bank improved and it managed to avoid significant potential losses, while the taking-over of the management rights of the companies added to MKB Bank contributed to the growth in the values of these companies, ultimately facilitating the sale of MKB Bank at more favourable conditions.

Under the reorganisation, the operation of MKB Bank was rationalised, and unnecessary cost elements were terminated, including reducing the number of branches, rationalising the organisational structure and management positions, and reviewing supplier contracts. The total impact of the comprehensive 20 per cent cost-cutting programme initiated in 2015 in order to ensure profitability over the medium term will appear by the end of 2016.

The definition of the medium-term strategy of MKB Bank was also given special attention. Within this sphere, initiatives included the development of the risk management methodology and IT background, the establishment of a central business support area, a review of the product portfolio, the deepening of customer relations with consultancy-like services, the development of investment services and the establishment of the conditions for digital banking services.

According to the resolution action plan, the assets (outstanding loans) selected for separation from MKB Bank first had to be sold on the market, using the 'sale of business' resolution tool, for the sake of transparency and to achieve the highest possible purchase price, and in this manner the will of market players who were considered as potential buyers was realised without any coercion, regarding the purchase of bad assets. The remaining assets which could not be sold on the market were separated under the asset separation. In the case of the sale of business, the Resolution Act prescribes the adherence to the following strict procedural requirements:[5]

a) the sale shall be as transparent as possible, having regard to the circumstances and in particular the need to maintain the stability of the financial intermediary system;

b) in the course of the sale, a distinction between potential recipients may only be made on the basis of objective criteria;

c) it shall not confer any unfair advantage on a potential recipient;

d) it shall consider the need to effect a rapid resolution action, while also taking into account that the resolution objectives must be reached to the fullest possible extent;

e) it shall be aimed at maximising, as far as possible, the sale price for the shareholding, assets and liabilities involved while also taking into account the resolution objectives;

f) it shall be free from any conflict of interest.

The market sale was performed in several directions. In an open market procedure carried out with the involvement of an internationally recognised consultant company, investors were able to apply for the purchase of the portfolio to be separated, either in a package, or in individual transactions. Potential investors were able to acquaint themselves with the portfolio elements to be separated through a data room and could make purchase offers. Reconciliation was also carried out with syndicated loan partners, concerning the sale of the shares of MKB Bank in certain deals, in order to facilitate the application of the sale of business resolution tool.

In the case of MKB Bank, considering the above conditions, the MNB managed to sell a portfolio representing a gross exposure of HUF 130 billion in total, at a purchase price of almost HUF 100 billion, to market players, by applying the sale of business resolution tool. Taking advantage of the option provided by the Resolution

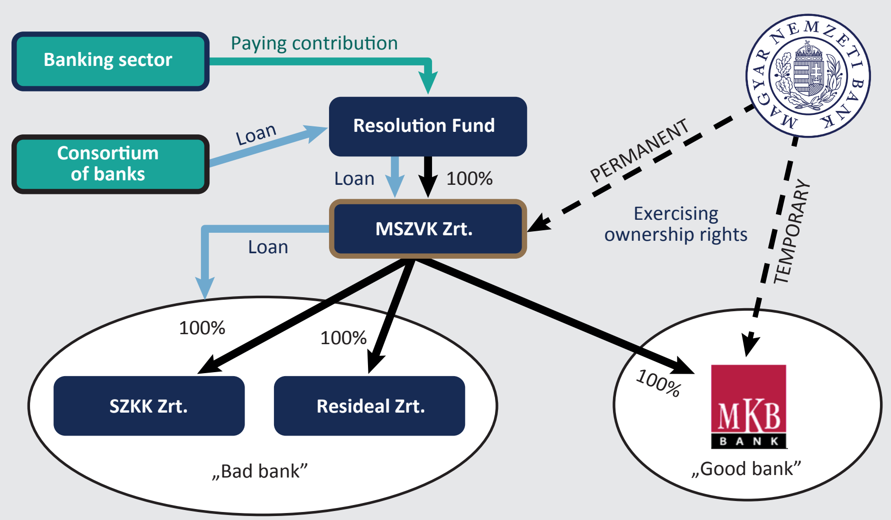
[5] *Section 42 (2) of the Resolution Act*

Act, a sale to a syndicated lending partner was carried out in one instance, in order to maximise prices. In this case, the reason why it was not an open sale was that the omission of the transfer of the portfolio would have significantly impacted the efficiency of the sale of business, as bad assets without any significance to other parties would have represented a lower value, and the transactions together qualify as a group of assets, therefore they represent a higher value to the syndicated loan partners than to other market players. The MNB procedure was completely in line with the relevant provisions of the Resolution Act and the European Union law, which allow for deviations from the above strict conditions in several cases, for instance, when – among others – adherence to the referenced requirements would undermine the efficiency of the sale of business resolution tool (*MNB 2015b*).

4.3 Separation of toxic asset portfolio that cannot be sold on the market, in an official manner

Assets that cannot be sold on the market were separated from MKB Bank by using the asset separation resolution tool and transferred to the resolution asset management vehicle (Hungarian Resolution Asset Management Vehicle, in Hungarian: Magyar Szanálási Vagyonkezelő Zrt., hereinafter MSZVK Zrt.), according to the following process:

Figure 3
Application of asset separation



Source: Authors' compilation

In the course of asset separation, the MNB considered the satisfaction of the legal conditions for application:[6]

a) the situation of the particular market for those assets is such that the sale of those assets through insolvency proceeding could have an adverse effect on one or more financial markets;

b) such a transfer is necessary to ensure the proper functioning of the institution under resolution or bridge institution; or

c) such a transfer is necessary to maximise proceeds from sale, winding up and liquidation.

The resolution asset management vehicle as a special market player

The resolution asset management vehicle is a financial institution with special status, which may only be owned or operate under the controlling influence of the state or the Resolution Fund, and which is set up with the purpose of taking over some or all of the assets, liabilities, rights and obligations of one or more institutions under resolution or bridge institutions.

At the present time, there is only one resolution asset management vehicle operating in Hungary, MSZVK Zrt. as a financial institution with a supervisory licence, which was established as a 100 per cent subsidiary of the Resolution Fund in the autumn of 2015, with subscribed capital of HUF 200 million and capital reserves of HUF 1.8 billion, and with the primary objective of taking over those portfolio elements from MKB Bank – at that time still under resolution – which cannot be sold on the market and are to be separated according to the resolution action plan.

MSZVK Zrt. manages the portfolio elements with the intention of maximising their value in a subsequent sale or otherwise. Following the resolution of MKB Bank, MSZVK Zrt. may also act as resolution asset management vehicle in the resolution of other credit institutions, and therefore – depending on the current intention of decision-makers – it may serve the maintenance of financial stability not only over the short term, but over the medium and long term as well.

Pursuant to the concept of the MNB, the resolution asset management vehicle was set up for an indefinite period of time, in a holding structure. With the establishment

[6] *Section 54 of the Resolution Act.*

of the holding structure, separate subsidiaries may manage the assets taken over from individual institutions in the various resolution proceedings, which strengthens transparency and allows the performance of individual portfolios to be measured. In addition, this structure is highly cost-efficient, as shared services (e.g. accounting, HR, purchase, operation) can be outsourced to the holding parent company (MSZVK Zrt.), and real estate management to the real estate manager under the holding.

The operation of MSZVK Zrt. and the provision of the purchase price to be paid by MSZVK Zrt. to MKB Bank for the portfolio to be separated required the help of the Resolution Fund (see article in box).

Role of the Resolution Fund in financing the resolution of MKB Bank

The Resolution Fund (hereinafter: Fund) was established in the summer of 2014 as an independent legal entity, in order to provide the funds required for resolution operations.

Similarly to the National Deposit Insurance Fund (OBA) and the Investor Protection Fund, the main income of the Fund comprises payments from market players, while credit institutions and investment firms pay a risk-based annual fee. The Fund must reach the target level set by the legal regulations within 10 years (from 2014 to 2024, the volume is HUF 82 billion). However, it may happen, especially at the beginning of the replenishing phase, that the funds required for the completion of the resolution are not available in the Fund, and therefore the legal regulations allow the Fund to take out loans or issue bonds for the completion of its tasks.

The Fund contributed to the successful resolution of MKB Bank on several occasions and in various ways. On the one hand, in the autumn of 2015, when setting up the Hungarian Resolution Asset Management Vehicle (in Hungarian: Magyar Szanálási Vagyonkezelő Zrt. – MVSZK Zrt.), it provided founder's capital of HUF 2 billion, and created one of the essential conditions for accepting the portfolio to be separated from MKB Bank with resolution tools, and on the other hand, in December 2015, it provided the external financing of almost HUF 100 billion, required for asset separation and sale of business; thus MSZVK Zrt. was able to purchase the separated portfolio from MKB Bank.

From the payments of market institutions accumulated since 2014, the Fund had enough funds to cover the expenses related to the foundation of MSZVK Zrt., but it had to involve external funds to be able to pay the price of the separated portfolio. The Board of Directors of the Fund examined the possibility of taking out a loan and issuing bonds, asked for offers from market players, and then, considering all the relevant circumstances, decided to take out a loan. K&H Bank Zrt. submitted the best price quotation and was charged with setting up a consortium, as a result of which the Fund signed financing agreements with the syndicate of Erste Bank Hungary Zrt., K&H Bank Zrt., OTP Bank Nyrt. and UniCredit Bank Hungary Zrt.,[7] then forwarded the loan to its 100 per cent subsidiary, MSZVK Zrt.

The above points indicate that in the course of the resolution of MKB Bank, the Fund efficiently performed its tasks defined by legal regulations, and provided the amounts required for the resolution without the involvement of taxpayers money, partly from accumulated payments, and partly from external market sources. The resolution of MKB Bank would not have been possible without the efficient cooperation of the Resolution Fund.

In using the asset separation resolution tool, another special role was played by the ex-post definitive valuation carried out by independent valuers appointed by the MNB, based on which the individual and portfolio-level market values of portfolio elements to be separated from MKB Bank were defined. MKB Bank assets worth a gross amount of HUF 214 billion which could not be sold using the sale of business resolution tool were separated from MKB Bank in two phases. First, they were transferred to MKB Pénzügyi Zrt. (receivables) and to Resideal Zrt. (real estate) in the 100 per cent ownership of MKB Bank. Then, the shares issued by these two subsidiaries and the loan receivables of the bank from MKB Pénzügyi Zrt. were transferred to MSZVK Zrt., using the asset separation tool (*MNB 2015c*). Following the transfer of assets, the company name of MKB Pénzügyi Zrt. was changed to Szanálási Követeléskezelő Zrt. (SZKK Zrt.), in order to underline its institutional separation from MKB Bank.

For the transferred assets, the Bank received a price (real economic value – 45 per cent of the gross book exposure) which was HUF 32 billion higher than their low market value which originated from the unfavourable market conditions, allowing the bank's capital position to be stabilised. The difference of the counter-value received for the transferred assets and their market value is considered state

[7] Pursuant to section *133 (5) of the Resolution Act*, the state is responsible as a joint and several guarantor for the syndicated loan taken by the Resolution Fund up to the amount approved by the Government. The government decision related to the affected loan deal is *Government Decree 1861/2015 (XII. 2.)* on the role of the state in the resolution of MKB Bank Zrt. (*Magyar Közlöny 2015*), which refers to taking a loan of maximum HUF 45,500 million and EUR 166.9 million, and defines a guarantee fee to be paid to the state. While no compensation is to be paid to the state for offering a joint and several guarantee – as stipulated by the legal regulations – to the borrowings of the National Deposit Insurance Fund (OBA) and the Investor Protection Fund, the Resolution Fund pays a fee to the state for offering this kind of collateral. Therefore, the state budget did not finance the Resolution Fund and the resolution of MKB Bank, but – as the legal regulations stipulated – acted as a joint and several guarantor for the collection of funds, and it receives a financial compensation for that, i.e. realises income on the transaction.

aid under EU law, which was found compatible with the internal market by the European Commission in December 2015, based on the submitted restructuring plan and commitments regarding the institution (*European Commission 2015*).

EU framework for state aids[8]

The provision of state aid is generally not allowed, but certain aids can be considered compatible with the internal market, and the European Commission has the exclusive authority to examine that. A certain action qualifies as state aid in the sense of EU law in the following cases:

1) it provides a selective advantage to any business/product,

2) it originates from a source controlled by the state,

3) it distorts or threatens to distort competition, and

4) affects trade among Member States.

According to the relevant communication issued by the Commission (*European Commission 2013,*[9] *point 64.*), the use of the sources of the Resolution Fund and OBA for the purpose of crisis management, including any aids provided through the resolution asset management vehicle qualifies as state aid.

The Commission finds state aid to be provided to a credit institution compatible with the internal market, and therefore approves its provision, if it serves the elimination of a serious problem that occurred in the economy of a Member State. For the approval of state aid, a restructuring plan must be submitted to the Commission, which describes how the institution wishes to eliminate the reasons for the problem, and ensure further viability over the long term and without state aid. The Commission declares the aid compatible with the internal market and thus approved, if the owners and creditors of the institution bear the losses occurring at the institution to a proper extent, and, regarding the institution, agree to bear behaviour and restructuring obligations which will allow for the elimination of the reasons of the problems of the institution, and minimise the possible competition distorting effects of the state aid.

[8] A framework created by Article 107-109 of the Treaty on the Functioning of the European Union and the legal acts created or adopted on the basis of these sections, including directives, guidelines and communications.
[9] “Communication on banks”

The counter-value paid by MSZVK Zrt. for the company shares qualifies as state aid, because MSZVK Zrt. is an institution under the control of an administrative agency, and therefore, not only market, but – to some extent – state considerations were also taken into account in the use of the funds. As explained above, the sum of the state aid is essential for the recovery of the capital position of MKB Bank, so that is has enough capital – also considering the new business plan – to pursue profitable operations instead of loss-making operations. In exchange for the purchase price that was higher than the market price, and based on the decision of the Commission, the MNB transferred all the shares issued by the bank to MSZVK Zrt., with an obligation to sell them on the market later, so that MSZVK Zrt. became the exclusive owner of the bank.

One of the key principles of the resolution framework is that the possible losses of the institution must be borne primarily by its owners.[10] Based on the practice established for the evaluation of state aid, the European Commission may grant state aid to an institution only if the owner – in this case, the Hungarian state – takes part in bearing the losses of MKB Bank to a proper extent, i.e. to the greatest possible extent. According to the communication of the Commission, the aid must be limited to the necessary minimum (*European Commission 2009, point 22.*), and the beneficiaries of the aid (in this case, MKB Bank) must contribute to the costs of restructuring, and as much as possible, must finance the transformation jointly with the owners, from own funds (*European Commission 2013, point 15.*). Appropriate burden-sharing must be first ensured from the *Common Equity Tier1* (*CET1 capital*) (*European Commission 2013, point 41.*). If that is not sufficient, the capital shortage must be remedied from the Additional Tier 1 capital (AT1 capital) and Tier 2 capital elements (*T2 capital*), up to the limit of their loss-bearing capacity. However, considering the fact that the capital of MKB Bank consists of CET1 capital only, there was no opportunity to reduce losses from AT1 and T2, and the appropriate burden-sharing by the owner of MKB Bank was ensured by transferring all the shares issued by MKB Bank and in the exclusive ownership of the Hungarian state to MSZVK Zrt. which offered the state aid, concurrently with the disbursement of the state aid, against a token payment. The European Commission stated in its decision that the owner of MKB Bank (the Hungarian state) had made the greatest possible contribution to the burden-sharing.

With the above reorganisation and resolution actions, the portfolio of MKB Bank has been cleaned as planned, and the foundations of long-term viability and earning power were laid down. The Commission recorded that the use of the asset separation resolution tool is in line with the relevant communication of the Commission, and the commitments made mostly until the end of 2019 provide a proper guarantee to limit the competition distorting impacts stemming from state aid.

[10] *Section 20 (1) a) of the Resolution Act*

MKB Bank obligations related to the restructuring plan

In addition to providing for completion of the restructuring plan of MKB Bank, the Hungarian authorities – in line with the relevant EU competition law and the related legal practice – offered to the European Commission that they would enforce the adherence to the following **commitments regarding MKB Bank and its subsidiaries:**

1. Sale of business lines which generate losses;
2. Termination of lending for commercial real estate and reduction of the existing portfolio to a significant extent;
3. Ban on retail FX lending, while corporate FX lending is possible with natural coverage only;
4. Cost reduction;
5. Improvement of risk management systems;
6. Ban on payment of dividends;
7. Limitation on certain investments (e.g. ban on purchase of securities of low credit rating);
8. Introduction of the shares of MKB Bank to regulated markets;
9. Limitation on the growth of the balance sheet total and risk-weighted assets (*risk-weighted assets – RWA*);
10. Limitation of acquisitions over a certain amount (these deals require the individual permits of the EU Commission);
11. Reduction of marketing expenses below a certain level;
12. Ban on references to state aid in advertisements;
13. Upper limit of remuneration (until the repayment of state aid);
14. Sale of 100 per cent of MKB Bank shares by 30 June 2016;
15. Ban on aggressive sales practices;
16. Appointment of a monitoring trustee for the period of restructuring;
17. Re-notification of changes in the restructuring plan to the European Commission.

A detailed description of these commitments can be found in the public version of the decision of the Commission (*European Commission 2015:28-33, Annex 1*).

4.4. Sale of MKB Bank

As soon as MKB Bank sold its toxic asset portfolio using the resolution tools sale of business and the asset separation, and the completed reorganisation actions made their contribution to strengthening the bank, the market sale of its shares took place according to the conditions stipulated in the decision of the Commission – in open and transparent procedures applying competitive terms, free of discrimination and meeting the provisions regarding state aids in the sense of EU competition law.

Satisfaction of the above conditions was facilitated by the fact that the sale process was supervised by the Monitoring Trustee, an independent consultant company appointed by the Commission which examined compliance with the expectations of the Commission. For the sale of the shares of MKB Bank, the MNB used the assistance of a global investment bank with expertise in the sale of banks. During the preparations for the sale, dozens of professional, banking and other investors were directly contacted in an open procedure. During the process, in the course of the negotiations with investors, it was obvious that banks did not show any interest, and it was primarily private equity funds which were willing to examine the bank in detail and make offers.

For the sake of transparency, the seller's expectations about the bidders and the information requested by the buyers were shared by MKB Bank with interested parties through a so-called virtual dataroom which was accessible to each bidder.

In the assessment of the bids, maximising the sale price had the greatest importance for the MNB, but it also considered aspects of financial stability, as it set quality criteria for the buyers, and demanded significant commitments from the buyers to support the future capital adequacy and stability of MKB Bank. Accordingly, in the course of the evaluation, compliance with two considerations was taken into account: (1) compliance with the EU framework for state aid, which considers the maximising of prices as the primary consideration, based on the approach of private investors, and (2) the approach of the resolution authority, including financial stability interests. These two approaches had to be realised together in the evaluation system. In order to achieve this, an external consultant company was commissioned to take part in the development of the criteria for selecting the winning bidder, based on international practical experience and ensuring a procedure free of discrimination. The evaluation procedure established with the use of the accumulated best international experiences combined the compliance with various expectations.

In the end, only private equity funds made binding purchase offers, and within that, it was clearly the extent of the offered purchase price that had the greatest significance in making the final decision. In the evaluation of the purchase price, it was also considered that MKB Bank was appraised by an external consultant, before the sale, who specified a certain band as the market value. The best offer was higher than the middle of the evaluation band, and exceeded the value of the state aid previously provided to MKB Bank.

Based on the above steps, as a closing step of the resolution measures, the MNB sold MKB's shares on the market by applying the sale of business resolution tool. The best bidder was the syndicate Blue Robin Investments S.C.A. – METIS Private equity fund – Pannónia Nyugdíjpénztár, and thus these institutions acquired shares of MKB Bank in a ratio of 45-45-10 per cent, following approval of the acquisition of the influence and payment of the purchase price of HUF 37 billion (*MNB 2016a*). In the course of the sale process, as the supervisory authority, the MNB checked whether the companies submitting bids satisfied the legal requirements of acquiring influence.

5. Closing the resolution of MKB Bank – summary

The one-and-half-year reorganisation of MKB Bank was the first resolution procedure in Hungary, which was implemented successfully on a significant, large universal bank with country-wide coverage by the MNB as the resolution authority in line with the recovery and resolution guidelines of the European Union, and with the involvement of consultants highly recognised on the global markets.

In the resolution procedure, a number of resolution measures were applied, but the separation of toxic assets was essential for placing MKB Bank on a sustainable path. Without the separation of the portfolio as approved by the Commission and implemented by the end of 2015, MKB Bank would have required internal capitalisation, and it would have been necessary for the problematic asset portfolio to be separated to be devalued to market value, with the result that the bank's capital adequacy ratio would not have reached the minimum level specified by legal regulations. In that case, the funds of the creditors of MKB Bank would have had to have been involved in the bail-in, which would have further reduced the value of MKB Bank. With the successful portfolio separation, the MNB managed to achieve the objectives of the long-term sustainability of MKB Bank and stabilisation of its operation, as well as its transfer to the new owner in such a manner that the funds of deposit holders and creditors were fully protected and they did not suffer any losses (*MNB 2016b*).

With the purchase price collected from the sale of MKB Bank, the assets of MSZVK Zrt. increased by a net amount of HUF 35.2 billion, as the purchase price of HUF 37 billion is reduced by tax obligations and the costs occurring for the Resolution Fund with the resolution of MKB Bank, but the price still exceeds the amount of HUF 32 billion in state aid, and therefore the state aid was also repaid to MSZVK Zrt. that offered the aid. The growth in the assets of MSZVK Zrt. which is owned by the Resolution Fund and facilitated by the sale of MKB Bank is of great importance, because the Resolution Fund that was set up only two years ago did not reach the level of funds prescribed by legal regulations yet. Therefore, in the case of another possible bail-in, external funds may have to be involved. In this manner, the maintenance of financial stability might generate extraordinary costs for the state, and the annual fees paid by credit institutions and investment firms to the Resolution Fund could also increase. Additionally, by taking over the portfolio, MSZVK Zrt. acquired assets which – if utilised successfully, with a return over the primary cost (actual economic value) – may generate additional extra assets for the Resolution Fund.

As a result of the resolution measures, the conditions that called for the resolution of MKB Bank were eliminated, and based on the data as per 30 June 2016, the capital position of the bank is solid, and no additional insolvency or resolution situation can be expected in the next one year. The MNB as the resolution authority – taking into account all conditions – did not identify any further resolution actions to be taken or appearing necessary, and therefore the MNB closed the resolution process of MKB Bank on 30 June 2016. Following termination of resolution, it is not the MNB as the resolution authority, but the new owners who exercise the owners' rights over MKB Bank which "has been fully re-instated on the market". Apart from that, the Supervisory authority will, of course, keep continuously monitoring MKB Bank.

Recognising the success of the resolution, in July 2016, the international credit rating agency Moody's Investors Service[11] confirmed and changed MKB's long-term deposit rating from stable to positive and improved the credit rating and counterparty default risk rating of MKB by one level.

The successful resolution of MKB Bank is the result of the efficient cooperation of the organisations responsible for financial stability (the Government, the MNB, the Resolution Fund and MSZVK Zrt.), and this gives us the hope that the MNB as the resolution authority, will also be able to use the resolution tools successfully in the future, and, by closely cooperating with its partner organisations, also be able to protect financial stability in this manner.

[11] *Moody's* (*2015*): Completion of MKB Bank's Resolution Is Credit https://www.moodys.com/credit-ratings/MKB-Bank-Zrt-credit-rating-600018782

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Administrative law aspects of the macroprudential regulation and supervision of the financial intermediary system – normativity, organisation, toolkit*

János Kálmán

Macroprudential policy has developed a new set of instruments for the mechanisms with which the state intervenes in the economy through its public administration. However, the global economic crisis and the need for rapid action did not allow time for the inclusion of macroprudential policy into the dogmatics of administrative law and therefore this needs to be done subsequently. This study analyses the legal nature of normative regulation related to macroprudential policy, the organisational features of the macroprudential authority and the legal appearance of macroprudential instruments. The final conclusion of the study is that the content of the public good or public goal, i.e. financial stability, to be implemented by macroprudential policy is extremely poorly defined. Considering the above, for the assessment of the achievement of financial stability, i.e. for the state control of the efficient fulfilment of the public goal, the regulatory environment must create an efficient legal guarantee system.

Journal of Economic Literature (JEL) codes: E30, E44, K23

Key words: state intervention, CRD IV/CRR, macroprudential authority, macroprudential policy, financial stability, market surveillance

1. Introduction

The outbreak of the 2007 global economic crisis received considerable attention from both academic circles and public policy makers. Although the opinions on the exact causes and 'incentives' of the emergence of the global economic crisis vary (*Asztalos 2009; Móczár 2010; Losoncz 2010; Stiglitz 2009; Jickling 2010;*

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* The views expressed in this paper are those of the author(s) and do not necessarily reflect the offical view of the Magyar Nemzeti Bank.

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Lipshaw 2011), most studies agree that its starting point was the liquidity crisis developing in the debt market, later leading to the bankruptcy of Lehman Brothers, which is also considered to be the symbolic onset of the crisis. The bankruptcy of Lehman Brothers and other banks in turn led to regulatory interventions and bailouts (*Brunnermeier et al. 2009:18; Kern et al. 2007*). The international regulatory reforms identified the weakness of macroprudential regulation and supervision in the fact that financial organisations could increase their balance sheet together with their leverage without paying attention to the systemic risks building up in the financial system (*Kern 2014; Lastra – Wood 2010*). Central bankers in turn did not pay due attention to the close correlation between monetary policy and prudential regulation, and in particular to how the central bank base rate can contribute to the emergence of a high level of asset price bubbles and leverage in the financial system, which caused significant economic downturns.[1]

In addition to the above, until the emergence of the global economic crisis, a micro level approach, i.e. *microprudential regulation and supervision*, was the prevailing attitude of prudential regulation and supervision (*Kálmán 2015*). Microprudential supervision fundamentally focuses on the safe and sound functioning of individual financial institutions and the management of the bank's risks, disregarding structural and time-related risks building up in the financial system. Macroprudential regulation and supervision (hereinafter jointly referred to as macroprudential policy) is a public task, and therefore it keeps the identification and management of systemic risks in view, and the conceptual framework, statutory regulation, organisational system and set of instruments comprising this system of objectives is still being formulated at present as well. The necessity to react to the global economic crisis quickly and efficiently, i.e. crisis legislation, results in legal issues falling by the wayside (temporarily) at the beginning of formulating the regulations, but as economic fundamentals are put in order, jurisprudence must examine the emerging *new area of sectoral public administration of the economy* and draw the necessary conclusions.

This brief study attempts to outline the main aspects of the administrative law analysis framework of macroprudential policy in view of its sectoral public administration nature, and summarises the initial questions of the review.

[1] The close correlations between monetary policy and prudential regulation may also have remained undervalued because prior to the global economic crisis even monetary policy decision-makers based their monetary policy decisions on incorrect assessments of economic activity. See the statements of Donald Kohn, then-Vice Chairman of the Federal Reserve System Board of Governors at the meeting of the Federal Market Open Committee on 7 August 2007: 'My forecast for the most likely outcome for output over the next few years is close to that of the staff–growth a little below potential for a few quarters, held down by the housing correction, and the unemployment rate rising a little further. (…) I see a number of reasons to think that moderate growth remains the most likely outcome going forward.' See: Transcript of the Meeting of the Federal Open Market Committee on August 7, 2007, 64. http://www.federalreserve.gov/monetarypolicy/files/FOMC20070807meeting.pdf. Downloaded: 20 May 2016

2. Administrative law analysis framework of macroprudential policy

For the administrative law analysis of macroprudential policy, or rather for the identification of the relevant administrative law problems, this study relies upon *three pillars*: *normative regulation* – created by others than the macroprudential authorities – concerning macroprudential policy and designating the macroprudential authority's scope of action; *organisational characteristics of the macroprudential authority*, which place the macroprudential authority within the organisation of public administration; and finally, the legal means applied by macroprudential authorities to carry out their public responsibilities. Finally, the *concept of financial stability* is reviewed as the foundation of these three pillars; this concept essentially represents the public good to be implemented by macroprudential policy and at the same time the reason for economic intervention by the state.

2.1. Conceptual framework of macroprudential policy and its central element, financial stability

Explore the exact origin of the *concept of macroprudence* is a difficult undertaking, but the literature traces its creation back to the expert work going on at the *Bank for International Settlements* (hereinafter: BIS). Based on the BIS archives, *Piet Clement* revealed that the first appearance of the concept of macroprudence in international environment can be dated to 1979, to a meeting of the Cooke Committee, where experts discussed the risks inherent in the maturity of international interbank loans (*Clement 2010:59-60*). This material, however, was an internal expert document, and thus the concept did not appear in the public sphere. The first public document that expressly devoted attention to macroprudential policy was a report of one of the committees of the BIS (*Committee on the Global Financial System*) in 1986 (*BIS 1986:233-244*). It was not by chance that the issue of the necessity of macroprudential policy came to the fore in connection with the derivatives market and the risks inherent in the process of securitisation. However, the 'cyclical euphoria'[2] eclipsed the questions raised by experts – in parallel with the liberalisation and deregulation of the financial market[3] – and until the early 2000s

[2] This expression originates from Raghuram G. Rajan, and describes that the belief in strict regulation is the strongest at the lowest point of the recession, exactly when strict regulation of market participants is not needed. At the peak of growth and expansion, when the chance is the highest that market participants take excessive risks, everyone trusts in the functioning of the self-regulating mechanisms of the market (*Rajan 2009:397*).

[3] Liberalisation fundamentally means the restoration of the conditions of market economy in areas where state intervention reached a significant magnitude, while deregulation means the termination of the different regulations of the various financial sectors and financial services as well as of the ban on the interoperability between sectors, and in general the removal of restrictive provisions of law.

the concept of 'macroprudence' arose only occasionally.[4] The 'revival' of the concept is related to the speech delivered in September 2000 by Andrew Crockett, General Manager of the BIS and at the same time Chairman of the *Financial Stability Forum* (*Crockett 2000*). Crockett summarised the differences between the macroprudential and microprudential approaches to regulation and supervision, and expressed the idea that it was necessary to strengthen the macroprudential approach to achieve financial stability. In addition to the above developments, academic journals and scientific works also increasingly dealt with systemic risks and the issue of procyclicality of the banking system without naming it as macroprudential policy (*Horváth et al. 2002; Mérő 2003; Mérő – Zsámboki 2003; Lúboy 2003; Rochet 2005; Borio 2005*). The above developments reveal that although the macroprudential way of thinking (mostly relating to systemic risks) developed continuously, its sudden institutional and legislative development – appearing as part of the crisis legislation indicated in the introduction – was triggered by the global economic crisis.

Macroprudential policy can be defined as the *use of mainly prudential tools to limit systemic risks and ensure the stability of the financial system* (*Viñals 2011*). Taking account of the above, *Lastra* (*2015:316*) points out that it is very difficult to capture the macroprudential aspect. Considering the nature of the intervention tools, it falls somewhere between microprudential supervision and monetary policy.[5] However, it is not always easy to draw the line between them. As for its goal, according to the definition by the *European Systemic Risk Board* (hereinafter: ESRB), the objective of macroprudential policy is to '*contribute to the safeguard of the stability of the financial system as a whole, including by strengthening the resilience of the financial system and decreasing the build-up of systemic risks, thereby ensuring a sustainable contribution of the financial sector to economic growth.*'[6] The central element of the concept of macroprudential policy, and thus the foundation of economic intervention, is systemic risk itself and the *concept of financial stability*. According to the definition by *Scott* (*2010:763*), systemic risk is the risk which may destroy the national and global financial systems. Accordingly, the concept of systemic risk captures the contraction in the provision of financial services as a result of the weakening of the financial system as a whole or part of it, in a way that this contraction may have serious negative impacts on the real economy.[7] The build-up and existence of systemic risks, in turn, poses a risk

[4] However, from this period it is important to underline that the concept itself left the circles of 'central bankers', and even the IMF started to use it, firstly in connection with the Southeast Asian crisis (*IMF 1998:13*). The relevant policy-type consequence was that the IMF started to develop better statistical methods for the examination of the vulnerability of the financial system. They were the so-called macroprudential indicators, which were later included in the Financial Sector Assessment Programme of the IMF (*Owen et al. 2000*).

[5] Concerning the nature of macroprudential policy, the opinion of *Tommaso Padoa-Schioppa* (*2002:3*) is similar to that of Lastra. In the former's opinion, financial stability is in the field bordered by monetary policy and financial supervision.

[6] See: Recommendation of the European Systemic Risk Board of 4 April 2013 on intermediate objectives and instruments of macro-prudential policy (*ESRB/2013/1*) (hereinafter: Recommendation ESRB/2013/1).

[7] For more details on the approach to the concept of systemic risk in literature see *Lublóy* (*2003:77-81*).

to maintaining financial stability as the ultimate goal of macroprudential policy. However, in connection with maintaining financial stability it is necessary to note that macroprudential policy does not have exclusive responsibility in this area as ensuring financial stability can fundamentally be decomposed into two kinds of processes: crisis prevention (with which macroprudential policy is fundamentally identifiable in the closest manner) and crisis management (which, in turn, is already separate from macroprudential policy).

Accordingly, the ultimate goal of macroprudential policy – within the framework interpreted above, distinguished from the instruments of crisis management – is to increase the financial system's resilience to shocks. Consequently, macroprudential policy as economic management toolkit intervenes in the operation of the economy when it perceives threats to financial stability.[8] That said, the concept of financial stability has extremely poorly defined – positive – content.[9] In fact, financial stability is usually defined with a negative approach, i.e. financial stability means the lack of significant financial crises (*Das et al. 2004:6; Lastra 2015:313*). The so-called *Ingves Report*, which the BIS compiled to create a concept of financial stability for the implementation of the macroprudential framework to be developed within Basel III,[10] defines at least five types of the concept on the basis of the relevant literature (*BIS 2011*). According to the definition by *Glavanits* (*2015:84*), 'in order to achieve financial stability, legislative and law enforcing bodies, financial institutions and other financial market participants are obliged to behave in a specific way, and also to refrain from certain other ways of behaviour, as well as to act in cooperation with one another in line with the principles of good faith and honour'.

Accordingly, the uncertainty of the ultimate goal of macroprudential policy, which drives the functioning of the set of instruments as well, opens up the possibility for *ex ante* state intervention, intended to prevent the build-up of systemic risks, as well as for *ex post* intervention, aiming to neutralise systemic risks which have built up. Consequently, macroprudential policy *has extremely wide discretion in terms of the activation of instruments.*

[8] The basic instruments of 'perception' are directly defined indicators (e.g. the loan/GDP gap, cyclical systemic risk map), expert evaluation and external risk assessments. With regard to Hungary, it is necessary to mention the system-wide financial stress index, the SWFSI, which was developed for the Hungarian financial system. This indicator measures the joint stress level of the Hungarian financial system's six main segments (the spot foreign exchange market, the foreign exchange swap market, the secondary market of government bonds, the interbank unsecured forint market, the equity market and the banking segment) (*Holló 2013*). As a result of the conversion into forints, the Magyar Nemzeti Bank (MNB) recently renewed the SWFSI (*MNB 2016b*).

[9] However, against the background of the vague nature of the concept, it is necessary to point out that there is broad agreement in the literature regarding the public good, and even global public good nature of financial stability (*Quintyn – Taylor 2002:8; Turnbull 2006*).

[10] The Basel III regulatory package is a complex system for the renewal of bank regulation, consisting of a number of elements. The most important of these are the new rules related to capital and liquidity as well as the additional requirements vis-à-vis systemically important financial institutions. An overview of the Basel III regulatory package is available at: http://www.bis.org/bcbs/basel3.htm?m=3%7C14%7C572. Downloaded: 23 April 2016

2.2. The normative pillar of macroprudential policy

Globalisation of the financial market made it obvious that – in parallel with market participants' interconnection and integration – a regulatory framework is needed, which is based on uniform principles and harmonised internationally to a great extent (*Erdős – Mérő 2010:226*). Without such a framework, risky activities – based on the principle of less resistance – would gravitate to the regulatory environment where the most relaxed rules prevail and would thus weaken the efforts to manage systemic risks. This is the so-called *regulatory arbitrage* phenomenon. In order to eliminate this, the normative pillar of the regulation of macroprudential policy is implemented on three regulatory levels which are built upon one another. These levels are a) *international*, b) *European Union* and c) *national* regulations. Due to size limitations, this paper cannot analyse each regulatory level in detail, and thus in the following the focus is on the correlations between the individual levels and on macroprudential authorities' leeway designated by legislation.

In connection with international macroprudential regulation, it is necessary to point out that it basically means the aggregate of so-called '*soft law*' type norms[11] (standards, recommendations, resolutions, guidelines and other declarations), as – for lack of sovereignty and transfer of sovereignty – *this regulatory level is* – at present[12] – *devoid of the possibility of formulating legally binding norms* (*Brummer 2011*). Due to lack of a legal requirement, it is not even possible to enforce by legal means the macroprudential rules that appear at the international level, albeit a number of international organisations – especially the IMF, the BIS and the Financial Stability Board – exert expert pressure on states so that they should include the international rules in their own respective legislation.[13] The enforcement of 'soft law' type norms may be served by the market as well. Namely, compliance with international standards may facilitate the cheaper financing of sovereign debt and negotiation of more favourable terms and conditions with international financial institutions (*Ferran – Kern 2011:6*). Therefore, it is important to emphasise that even in absence of a legal requirement, international 'soft law' is able to have a significant impact on supranational and state regulations through its implementation by sovereigns – or by their supranational organisations – in their own respective legislation.

[11] *Giovanni* (*2000:9*) observes that apart from some exceptions (e.g. *IMF agreements*), most international financial documents that relate to cross-border financial relations can be considered as 'soft law'.

[12] However, it is important to note that the regulatory elements without a legally binding nature serve the purpose of analysing the current conditions, but it cannot be excluded that the international level becomes 'statutory' as a result of creating – through partial assignment of state sovereignty – organisations that will already be authorised to take legally binding decisions. The concept of Erik Denters and Rosa M. Lastra about setting up the World Financial Organisation can be mentioned as an example (*Denters 2009, Lastra 2014*). In connection with that, the analyses published in literature regarding the emergence of international financial law or lex financiera can be mentioned (*Lastra 2014*).

[13] An example for that is the World Bank's programme that assesses the situation in the financial sectors of the member countries (*Financial Sector Assessment Program*) (*Gola – Spadafora 2009*).

Within the European Union, Member States' systemic financial risks may be closely interrelated; therefore, Member States' macroprudential policies cannot be separated from one another. Accordingly, with adjustments complying with the characteristics of the European Union (*Ayadi et al. 2012:1*), the Basel III proposal package, which was elaborated by the *Basel Committee on Banking Supervision*, although it appears as 'soft law' at the international level, was implemented in 2013 by the Council and the European Parliament in the European Union legislation through the CRD IV/CRR regulatory package,[14] which entered into force on 1 January 2014.

The CRD IV/CRR is a step taken expressly in order to *set up a framework for a single European regulation* (*Mérő – Piroska 2013:315*), which, firstly, follows from the fact that the CRD IV is already a so-called maximum harmonisation directive, i.e. Member States must include its provisions in their own internal legal system, but they may not adopt stricter requirements than its provisions, and secondly, the CRR was issued in the form of a regulation, which has direct effect, i.e. it must be applied directly – without member state implementation – in the EU Member States. From a regulatory aspect, it is important that the CRR does not prevent institutions regulated by it (credit institutions and investment firms) from holding own funds and their components in excess of, or applying measures that are stricter than those required by the CRR.[15] Moreover, it also allows Member States' authorities to *introduce stricter national measures in the case of negative changes*, if systemic risks can be better addressed with such (the so-called *flexibility clause*), if there is no other suitable tool for their management, and using a special information procedure.[16]

In terms of formulating the macroprudential framework of the European Union, undoubtedly the most important new feature is the appearance in EU legislation of the provisions concerning the macroprudential policy of the CRD IV/CRR package (*ESRB 2014a:4*) and of the legal institutions – intervention tools – harmonised at the EU level and dedicated to the prevention or overcoming of the systemic risks that jeopardise financial stability. In connection with the provisions of the CRD IV, it is necessary to emphasise that the macroprudential tools contained therein exert their impact through *member state* legislation and the application of law by authorities relying upon that legislation. One exception from this is the *European Central Bank* (hereinafter: ECB), which – for the Member States participating in the banking

[14] See: *Regulation (EU) No 575/2013* of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending *Regulation (EU) No 648/2012,* text with EEA relevance (hereinafter: CRR); *Directive 2013/36/EU* of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending *Directive 2002/87/EC* and repealing *Directives 2006/48/EC and 2006/49/EC,* text with EEA relevance (hereinafter: CRD IV).

[15] *Article 3, CRR*

[16] *Article 458(2), CRR*

union – is also qualified as a macroprudential authority within the *Single Supervisory Mechanism* (hereinafter: SSM). The ECB is entitled to apply the macroprudential tools regulated in the CRD IV/CRR.[17] As opposed to the CRD IV, the CRR regulates macroprudential tools that the macroprudential authorities may apply directly, based on the CRR. In addition to the macroprudential tools applied directly on the basis of the CRR and the ones transposed into internal legislation, Member States have the right to *introduce special macroprudential tools* (not regulated at the EU level) *into their national legislation* in order to manage systemic risks.

Accordingly, the *primary responsibility* for systemic risk management and the use of macroprudential tools *is based on the national level*. Consequently, the EU regulation mainly prevails through macroprudential authorities' law enforcement and – in Member States where the macroprudential authority is authorised to do so – through legislative activity.

Stemming from the aforementioned uncertainty of financial stability as the ultimate goal of macroprudential policy, in terms of normativity one of the most important questions is what *decision-making mechanism* is created by legislation for the macroprudential authorities in connection with macroprudential policy and thus in connection with the application of the state's tools for intervening in the economy. Member State legislation can regulate the decision-making mechanisms between two well separable regulatory methods as two extreme values. One of the ends of the regulation is the determination of the so-called *rules-based*, while the other end is the determination of the *discretionary* decision-making mechanism (*Agur – Sharma 2013*). In the case of rules-based decision-making pre-determined indicators signal systemic financial risks in a pre-determined manner, based on which the macroprudential authority automatically applies the available tools. The advantage of this approach is the adequately active, more predictable and transparent, internationally better coordinated macroprudential policy, which is able to shape market expectations in a more precise manner. Compared to the rules-based approach, in the case of discretionary regulation the use of macroprudential tools is at the discretion of the macroprudential authority. The advantages of this approach are that new knowledge and expert assessments can also be used, it instigates a continuous review of macroprudential policy, allows more targeted intervention, is more suitable for the flexible handling of unexpected events, is easier to limit the circumvention of regulation, and it is difficult to automatically carry out the management of certain systemic risks (*MNB 2016a:23-24*). *Various combinations of the two operational methods can be developed, allowing a wider or narrower scope of discretion for the macroprudential authority.*

[17] However, the ECB's macroprudential powers can only be exercised within strict limits, as a) the SSM does not cover the European Union as a whole, only the euro area countries and the states participating in the close cooperation, b) the SSM exclusively applies to the banking sector, and c) the ECB may only apply the macroprudential tools regulated in the CRD IV/CRR and may not create new tools.

In the practice that is evolving in the European Union,[18] the so-called *guided discretion* principle prevails (*BoE 2014; SNB 2014; ESRB 2014a*), which means that there are rules influencing macroprudential interventions, but in specific decision-making situations the macroprudential authority may deviate from them with proper justification.

In summary, in addition to designating the framework, the normative pillar of macroprudential policy fundamentally *refers* the shaping of macroprudential policy and the application of macroprudential (intervention) tools to the (*wide-ranging) discretion* of macroprudential authorities, in parallel with which the responsibility of the macroprudential authority and the effectiveness of the guarantees of the rule of law related to the application of macroprudential tools improve.

2.3. The organisational pillar of macroprudential policy: the macroprudential authority

Setting up *independent agencies* or *independent regulatory commissions* as an organisational response to the increasingly complicated functioning of the modern state has strong traditions in the USA. It can be considered an efficient organisational solution in certain sectors of the economy: energy, telecommunications, environmental protection, financial markets, etc. These independent authorities perform activities of the executive power by generally *having (quasi) legislative and quasi jurisdictional powers as well*. In continental European literature and in statutory law usually the concept of *regulatory authority* is applied. Regulatory authority, which is basically a theoretical category, is the collective term for administrative bodies that perform regulatory authority activity, irrespective of the legal status or the type of body they belong to (*Lapsánszky 2014; Kovács 2009; Horváth 2004; Bán – Könyves 1997*). '*The essence of regulatory authority activity is that the body creates general rules and norms of conduct, although formally it is not necessarily vested with legislative competence*' (*Fazekas 2015:16*). The basic issue in connection with independent regulatory authorities is the legitimacy of their activity: how the competence exercised by them can be harmonised with the requirement of democracy. The precondition of democratic legitimacy is to set up the independent authority in a democratically adopted statutory provision in compliance with the country's constitutional rules. The legal ground legitimises the creation of the body, although in itself it does not legitimise the functioning of the independent body and the exercise of its competence; therefore, the liability of the independent authority, i.e. mechanisms of accountability need to be created. Practically, the judicial review of the decisions of authorities is also based upon that.

Considering the above, it is necessary to briefly review in what EU frameworks the establishment of Member States' macroprudential authorities started, what their

[18] It is necessary to note that the IMF also supports this approach (*IMF 2014*).

main features are and what their relationship with the dogmatic framework related to regulatory authorities is.

In the European Union, setting up the organisation of macroprudential authorities is not up to the exclusive discretion of Member States' governments to establish organisations, as the main requirements that determine the design of the organisation of the authority were determined by the ESRB. Accordingly, *Recommendation ESRB/2011/3* (hereinafter: Recommendation)[19] summarised the fundamental principles of the macroprudential authorisation of national authorities, which serve as guidance in the establishment of Member States' macroprudential authorities.[20] The Recommendation comprises five essential ranges of subjects: *a)* objectives, *b)* institutional arrangements, *c)* tasks, powers and instruments, *d)* transparency and accountability as well as *e)* independence of Member States' macroprudential authorities.

In terms of the *objectives*, the Recommendation establishes that the ultimate objective of macroprudential policy is to contribute to the safeguard of the stability of the financial system as a whole, thereby ensuring a sustainable contribution of the financial sector to economic growth. It also points out that macroprudential policies must be pursued at the national level upon the initiative of the national macroprudential authority, or as a follow-up to recommendations or warnings from the ESRB. In addition, in terms of formulating the objectives, *Recommendation ESRB/2013/1* provides that Member States' macroprudential authorities are recommended to define and pursue intermediate objectives of macroprudential policy – e.g. to mitigate and prevent excessive credit growth and leverage as well as to limit direct and indirect exposure concentrations – for their respective national financial system as a whole. In terms of determining the objectives, reviewing the macroprudential authorities' macroprudential policy strategies, it can be established that they are based on the ESRB's recommendations to a great extent.[21]

Concerning *institutional arrangements*, the Recommendation provides that the authority entrusted with the conduct of macroprudential policy can be a single institution or a board composed of the authorities whose actions have a material impact on financial stability. Where a Member State designated a single institution as the macroprudential authority, it is recommended to ensure that the central bank plays a leading role in the macroprudential policy. In addition, member state

[19] Recommendation of the European Systemic Risk Board of 22 December 2011 on the macro-prudential mandate of national authorities (*ESRB/2011/3*).

[20] Based on the first assessment of the compliance with the Recommendation, the ESRB issued its report in June 2014. The report concluded that seven Member States, including Hungary, fully comply with the Recommendation, seventeen Member States mostly comply, while five Member States partially comply with it. The survey covered Norway as well (*ESRB 2014b*). The report established that the implementation procedure of the Recommendation was basically successful, although further improvements were still needed; therefore, the assessment process would be restarted in 2016.

[21] Without attempting to be exhaustive: *MNB 2016; CBM 2015; BoP 2015; BoS 2015; BoI 2014.*

regulation should provide for the frameworks of cross-border cooperation and of the provision of information prior to the major macroprudential decisions of the ESRB.

The text of the Recommendation states that Member States enjoy wide-ranging freedom during the setting up of the institutional framework. According to the macroprudential authorities that were set up, Member States can be classified into two main groups. The first group comprises those states where macroprudential responsibility is shared by several institutions, and typically a coordinative council or committee is created for harmonising the relevant responsibilities. The other group includes the states where the implementation of macroprudential policy is transferred to the powers of an authority, which may be the central bank (in addition to conducting the monetary policy) or (in addition to the microprudential supervisory tasks) the supervisory authority, or the Ministry of Finance in the case of Denmark, which is an exception (*ASC 2014:11*). Regarding the powers of the macroprudential authority, based on the analysis carried out by the ESRB Advisory Scientific Committee, it can be concluded that two thirds are exercised by Member State central banks, i.e. the rules concerning central bank independence apply to a considerable portion of macroprudential authorities, as described below (*ASC 2014*).

Concerning its *powers*, a Member State's macroprudential authority should have powers at least for the identification, monitoring and assessment of the risks to financial stability and for the implementation of policies to achieve its objectives regarding the prevention and mitigation of those risks. The macroprudential authority should have *adequate instruments* in order to achieve its objectives. With the entry into force of the CRR and implementation of the CRD IV, the requirements included in the Recommendation show the highest compliance in terms of content, as based on these legal acts the fundamental macroprudential tools are available for the macroprudential authorities, and they are obliged to designate a member state macroprudential authority for the application of these tools.

In terms of *transparency*, the Recommendation states that the member state regulation should ensure the highest level of transparency. Therefore, macroprudential policy decisions and their motivations should be made public in a timely manner, *unless there are risks to financial stability in doing so*, and the macroprudential authority should be entrusted with the power to make public and private statements on systemic risk. Concerning accountability, the Recommendation provides that the macroprudential authority is ultimately accountable to the national parliament.

The mechanisms that ensure the public and clear communication of transparency and macroprudential decisions should be considered as the framework of the operational independence of Member States' macroprudential authorities. In Member States' practice, macroprudential authorities' operations are typically *subordinated to the national parliament*; and democratic control over these bodies or institutions is reflected in the public character of the parliament. A typical solution is the macroprudential authorities' annual – or in certain cases more frequent – *reporting* before parliament and the competent parliamentary committee.

Clear communication of macroprudential policy intentions may improve the transmission mechanism of macroprudential tools either if the macroprudential authority took measures or failed to do so (*Giese et al. 2013*). In addition to increasing the efficiency of the transmission mechanism, communication facilitates the development of general agreement, and may strengthen market discipline in relation to the fact that macroprudential measures are needed. It may indicate that the authority is able to handle market problems, and thus may strengthen its legitimacy and at the same time the accountability of macroprudential policy. The most important element of the communication of macroprudential policy – seen in Member States' practice – is the publication of *financial stability reports*. These reports are typically comprehensive documents that provide an overview and analysis of the various aspects of financial stability. They usually begin with a comprehensive assessment of financial stability concerning the given country, often including the international context as well (*Born et al. 2010*). The stability reports are complemented by *press releases*, *policy statements*, *background notes* and *frequently asked questions*.

Finally, the Recommendation states that Member States' macroprudential authorities should be *operationally independent*, i.e. it should be ensured that organisational and financial arrangements do not jeopardise the conduct of macroprudential policy. Moreover, central banks entrusted with macroprudential mandates should be independent in the sense of Article 130 of the Treaty on the Functioning of the European Union (hereinafter: TFEU). The Recommendation provides so in spite of the fact that the independence of macroprudential authorities as supervisory bodies is not the equivalent of central bank independence.

As highlighted above, in many Member States the macroprudential authorities are the respective central banks of the given Member State. Accordingly, in their case the level of independence determined in the TFEU is achieved from the outset. However, where the macroprudential authority is not the central bank of the given Member State, as is also underlined by the *ESRB* (*2014b:17*), the principle of operational independence is breached in several cases, as the government has a significant impact on decision-making.

In summary, with regard to macroprudential authorities it needs to be underlined that both the recommendations of the ESRB and Member States' practices point to the solution that in terms of their legal status macroprudential authorities should become strongly similar to central banks. Consequently, legislators grant macroprudential powers primarily to Member States' central banks as a matter of routine. However, if the central bank is given a greater role in the financial stability framework, especially if its role in the regulation of non-bank financial institutions as well as in the creation and implementation of macroprudential tools increases, these powers have to be complemented with the expansion and reinforcement of the efficient mechanisms of transparency and accountability (*Duff 2014:207*).

Ensuring accountability and transparency with regard to monetary policy is relatively simple. The primary objective of monetary policy is to restrain inflation, i.e. to achieve and maintain price stability, which is easy to quantify (see the comparison of the consumer price index to the central bank's inflation target), and the primary instrument of achieving this objective, i.e. setting the central bank base rate, is relatively easy to understand. The measurability of the level of price stability makes the accountability of the central bank more simple and thus mitigates concerns related to ensuring independence and stemming from the lack of democratic legitimacy (*Goodhart 2011:6-7*). In a theoretical sense, it is much more difficult to attain the same level of accountability in the case of the macroprudential authority. As opposed to price stability, financial stability is difficult to assess on the basis of one single indicator, as there is no consensus even concerning its concept, as elaborated in detail above, and there is no – general agreement-based and scientifically substantiated – indicator as in the case of inflation.[22] It is especially difficult to evaluate financial stability during the operation of the macroprudential authority *ex ante*, i.e. before a financial crisis occurs, because macroprudential policy is primarily of preventive nature, i.e. it aims at the prevention of the emergence of a financial crisis.

Accordingly, the normative pillar of macroprudential policy provides wide-ranging discretion for macroprudential authorities in the course of implementing macroprudential policy, which is supported by the organisational pillar with ample independence from the government, with the fact that in terms of content – due to the uncertainty of the point of reference or benchmark – the mechanism of accountability is limited to the accountability of the macroprudential authority.

[22] In this regard, the most detailed analysis was carried out in the institution called Office of Financial Research set up by the US Dodd-Frank Act, where 31 quantitative index numbers were identified that are used in the literature to measure financial stability (*Bisias et al. 2012*).

2.4. Essential means of implementing macroprudential policy

For the transparent application of macroprudential instruments, macroprudential authorities must elaborate their respective *macroprudential policy strategies*.[23] Macroprudential policy strategy can be interpreted as a concentric process. *In the first stage*, the risks have to be identified and analysed. During that, the macroprudential authorities map the vulnerable points of the financial system with the help of the relevant indicators. *In the second stage*, an *ex ante* impact assessment of the tools that can be applied is performed, and then the tools are selected and calibrated, and consultations prior to the application of the tools are conducted. *In the third stage*, macroprudential authorities activate and make public the macroprudential tools. Finally, *in the fourth stage*, they continuously monitor and evaluate the impacts of the tools used, and by channelling these experience back, the strategic process is restarted (*Fáykiss – Szombati 2013*).

Compilation of the tools of the macroprudential authority is a priority area of the macroprudential policy strategy. Theoretically, a wide-ranging toolkit may be available to achieve macroprudential objectives. These tools can be microprudential instruments calibrated at the system level, other regulatory instruments, fiscal policy instruments (such as various taxes or charges) or new instruments, expressly developed for macroprudential purposes. Due to the short 'history' of macroprudential policy, the individual tools – used for macroprudential purposes – are mostly in the experimental phase, and thus under development.

In the literature, the individual elements of the macroprudential toolkit are systematised according to various aspects. *Viñals* (*2011:22-23*) draws a distinction between instruments which were expressly designed for handling the time-related and structural dimensions of systemic risks (e.g. the countercyclical capital buffer) and instruments that originally were not created for the handling of systemic risks, but can be calibrated at system level as well (e.g. the LTV and LTI ratios). From the aspect of the vulnerability of the financial system, *Hoogduin et al.* (*2010:4*) differentiate among instruments that manage risks stemming from leverage (e.g. the macroprudential leverage ratio), instruments that manage liquidity and market risks (e.g. security deposit ratio) and instruments that manage the risks stemming from interrelationship (e.g. concentration ceilings). *Monroe et al.* (*2010:13*) make a distinction between instruments that have an impact on the assets side of the balance sheet and the ones with an impact on the liabilities side. In the Hungarian literature, *Szombati* (*2013*) differentiates among the instruments for limiting systemic liquidity risks (e.g. liquidity ratios, maturity mismatch rules), instruments

[23] Macroprudential policy strategies are adopted by the European Union's macroprudential authorities in various forms. Many of the macroprudential authorities issue documents that are not binding legally, and thus do not have any normative force. See, for example, *MNB 2016a; BoS 2015*. Some macroprudential authorities, however, lay down their respective macroprudential strategies in normative acts with a legal bond. See, for example, *Directive No. 11*. on macro-prudential policy, Central Bank of Malta.

for reducing procyclical banking sector behaviour (e.g. the countercyclical capital buffer), instruments that limit excessive credit outflows (e.g. LTV and PTI ratios) and instruments that reduce the probability of default of systemically important institutions (e.g. limits concerning the balance sheet total).

In parallel with the aspects of the grouping applied in the literature, for a practical overview of the set of instruments, *the systematisation of instruments is approached from the objective of macroprudential policy.*[24] The ultimate goal of macroprudential policy is to promote the stability of the financial system as a whole and to facilitate its preservation, thus contributing to economic growth in a sustainable manner on behalf of the financial sector.[25] On the basis of specific market failures jeopardising financial stability, this ultimate goal can be decomposed into intermediate objectives for a clearer classification and calibration of the macroprudential instruments. Pursuant to Recommendation ESRB/2013/1, the *intermediate objectives of macroprudential policy* have to focus on at least: *a)* mitigating and preventing excessive credit growth and leverage; *b)* mitigating and preventing excessive maturity mismatch and market illiquidity; *c)* limiting direct and indirect exposure concentrations; *d)* limiting the systemic impact of misaligned incentives with a view to reducing moral hazard, and *e)* strengthening the resilience of financial infrastructures. Based on the so-called *Tinbergen Rule*, *at least one successful instrument is needed for the achievement of each intermediate objective* (*Tinbergen 1952*). It is important to indicate, however, that in practice the efficient functioning of macroprudential policy requires the availability of complementary instruments for the macroprudential authority, mitigating by this as well the phenomenon of regulatory arbitrage and the uncertainties related to the transmission mechanism. Without examining the individual instruments of macroprudential policy in detail (*Claessens 2014; BoE 2011*), *Annex 1* summarises the most widespread instruments that are suitable for the achievement of the individual intermediate objectives.

Therefore, as laid down above, macroprudential instruments are *official authority type acts* meant to handle the findings – the financial stability risks – of the macroprudential authority's system-level supervision activity (*market surveillance activity* in line with administrative law dogmatics).[26] It is important to note that the so-called market surveillance powers are wider than the usual control-supervision powers (of authorities) to the extent that their exercising and the data provision requirements are not necessarily tied to the control of individual resolutions by

[24] As the ESRB puts it: 'Identifying intermediate objectives makes macro-prudential policy more operational, transparent and accountable and provides an economic basis for the selection of instruments.' See: *Par. 5, Recommendation ESRB/2013/1.*

[25] As the MNB's macroprudential strategy puts it: 'The ultimate objective of macroprudential policy is to mitigate excessive systemic financial risks. This means that it should strive to prevent severe financial crises and minimise their effects on the real economy if they nevertheless arise.' (*MNB 2016a:4*)

[26] The administrative law concept and theoretical basis of market surveillance is most generally related to the – economic – interventions by the state necessary in the area of liberalised market public services, including financial services, to the administration of economic competition and consumer protection administration.

authorities, the control of compliance with legislation or to one single client (*Kovács 2008:27*).[27] In terms of dogmatics, among administrative types of activities, market surveillance is an independent, definable type of special official supervision that has specific conceptual and content elements (*Lapsánszky 2012*). As regards the theoretical bases, market surveillance can also be divided into two parts: a) market surveillance investigation and b) market surveillance powers that can be applied as a result of the investigation.

Market surveillance powers are filled with content by the macroprudential policy toolkit, which, theoretically, has an impact on the financial intermediary system as a whole, but practically only on the banking sector, and whose regulatory impact on the economy must be underlined. However, in connection with the macroprudential policy toolkit it needs to be pointed out that – in view of its systemic impacts – the instruments prevail through normative acts as well as individual acts of public authority in the law of European Union Member States. It is typical of normative instruments that they exclude the right of legal remedy against the act, while the guarantee rules of legislative procedure are effective. At the same time, the application of macroprudential instruments typically takes place through normative acts, which can be issued by macroprudential authorities. In view of the practice based upon operative legislation, normative acts consist of legislation by decree and so-called general resolutions, which do not have a specific addressee.[28] The relationship of these two types of acts with the right of legal remedy, or more precisely *the prejudice to the right of legal remedy* raises important legal questions in connection with macroprudential policy and macroprudential instruments.

3. Closing thoughts

The public task – global public good – to be realised by macroprudential policy is the contribution maintaining financial stability, which fundamentally materialises in the development of the financial system's resilience to shocks as well as in the prevention of the build-up of systemic risks that jeopardise financial stability. In this sense, the attitude of macroprudential policy is *ex ante* compared to the *ex post* nature of the set of instruments of crisis management. Of course, in addition to other players – the provision of extraordinary liquidity assistance by the central bank or the deposit insurance or resolution systems in extreme cases – the

[27] In this respect, the administrative law concept of market surveillance covers a wider range than the concept of market conduct used in the financial regulatory literature, which comprises the supervision of the fair, regular operation of financial markets and of capital market participants' fair customer management and investment behaviour in line with their authorisations (*de Haan – Oosterloo – Schoenmaker 2015:420-421*).

[28] With regard to provisions of general nature see: Provision of a general nature on setting the countercyclical capital buffer rate for the Czech Republic No. IV/2015 of 3 December 2015. (Czech Republic); general resolution available at: https://www.mnb.hu/letoltes/srb-altalanos-hatarozat-20151118-hu.pdf (20 May 2016) (Hungary). For regulation by decrees see Règlement CSSF N° 16-02 sur la fixation du taux de coussin contracyclique pour le second trimestre 2016 (Luxembourg); Finansinspektionen's regulations regarding the countercyclical buffer rate (Sweden); *Décision n°D-HCSF-2016-2* du 1er avril 2016 relative au taux du coussin de fonds propres contracyclique (France).

macroprudential authority also plays a role in crisis management. However, the content of the public good or public goal to be attained by macroprudential policy is extremely loosely specified, allowing for wide-ranging discretion. Consequently, the evaluation of its materialisation, i.e. the efficient attainment of public good is an extremely difficult task. The unclarified nature of the fundamentals that allows wide-ranging discretion entails the issues of the scope and depth of statutory regulation, as the guarantee regulation of law and its feature that it assigns scopes of responsibilities may be able to fill these gaps.

However, the normative side of macroprudential policy, i.e. the setting up of the legal framework, further widens the scope of discretion, which is not limited by organisational regulation either, as it typically ensures extremely wide operational independence to the macroprudential authority. Where the rule of law prevails, the disputability of macroprudential decisions as public administrational or economic management acts – which inevitably entail legal effects as well – may create the legal control of these bodies and the legal protection of the members of the society through the right to legal remedy. However, following from their nature, macroprudential decisions exert their legal impact on the financial intermediary system as a whole (or at least to its part that carries systemic risk) simultaneously, relating to an open circle of addressees, and in practice it is typically *realised through normative acts*. It also means that the public administrational acts of macroprudential policy generally cannot be challenged by legal remedy; at most they can be subjected to a procedure of control of legislative standards. In a procedure of control of legislative standards, the competent authorities (constitutional court, ordinary court), basically carrying out a formal control of legislative standards, may examine the authorisation to create statutory instruments and the compliance with the scope of the authorisation. In addition, where applicable, the inquiry may also cover the permissibility of limiting fundamental rights in the case of a collision of the application of the macroprudential instrument with other fundamental rights, e.g. ownership. In the case of *individual, authority type decisions* of macroprudential policy the right to legal remedy prevails formally, typically through judicial reviews, stemming from the operational independence of the macroprudential authority. However, as a result of the extremely wide scope of discretion, the review activity of the court aiming at the legality of the decision may raise doubts in connection with its substance and efficiency. Considering the above and the prevailing regulations, the legal control of macroprudential authorities can be considered rather formal and not as one that provides efficient legal protection for those affected by the decisions.

The global economic crisis and the necessity for rapid action – crisis legislation – did not allow time for setting up the guarantee-related legal framework of macroprudential policy. The demand for financial stability as global public good is fundamentally a public task to be carried out within national frameworks (or in a partly regional one in the case of the European Union). It became interpretable within the framework of macroprudential policy following the global economic crisis, irrespective of the cross-border nature of systemic risks. Local implementation of the global public good may inevitably result in tensions, and it also raises efficiency questions with regard to macroprudential policy, but these must be the subject of further analysis. Statutory regulation must react to the wide scope of discretion of the macroprudential authority, and it is necessary to develop the mechanisms that still appear in statutory regulation only in a narrow scope, but play a major role in the communication and practice of macroprudential authorities, and ensure the legality and responsibility for decisions of the public authority activity of public administration.

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Annex 1

1. Mitigating and preventing excessive credit growth and leverage
a) countercyclical capital buffer b) sectoral capital requirements c) macroprudential leverage ratio d) LTV, LTI/DSTI requirements e) capital conservation buffers
2. Mitigating and preventing excessive maturity mismatch and market illiquidity
a) macroprudential limitations related to sources of funding (net stable financing ratio) b) liquidity ratios c) other macroprudential limits d) security deposit and haircut requirements
3. Limiting the concentration of indirect and direct risk positions
a) limiting large open positions b) various capital-based instruments
4. Limiting the systemic impact of misaligned incentives with a view to reducing moral hazard
a) additional capital requirement for systemically important financial institutions
5. Strengthening the resilience of financial infrastructure
a) deposit guarantee schemes b) increased disclosure requirements c) structural systemic risk buffer

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Supervision by robust risk monitoring – a cycle-independent Hungarian corporate credit rating system*

György Inzelt – Gábor Szappanos – Zsolt Armai

International and Hungarian prudential regulation primarily tasks the supervisory authority with controlling the supervised credit institutions' lending policy and, in relation to this, the internal models used in this policy. However, the crisis period that started in 2009 demonstrated that in many cases credit institutions with the same lending policy employ models which project significantly different capital and risk costs when rating their clients. As a result, developing monitoring tools that enable comparison of individual internal models and regular monitoring of the lending practices of the individual institutions have recently gained prominence in international supervision. This study presents a possible, simple yet stable and readily applicable corporate monitoring framework which is in line with the Hungarian and international regulation and best practices.

Journal of Economic Literature (JEL) codes: C55, C53

Key words: modelling and analysis based on large databases, forecasting

1. The development characteristics and goals of the monitoring tool

1.1. Internal models used in client rating

In the case of the internal models used by credit institutions in client rating for assessing creditworthiness and the probability of default (PD), it can be generally stated that the most important goal is to maximise separation power. The main regulatory requirement is to make separation power as strong as possible (*CRR, Article 174[a]*), while the requirement that the assignment to grades and the calibrated PD values should reflect the business and risk management processes of the institution (*CRR, Article 171[c]*) is only a secondary stipulation. Perhaps partly as a result of this, in many cases, institutions themselves do not clearly declare the

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goals they wish to achieve by improving their internal models, i.e. whether their aim is to give a stable rating on each point of the economic cycle or as accurate a PD estimate as possible for a given point in time. Obviously, depending on the maturity of the products offered to the client base of borrowers, both approaches may be viable and warranted, but it can be often observed that, when pricing short-term products, a through-the-cycle PD is used, and, conversely, long-term products are priced using risk factors characteristic of a given moment. "Hybrid" rating and PD calibration approach is also widely employed.

This study employs a methodology which is as close to a through-the-cycle internal risk rating system as possible and meets the following criteria:

(*1*) The number (share) of companies assigned to the individual rating categories is essentially the same at all the points of the cycle.

(*2*) Therefore, the short and medium-term migration across the rating categories can be attributed mainly to the changes in the external macroeconomic environment and, to a lesser extent, to the shifts in the financial or economic characteristics of a given company.

(*3*) The categories not only capture the relative risks of the individual companies, but do so in a way that the PD value observed in the individual categories changes as the external economic environment becomes less favourable. Of course, there is no perfect through-the-cycle or point-in-time modelling framework, but as we shall see later, a monitoring and rating methodology almost independent from the economic cycle can be achieved by choosing the right variables, at least in the segment of micro, small and medium-sized enterprises.

Therefore, the main goal and starting point of the modelling was to create a long-term rating system consistent with the aforementioned criteria, with special emphasis on ranking power and appropriate calibration with respect to the PD parameter. The secondary goal was to create a robust methodology and segmentation framework which only necessitates recalibration or revaluation under special circumstances or not even then. The qualitative and quantitative tests described below examine the compliance with these two goals.

In addition to the methodological goals, the ultimate aim of developing the monitoring tool is its practical utilisation within the framework of regular supervision. This is supported by its robust nature, which entails easy interpretability for senior management and a minimal maintenance requirement on the part of the experts operating it. Furthermore, the through-the-cycle calibration allows for detailed analysis of the long-term risks of a given financial institution's corporate portfolio, as well as the relatively smooth, modular integration of additional streams of development. Finally, it is worth mentioning that consistency with the international supervisory practices and methodology, as well as the implementation of international best practices in Hungary are also sought to be achieved. As a reference, the simplified segmentation of mortgage portfolios by loan-to-value used by the Bank of England (*2015, Subpoint 2.)* for capital requirement calculations, and the use of the reference calculations of the European Central Bank during the various Pillar 1 and Pillar 2 model reviews (*Schoenmaker–Véron 2016:130*) can be mentioned here.

1.2. Databases used

The data used for segmentation and modelling were obtained from the databases of the National Tax and Customs Administration of Hungary (NAV) and Opten (a privately held company, which maintains a corporate register database). The databases were used solely for statistical purposes, i.e. anonymously, and no unique client data was utilised during either the segmentation or the modelling steps. The NAV database was designated as the source of complete register for corporate clients, given the fact that it contains the official balance sheet and P&L figures for all Hungarian companies, and is therefore a comprehensive company register. The appropriate field in the Opten database served as the indicator of negative legal events (that are as follows: liquidation proceedings, bankruptcy proceedings, court-ordered company deregistration, completed liquidation, involuntary dissolution) as “hard” default events, i.e. as the output variable. As only a negligible portion of the companies concerned return to a clean, operating status after the initiation of a negative legal event (actually less than 1 per cent do so), in the case of all companies affected by negative events, the first negative event was taken into account during the modelling.

As can be seen from the above, the explanatory variables (balance sheet and P&L figures) are annual and “application” type data from the perspective of credit risk models. As we demonstrate later, risk segmentation can be performed with adequate accuracy using this approach.

With respect to the analysis of the NAV and the Opten databases, the available literature (*Bauer–Endrész 2016, Table 1*) gives a detailed overview about the fact that on average, 33.8 per cent of negative events occur within the first year of submitting the financial statements, 21.1 per cent occur between the first and the second year, 14.7 per cent occur between the second and the third year, while the remaining roughly 30 per cent occur later. The cited analyses are not repeated here, as no different phenomena were observed in the analysis of the databases. Nevertheless, we believe it is important to underline that the foregoing observations call for appropriate development and continuous validation. These validation analyses will be presented in the corresponding subpoints of the current study.

1.3. Segmentation and modelling approach employed

Modelling corporate default and bankruptcy risk and its methodology has a very long history. For the sake of brevity, we do not attempt to give even a modestly comprehensive overview here and only examine the most relevant international and Hungarian antecedents. The international literature is presented with respect to the motivation of the series of articles, while the Hungarian literature is examined in view of the databases and practices used.

1.3.1. Overview of the literature

In an international context, it can be stated that the methodology used for modelling corporate default and bankruptcy risk is quite varied, both from a business and a supervisory-prudential perspective. In an international supervisory survey, the Bank for International Settlements analysed the differences between the Pillar 1 risk weights applied by large banks which can be deemed "similar" from their respective risk profiles (*BIS 2013*). In the case of the corporate segment, the study mainly attributes the not fully justifiable variability in risk weights to the differences in the PD parameter. The British central bank reached a similar conclusion in its November 2012 Financial Stability Report (*Bank of England 2012*), in the third chapter of which a variability of between 50 per cent and 150 per cent was observed with respect to the risk weight of corporates, depending on the point in time. This is obviously partly attributable to the risk profile of the institutions, but it is also markedly influenced by the sample size available to the institutions for parameter estimation, as well as by the methodology employed. The latter was one of the main sources of the significant difference, even in the case of relatively large portfolios with tens of thousands of clients. This means that a supervisory reference or monitoring model not only needs to be consistent internally, from a methodological perspective, but must also cover as broad a sample as possible. Precisely because of this, the current analysis includes all non-financial enterprises registered in Hungary that use double-entry bookkeeping, employing a uniform methodology.

Similar to the international literature, the Hungarian literature is considerably varied. Two studies by *Hajdu and Virág* (*1996 and 2001*) are among the first publications that attempted to estimate the default risk of Hungarian SMEs. MNB experts have also examined several approaches in the context of corporate credit risk in recent years, and their work is slightly similar to this study in terms of methodology and approach (*Banai et al. [2013], and Bauer–Endrész [2016]).* The latter can be regarded as the closest "relative" to our study, since it is based on the same scope of data (NAV and Opten databases), and its estimates and calibration hinge on the same output variable, i.e. negative legal events. Furthermore, in line with business processes in banking, it presents forecasting models for the corporate sub-segments (micro, small and medium-sized enterprises). Compared to Bauer and Endrész's approach, the main differences are in our system of goals and tools:

- This study is dominated by monitoring aspects, while the MNB's working paper focused more on creating a forecasting model by integrating macroeconomic variables.
- Related to this, the main goal of this study and series of articles is to implement short and long-term calibration as neatly as possible, while in the above-mentioned literature the authors only attempted to achieve the highest ranking power possible, taking no calibration aspects into account, or only to a very limited extent.
- The authors of the working paper utilised a classic logistic regression estimation and variable selection methodology, while this study employs machine learning algorithms with expert adjustments, albeit it also uses logistic regression as the base learner.
- Bauer and Endrész used bankruptcy proceedings, liquidation and dissolution as negative events, while the present study includes a somewhat wider scope of negative events, as presented earlier, i.e. liquidation proceedings, bankruptcy proceedings, court-ordered company deregistration, completed liquidation and involuntary dissolution. This disparity does not cause a marked difference either in the rate or dynamics of the negative events.

In summary, while Bauer and Endrész, using a wide range of variables and integrated macroeconomic variables into their model, set out to create a model for forecasting negative events with strong predictive power, this study shows a "minimalist", low-maintenance intense segmentation and modelling framework that can also be used for monitoring purposes if necessary.

1.3.2. Data generation and modelling methodology

In line with the principles detailed in the previous subpoints, the aim during segmentation and modelling was to create a through-the-cycle, low-maintenance, intense and stable monitoring tool. In view of the fact that companies with a financial focus (credit institutions, insurance corporations, financial enterprises, etc.) have a unique risk profile different from that of non-financial enterprises, this study developed a segmentation tool for non-financial enterprises using double-entry bookkeeping. The overview of the international modelling practices based on large databases features several approaches, out of which we employed the data-driven approach (*Norvig 2009*). This means that after compiling the large databases we chose the simplest, low-maintenance models possible, with minimal expert adjustments. The advantage of this is that although the use of additional variables and more complex models can result in stronger, better client quality separation performance, the longer-term stability of this is questionable, and according to experiences, in the case of credit risk models, there may not always be substantial relative performance enhancement.

During the development, i.e. during the in-sample parameter estimation and the out-of-sample and out-of-time validation, a time frame of 1 year was used from the balance sheet date of the financial statements (typically and in most cases 31 December). The available literature cited previously in Subpoint 1.2 (*Bauer–Endrész 2016*) used a time frame of 2 years during the development, because on average 55 per cent of negative events are concentrated in the first two years after the reference date of the financial statements. In contrast to this, but in line with the annual tax return cycle, the present study developed the model with a 1-year outcome time frame, and we examined whether the assignment to rating categories was stable for the medium-term time-excluded sample (i.e. over 1¼ years) and over the long term (i.e. several years after the submission of the given year's financial statements).

In summary, for the risk segment of non-financial enterprises using double-entry bookkeeping, we employed a data-driven, stable, readily interpretable and low-maintenance segmentation and modelling approach, which was driven by the negative event signal of the Opten database as the output variable, and by the companies' balance sheet and P&L figures as explanatory variables. (In a later study, it may be worth examining the possibility of fine-tuning segmentation models by including additional data.)

Finally, it must be pointed out that the companies established with a special financing purpose (i.e. project finance) were not filtered from the database, given the fact that the accurate delineation and separation of these companies from a company group is by no means of clear-cut undertaking in many cases. Since the modelling was performed on the basis of the number of companies, keeping these firms in the sample does not cause a significant change (as there are only about tens or hundreds of such companies overall in Hungary, depending on the definition), and, if necessary, they can be removed from the sample after they are precisely identified.

2. Corporate monitoring

2.1. Segmentation

According to the expectations of the regulatory authority, the portfolio must be divided into homogeneous risk segments during risk modelling (*CRR, Article 170 [4]).* In the case of the corporate segment, the economic rationale behind this expectation is that a micro or small enterprise employing a handful of people is much less diversified – from the perspective of its revenue sources – than a medium-sized or large enterprise, and its capital and liquidity reserves are also relatively more limited than those of a mature company. This is supported by the statistical analysis of the databases cited above, based on the 2014 financial statements (*Table 1*).

Table 1
Summary of the characteristics of corporate segments (non-financial enterprises)

	Segment boundary applied (HUF bn)	Number of companies	Total net turnover (HUF bn)	Share Capital / Total Assets	Proportion of profitable companies	Average FTE	Average size of Balance Sheet (HUF bn)
Large Corporate	>15	576	43,305	11.8%	82%	840	63.86
Mid-sized Corporate	2 – 15	3,525	16,860	8.0%	88%	121	5.17
Small Enterprise	0.3 – 2	18,268	12,791	2.9%	89%	25	0.70
Micro Enterprise	0 – 0.3	345,959	9,191	0.5%	67%	2	0.03

Source: Own calculation based on NAV database

The segmentation based on net sales revenue and used in the table is partly consistent with the segment limits stipulated by international standards (*EU SME regulation 2005; CRR, Article 174*). Nonetheless, when separating the segment of medium-sized and large enterprises, the segmentation was primarily based on Hungary's characteristics, taking into account expert segment limits, and the net sales revenue-based segment limits that can be consistently determined for 2000-2016 by quantitative tools (decision trees) when creating the segmentation model. The overview of the headcount figures attests that even if they were analysed in more detail and given more weight, it would not result in a substantially different segmentation.

2.2. Modelling practice employed

As suggested earlier, the modelling within the individual corporate segments was performed in a data-driven manner, using expert adjustments, in the following steps:

(*1*) Separation of the segment with the given net sales revenue was based on the final financial statements (corrected, where applicable) for the given year. During modelling, only those companies were taken into account that filed a tax return in the given year. Those that did not were not included in the calculations, since they were basically "dormant" companies, typically operating with losses for several years, the higher risk of which was already captured by the financial statements from earlier years.

(*2*) Using the balance sheet and profit and loss account variables, a group of financial variables was chosen for each year (between 1999 and 2013) which had the strongest predictive power with respect to the negative legal events within one year after the financial statements. These variables were used to create complex financial indicators based on expert assessment (see below). In order to filter out outliers, the variables' "pseudo" logarithm was derived (in the case of variables with negative values, the logarithm of their absolute value was multiplied by –1).

(*3*) Using logistic regression, the coefficients of the chosen complex financial indicators were estimated for each year, and then the parameters derived for the individual points of the cycle (1999–2013) were averaged out. Essentially, the applied approach described here is "bagging" (*bootstrap aggregating*), which is a well-known technique in machine learning, i.e. the values of the parameters estimated for the subsamples created by the bootstrap method were averaged out (*Breiman 1996*), and all the base learner models were logistic regression models. During practical application, this method produces demonstrably more stable results with all learning algorithms, logistic regression included, and based on the results presented later, this is true in this case as well.

(*4*) Within the segment with the given net sales revenue, the "cycle-independent" model determined in Step (3) was used for assigning a score to each company, and then the firms were grouped into risk categories by establishing the thresholds.

Naturally, an iterative approach was used in Steps (2)–(4) in the modelling, and the variables that did not prove to be stable – either due to data quality or other reasons – were not used in modelling the given, final subsegment defined by the net sales revenue limits.

Step (2) covered the variable selection step compulsory in modelling. As a first step in variable selection, before embarking on the iterative process described above, the ranking power of the individual variables was assessed in the case of the individual financial (balance sheet and P&L) figures, for all years and segments. After this, the variables the coefficients of which proved to be unstable or volatile in the modelling sample were removed. Finally, the complex variables were derived from the stable variables with strong ranking power in the manner already described. In all cases, these complex variables proved to be stronger than the variables' individual ranking power.

Companies were assigned a score and grouped into risk categories in Step (4) using the long-term parameters. The latter step was performed with a decision tree, with the establishment of optimal cut-off points (*Joopia 2016*). This step was almost fully data-driven, with a single adjustment: the number of risk score thresholds determined annually was not the same across years, but their values were practically the same in each year. Accordingly, the most frequent thresholds that could be deemed stable were chosen for determining the final risk rating.

2.3. Monitoring models within the individual segments

In view of their large number, the credit risk quality of large corporates can only be assessed individually, and in their case, due to their special nature, the expert analysis-type risk assessment approach is more appropriate. Accordingly, in the following we present the further segmentation of micro, small and medium-sized enterprise segments separated based on net sales revenue as shown in Subpoint 2.1.

2.3.1. Microenterprise segment

As a result of the iteration process described in Subpoint 2.2, in the case of the microenterprise segment, the variables shown in Table 2 proved to be the indicators exhibiting a stable explanatory power and showing an appropriate performance for all points in the cycle.

Table 2
Explanatory variables chosen for the microenterprise segment and their values for the given year's financial statements

Year of Annual Report (Review date: 31st December)	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Average
Debt servicing capacity	0.085	0.070	0.090	0.100	0.089	0.100	0.085	0.094	0.092	0.080	0.069	0.053	0.088	0.084
Fixed Assets / Long term liabilities	0.065	0.081	0.050	0.043	0.044	0.039	0.066	0.065	0.071	0.060	0.077	0.086	0.061	0.062
Liquid Assets / Short term liabilities	–0.206	–0.200	–0.185	–0.166	–0.148	–0.153	–0.158	–0.155	–0.141	–0.170	–0.168	–0.144	–0.220	–0.170
Total Expenses / Net Sales Revenues	0.063	0.076	0.024	0.029	0.037	0.017	0.040	0.025	0.019	0.020	0.029	0.045	0.017	0.033

Source: Own calculation based on the NAV and Opten databases

The set of variables include the following complex financial indicators:

• indicator capturing *debt service*

$$debt\ burden = \frac{pre\text{-}tax\ profit}{interest\ paid + short\text{-}term\ liabilities}$$

• indicators capturing the *short and long-term liquidity position*

$$long\text{-}term\ liquidity\ position = \frac{invested\ financial\ assets + tangible\ assets + immaterial\ assets}{long\text{-}term\ liabilities}$$

$$short\text{-}term\ liquidity\ position = \frac{financial\ assets + securities}{short\text{-}term\ liabilities}$$

• *productivity indicator*

$$productivity\ indicator = \frac{(material + personal + other)\ expenditures}{sales\ revenue}$$

Similar to the debt coverage and payment-to-income ratio indicators in force in the household segment as stipulated by the Hungarian regulations, the indicators use the debt service capacity of corporate clients as well as the group of assets available as collateral for loan repayment as risk indicators.

Using the above variables and the averaged parameters for each year and assigning corporate clients to rating categories based on the scores derived in this manner, we arrive at the one-year negative event proportions for each rating category, as presented in Table 3. Based on this table, the model ensures monotonous risk ordering for each year in the cycle, i.e. the minimum requirement of monotonicity on each point of the cycle mentioned in Subpoint 1.1 is satisfied. Furthermore, it is worth mentioning that across the categories, in the years that were not characterised by economic slumps, the probability of companies' negative event involvement doubled in an almost linear fashion. In the periods characterised by macroeconomic stresses – i.e. in 2009 and 2010 – the relative risk between the rating categories decreases, which is not unprecedented however. This is because in better categories, the heightening of relative risks is to be expected much more, while in the case of companies of a poorer quality, a crisis is only the last straw for them before they stop operating as going concern.

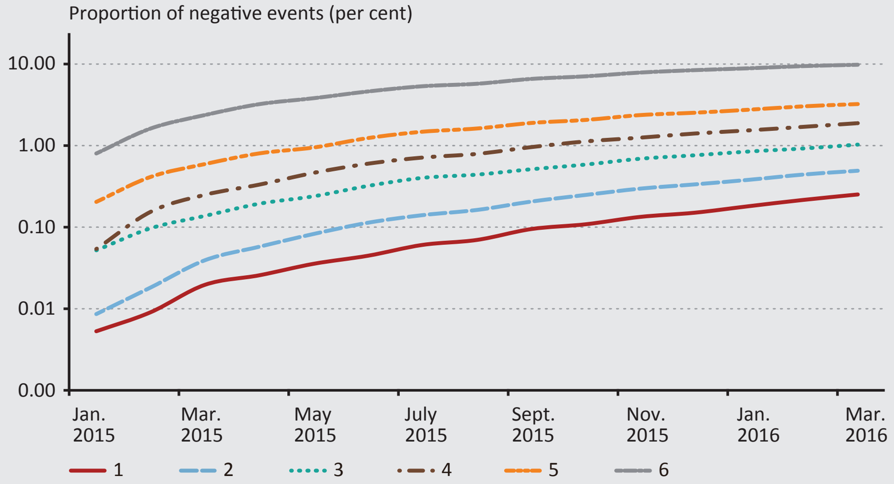
Table 3
One-year negative event proportion within the rating categories of the microenterprise segment

	Year of NAV Annual Report															
Rating	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**Average**
1	0.22%	0.25%	0.19%	0.25%	0.25%	0.26%	0.33%	0.33%	0.43%	0.47%	0.63%	0.80%	0.21%	0.23%	0.18%	0.3%
2	0.42%	0.53%	0.36%	0.45%	0.50%	0.47%	0.51%	0.48%	0.63%	0.75%	0.88%	0.92%	0.37%	0.40%	0.38%	0.6%
3	1.00%	1.35%	0.88%	0.99%	0.90%	1.05%	0.93%	0.97%	1.18%	1.39%	1.32%	1.32%	0.65%	0.76%	0.80%	1.0%
4	1.76%	2.02%	1.48%	1.78%	1.55%	1.44%	1.68%	1.65%	2.08%	2.21%	2.05%	2.08%	1.04%	1.35%	1.47%	1.7%
5	3.33%	3.84%	2.65%	2.82%	2.36%	2.54%	2.63%	2.67%	3.15%	3.43%	3.08%	3.09%	2.01%	2.34%	2.55%	2.8%
6	9.98%	11.67%	7.81%	9.02%	7.32%	7.96%	7.82%	7.85%	9.08%	9.80%	9.94%	8.82%	6.88%	7.96%	7.97%	8.5%
Segment	1.2%	1.3%	0.9%	1.1%	1.0%	1.0%	1.1%	1.1%	1.3%	1.6%	1.8%	1.8%	1.0%	1.2%	1.1%	1.2%

Source: Own calculation based on the NAV and Opten databases

In order to test the model's out-of-sample performance, the assignment to risk categories was performed based on the 2014 financial statements. Based on *Figure 1*, the model's out-of-sample performance is adequate, as it separates between the individual risk categories at all points in time.

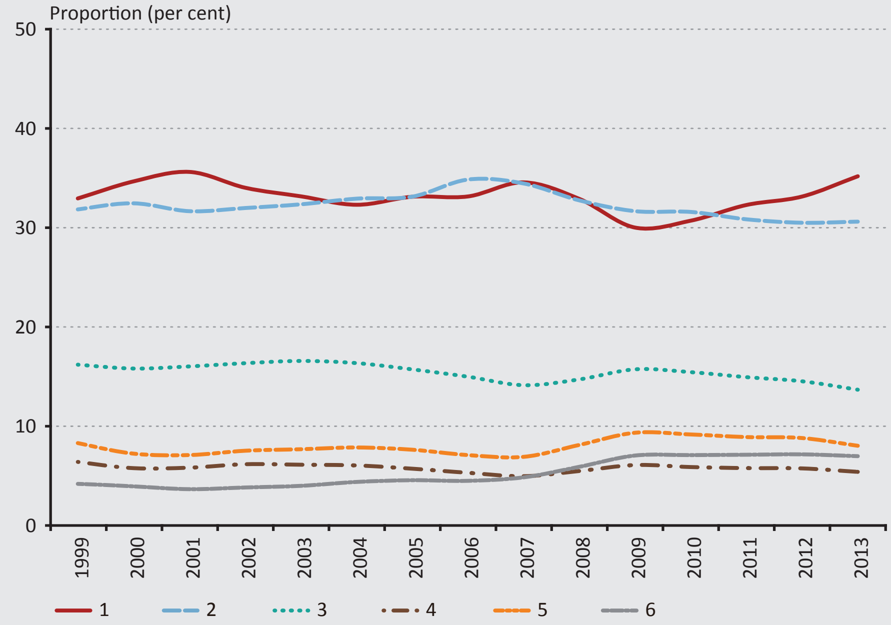
Figure 1
Cumulative monthly negative event involvement of microenterprises with financial statements in 2014



Source: Own calculation based on the NAV and Opten databases

As a second test, we examined the adequacy of the model's long-term classification through the migration of clients between rating categories. Although the data in *Figure 2* show that a slight downward migration occurred during the crisis and that after it passed, a migration in the opposite direction could be observed, overall this does not materially influence the model's through-the-cycle nature. This also means that the model primarily assigns greater risk to a given company through the higher probability of default within the category, and not through the downward migration of the company.

Figure 2
Distribution of microenterprises across the rating categories of the microenterprise segment

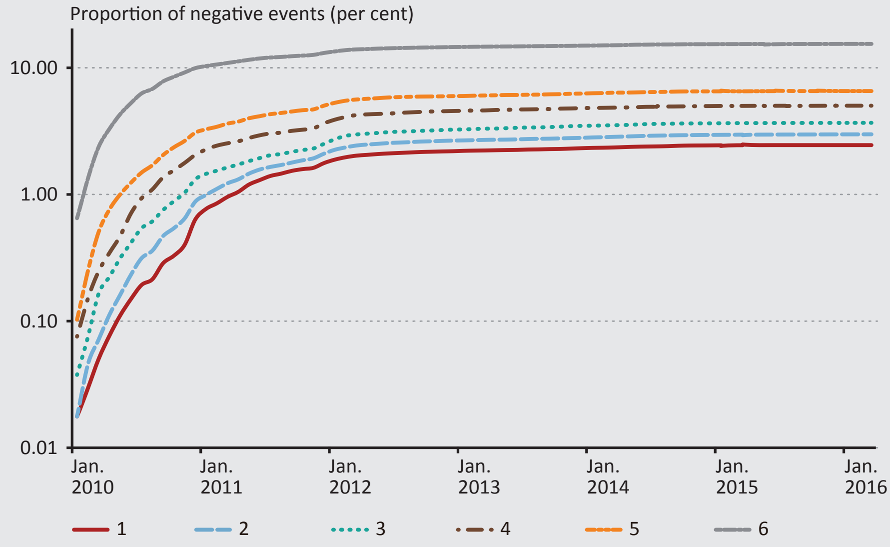


Source: Own calculation based on the NAV and Opten databases

Finally, we examined whether the risk rating provided for a long-term monotonous separation, which is not only significant from the perspective of testing the through-the-cycle nature of the model, but is also important from the aspect of the process, as detailed earlier in Subpoints 1.2 and 1.3 (missing financial statements), and from the aspect of development (relevance of choosing the output time frame). Based on *Figure 3*, it can be stated that the model has stable separation power even in a long outcome frame, and the rating derived in a 1-year time frame can be applied to very long horizons.[1]

[1] In this study, these tests are only presented for the micro, small and medium-sized enterprises that submitted financial statements on the accounting dates of 31 December 2009 and 31 December 2014. Upon request, the authors can send an analysis for other accounting dates to demonstrate the model's stability.

Figure 3
Cumulative monthly negative event proportion of microenterprises with financial statements in 2009



Source: Own calculation based on the NAV and Opten databases

All in all, in the microenterprise segment, with respect to companies' negative event involvement, strong segmentation power can be achieved by using four variables with a strong economic content. The variables are stable both from the perspective of their distribution and their ability to classify companies, and they are persistently able to separate companies with respect to their ability to survive from month to month, at all points in the cycle.

2.3.2. Small enterprise segment

Similar to the microenterprise segment, the strong and stable variables in the small enterprise segment proved to be the debt burden and the indicator capturing short-term liquidity, which is shown in Table 4 (the definitions of the variables are the same as in Subpoint 2.2.1). It is readily observable from the values of the parameters that compared to the microenterprise segment, the small enterprise segment is more sensitive to the magnitude of debt servicing and to short-term liquidity problems, provided, of course, that everything else remains the same.

Table 4
Explanatory variables chosen for the small enterprise segment and their values for the given year's financial statements

Year of the financial statements (accounting date: 31 December)	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Average
Debt burden	0.145	0.106	0.117	0.111	0.120	0.105	0.096	0.112	0.101	0.101	0.090	0.073	0.103	0.105
Liquid assets / Short-term liabilities	−0.334	−0.167	−0.201	−0.333	−0.232	−0.237	−0.202	−0.227	−0.192	−0.273	−0.256	−0.240	−0.186	−0.237

Source: Own calculation based on NAV's and Opten's database

It was impossible to create a stable model in the medium size segment due to the low number of negative events (around 10-30 a year for approximately 3,000 companies annually, depending on whether there was an upswing or a slump in the economy). Therefore the small enterprise model was used as a "shadow" model, and the same thresholds were used for assigning rating categories to the medium-sized enterprises, which, as presented below, produced an acceptable result that required only some minor fine-tuning. In the case of both the small and medium-sized enterprise segments, the detailed definitions of the debt burden, liquid assets and short-term liabilities were the same as in the microenterprise segment, i.e. the results were derived the same way as presented there.

2.3.3. Small enterprise segment

The two variables presented in the previous subpoint and used in modelling are stable and strong, however, the optimal segmentation of scoring only enabled the division into four rating categories. This also shows that – as we shall demonstrate it later – that in itself, a higher value of the AUC indicator does not necessarily indicate a stronger model, as the segmentation potential, i.e. the separation of false and actual positive cases may also be stronger in the case of model with a lower AUC indicator.

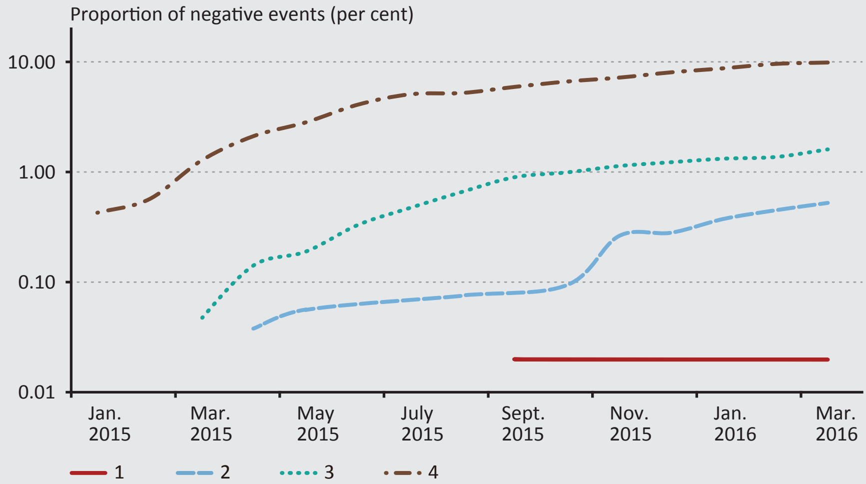
Table 5
One-year negative event involvement within the rating categories of the small enterprise segment

	Year of the NAV report															
Rating	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Average
1	0.08%	0.07%	0.06%	0.05%	0.05%	0.05%	0.16%	0.15%	0.17%	0.23%	0.14%	0.27%	0.25%	0.15%	0.07%	0.1%
2	0.07%	0.39%	0.22%	0.54%	0.40%	0.63%	0.45%	0.47%	0.57%	0.78%	0.77%	0.91%	0.30%	0.23%	0.08%	0.5%
3	1.31%	1.68%	1.13%	1.76%	1.50%	2.34%	1.60%	1.33%	1.74%	2.41%	2.05%	1.78%	1.57%	1.01%	0.74%	1.6%
4	8.63%	5.27%	6.70%	11.78%	8.16%	10.31%	8.34%	10.70%	9.90%	14.78%	10.69%	9.87%	7.63%	7.34%	6.51%	9.4%
Segment	0.8%	0.7%	0.6%	1.0%	0.8%	1.1%	0.9%	0.9%	1.1%	1.9%	1.7%	1.5%	1.1%	0.8%	0.5%	1.0%

Source: Own calculation based on the NAV and Opten databases

Similar to the model validation practice employed in the case of microenterprises, the cumulative proportion of negative events for the subsequent one and a quarter of a year was also examined in the case of the small enterprises which filed a tax report with the accounting date of 31 December 2014. The separation was stable, both for a month-by-month horizon and a multiple-year horizon.

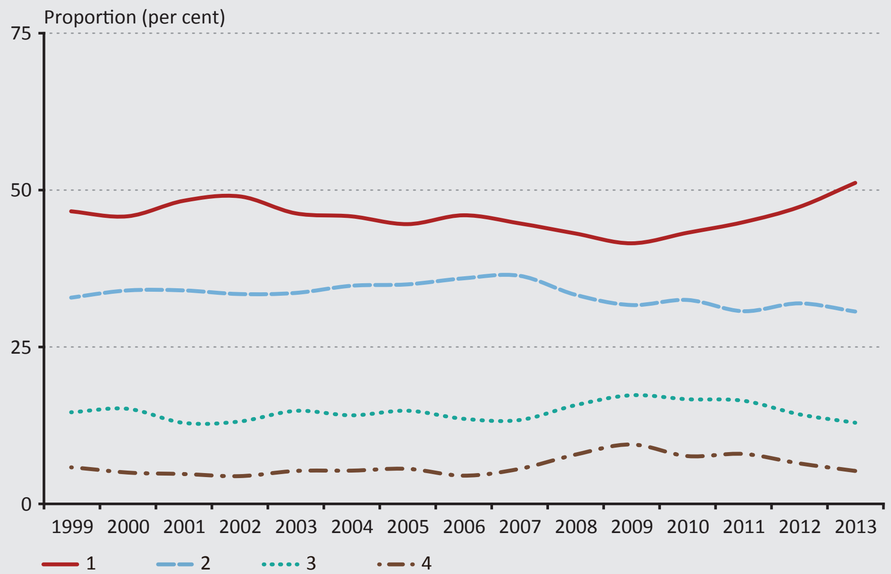
Figure 4
Cumulative monthly negative event proportion of small enterprises with financial statements in 2014



Source: Own calculation based on the NAV and Opten databases

The test presented in the case of microenterprises on the stability between the rating categories of the segment was also performed for small enterprises. The test demonstrates that there is no considerable migration risk in the small enterprise model either, however, partly due to the smaller number of variables, the risk is more pronounced than in the case of the microenterprise model. Nevertheless, it is clear that cross-category migration primarily happens between the 1st, best and the 2nd category, which does not materially jeopardise the through-the-cycle nature of the model. At the same time, going forward, the addition of further variables may be worth considering in order to ensure better smoothing of the ratings' distribution.

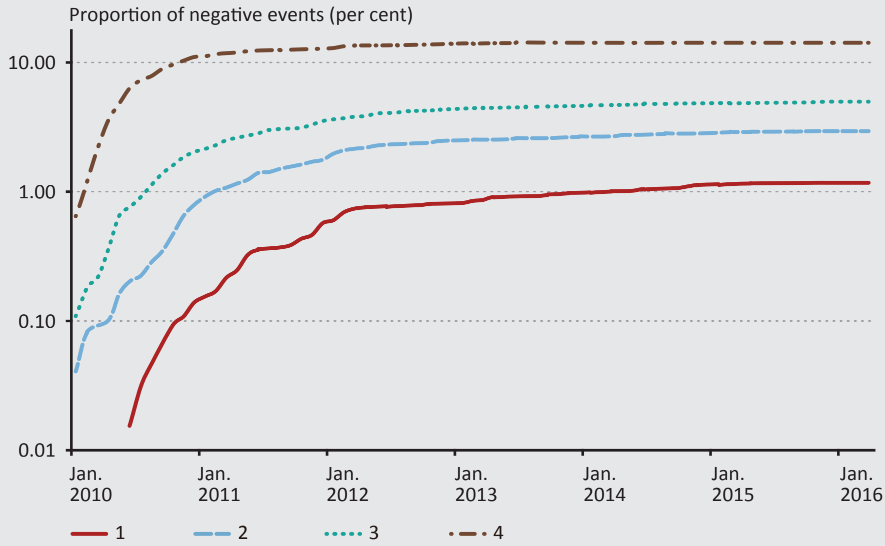
Figure 5
Distribution of small enterprises across the rating categories of the small enterprise segment



Source: Own calculation based on the NAV and Opten databases

Finally, for small enterprises it was also examined whether the risk rating provided for a long-term monotonous separation, and this test had the same significance as described in the case of the microenterprise model. Based on *Figure 6*, it can be stated that the small enterprise model has stable separating power even in a long-term outcome time frame, and the rating derived in a 1-year time frame can be applied for very long horizons.

Figure 6
Cumulative monthly negative event involvement of small enterprises with financial statements in 2009



Source: Own calculation based on the NAV and Opten databases

2.3.4. Medium-sized enterprise segment

In addition to the modelling and segmentation problems indicated in Subpoint 2.2.2, due to the small number of elements in the medium-sized enterprise segment, there is no monotonous risk separation at all points in time. This is shown in Table 6: the proportion of one-year negative events by risk categories is monotonous almost exclusively in crisis years.

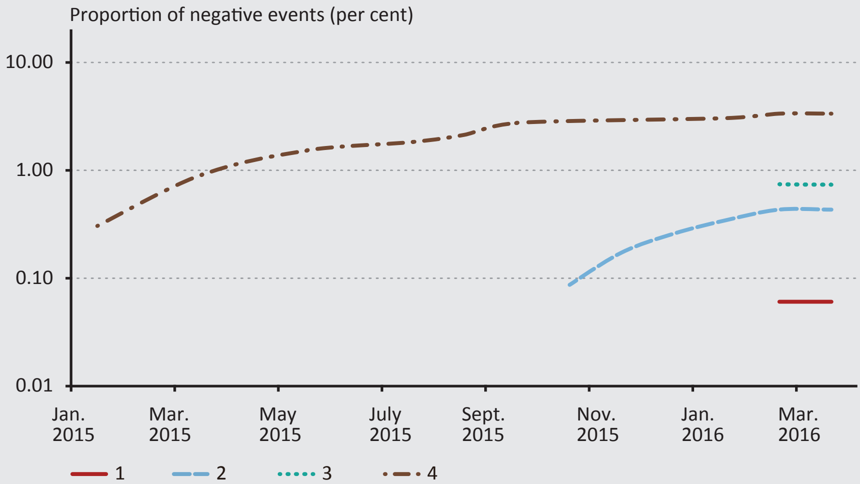
Table 6
One-year negative event proportion within the rating categories of the medium-sized enterprise segment

	Year of the NAV report															
Rating	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Average
1	0.00%	0.00%	0.00%	0.00%	0.12%	0.00%	0.22%	0.19%	0.37%	0.00%	0.00%	0.10%	0.17%	0.08%	0.00%	0.1%
2	0.20%	0.00%	0.14%	0.25%	0.72%	0.62%	0.70%	0.94%	0.24%	0.59%	0.10%	0.38%	0.09%	0.00%	0.00%	0.3%
3	0.00%	0.00%	0.00%	0.00%	1.21%	0.36%	0.67%	1.61%	1.16%	2.61%	0.77%	0.98%	0.73%	0.00%	0.24%	0.8%
4	2.72%	1.46%	3.21%	2.43%	3.66%	6.04%	4.98%	3.68%	4.79%	7.37%	4.46%	1.90%	3.28%	2.49%	2.95%	3.9%
Segment	0.4%	0.2%	0.4%	0.3%	0.9%	1.0%	1.1%	1.0%	0.9%	1.8%	1.0%	0.6%	0.7%	0.3%	0.4%	0.8%

Source: Own calculation based on the NAV and Opten databases

Nonetheless, based on Table 6, risk segmentation exhibits a stable and monotonous classification over the long term. This can readily be judged by employing the test used for micro and small enterprises. After the first year following the balance sheet date of the financial statements, the rank ordering between the rating categories is restored and is monotonous again in the medium term, as attested by *Figure 7*.

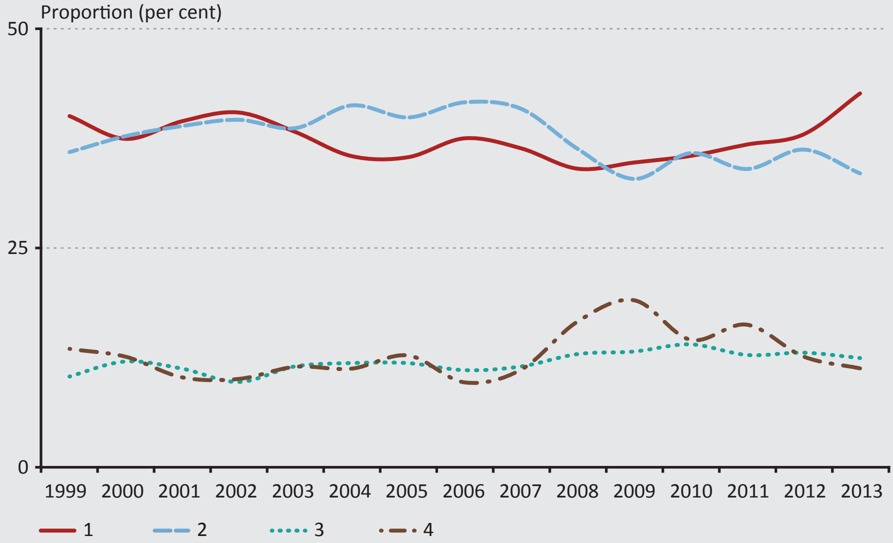
Figure 7
Cumulative monthly negative event involvement of medium-sized enterprises with financial statements in 2014



Source: Own calculation based on the NAV and Opten databases

Partly due to the small number of elements in the medium-sized enterprise segment and the extremely high explanatory power of the debt burden and short-term liquidity variables in this segment, there is a dynamic migration between the two better and two weaker categories in the case of the years characterised by poorer and better economic conditions. Due to this and the unique characteristics that are more pronounced in the case of medium-sized enterprises, this segmentation model is the weakest, and its use must be supplemented by expert opinion and other qualitative and quantitative information, just as in the case of supervised institutions. Going forward, the model should be expanded in this direction. Nonetheless, in its present form, it can be used for simpler risk monitoring analyses.

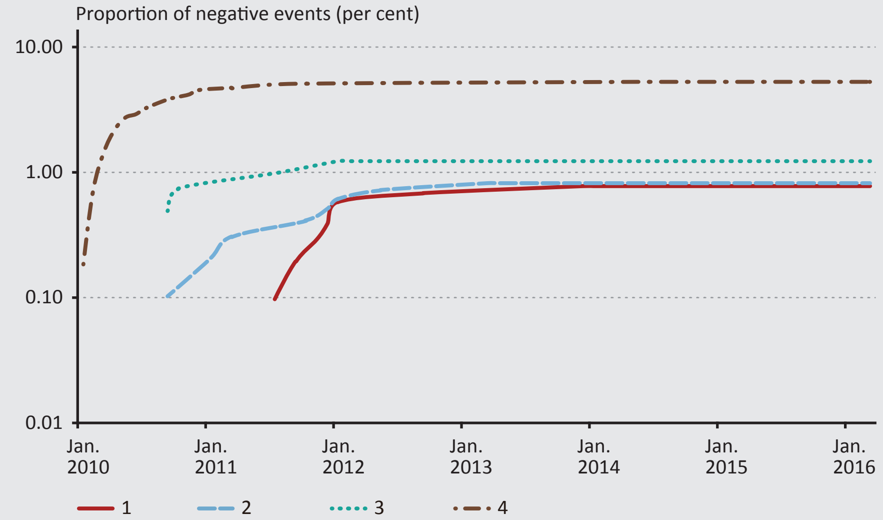
Figure 8
Distribution of medium-sized enterprises across the rating categories of the medium-sized enterprise segment



Source: Own calculation based on the NAV and Opten databases

Finally, the long-term monotonicity of the risk rating was also examined in the case of the medium-sized enterprises. Based on *Figure 9*, it can be stated that the medium-sized enterprise model has stable separating power even in a longer outcome time frame, and the rating can be applied for very long horizons, not just for a 1-year forward-looking time window. In the case of this segment, it is also worth noting that despite the low number of negative events, approximately a little over 1 year after the 2009 and the 2014 financial statements, the cumulative proportion of negative events had become monotonous again, which is consistent with the observed monotonous rank ordering by categories for the whole cycle, as presented in Table 6. This confirms the applicability of the (small enterprise) model in the case of the medium-sized enterprise segment as well, and the fact that the low number of negative events does not markedly influence the short, medium and long-term stability of the model.

Figure 9
Cumulative monthly negative event proportion of medium-sized enterprises with financial statements in 2014



Source: Own calculation based on the NAV and Opten databases

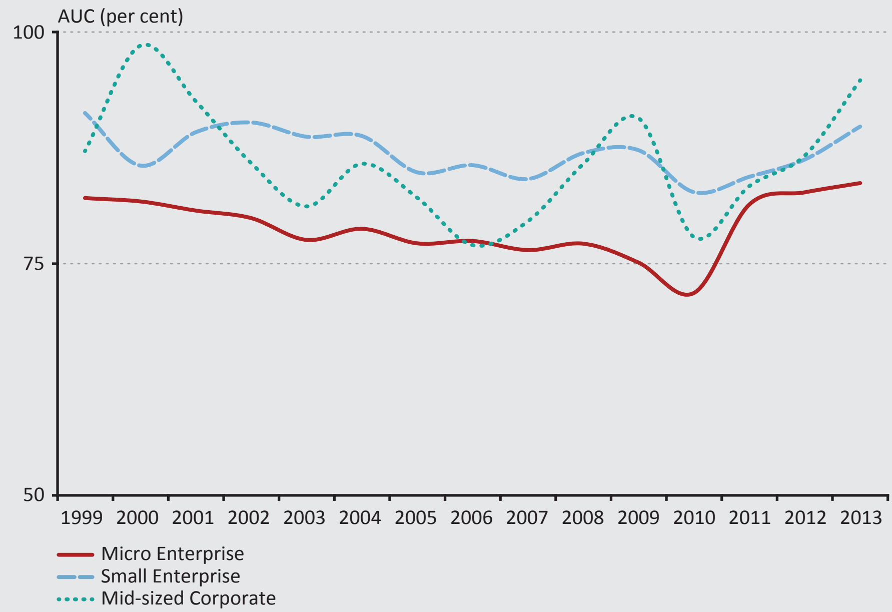
2.3.5. Further model validation tests

a) AUC indicator within the individual segments – With the score based on the given year's financial statements, rank ordering strength can also be calculated in the individual segments using a negative event within one year as an output variable. Based on *Figure 10*, when taking only the AUC indicator into account, the strongest model in the medium-sized enterprise segment is that of small enterprises, but in view of what we have seen earlier, the medium-sized enterprise ranking can only be considered stable over the medium term. This once again confirms that the AUC/Gini coefficient, although it condenses the adequacy of ranking into one number, is not suitable for the comprehensive validation of the credit risk model's adequacy in itself, i.e. the ordering performance and calibration of the rating system must be examined separately.

b) The cross-correlation analysis of the explanatory variables within the individual segments – Taking economic aspects into account, there may be a stronger-than-average correlation between the explanatory variables, since there may be a strong trade-off between short and long-term financing.[2] In order to assess the potential

[2] We wish to thank one of the anonymous reviewers of this study that they pointed out the necessity of this analysis.

Figure 10
Time series AUC indicator in the individual segments



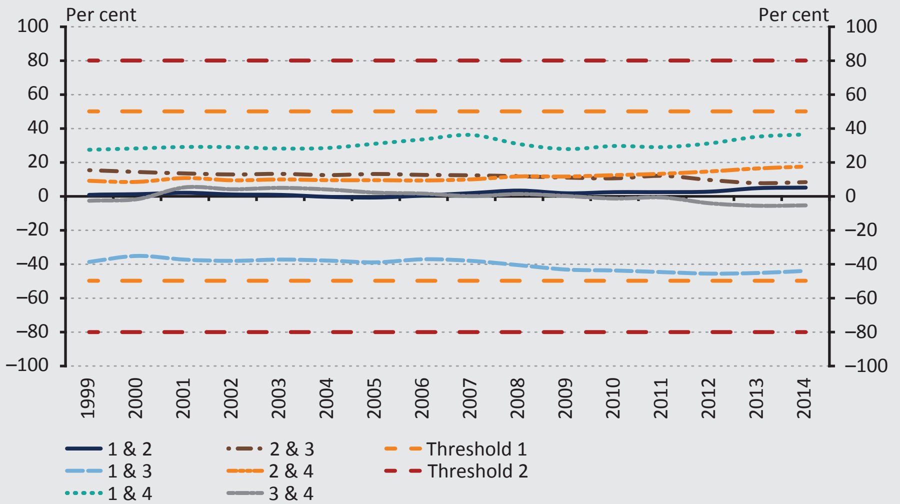
Source: Own calculation based on the NAV and Opten databases

model risk in logistic regression, we assessed the cross-correlation between the variables in pairs, for all the used variables in all the segments that were modelled.

Based on *Figure 11*, it can be stated that between the variables capturing debt servicing and the short and long-term liquidity position, there is a weaker-than-average correlation that does not materially distort and jeopardise the stability of the model and the estimates. The presence of the correlation, however, is in line with economic expectations, since a larger volume of liabilities means a weaker capacity for debt servicing.

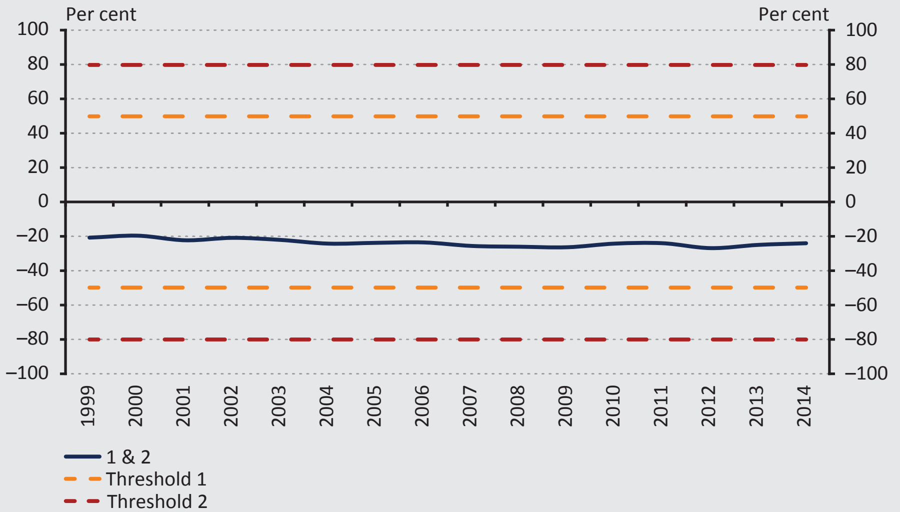
In the case of the small enterprise segment, the direction, strength and sign of the correlation tallies with economic expectations, and does not cause major problems in the model's stability or the parameter estimates.

Figure 11
Microenterprise segment – Cross-correlation between the explanatory variables in a time series view



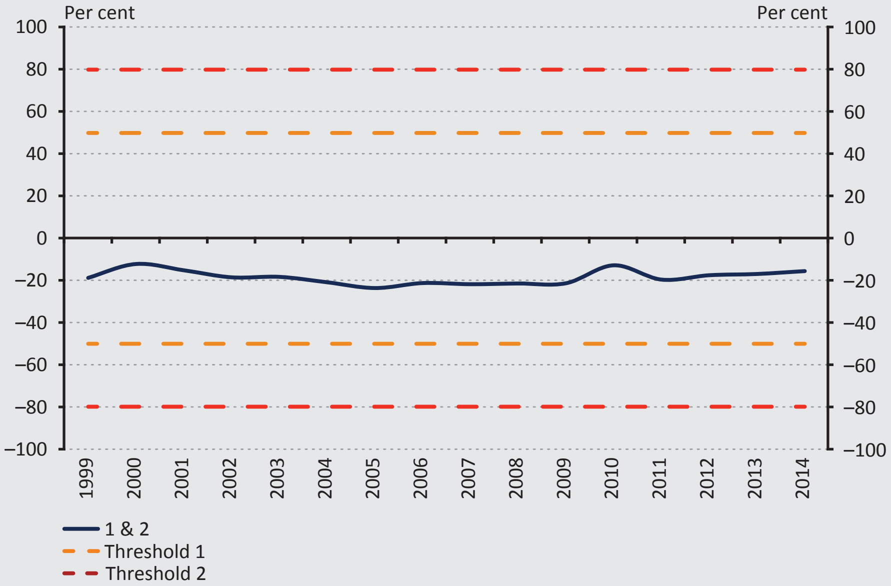
Note: Variables 1: Debt burden; 2: Fixed assets/Long-term liabilities; 3: Liquid assets/Short-term liabilities; 4: Expenses/Sales revenue.
Source: Own calculation based on the NAV and Opten databases

Figure 12
Small enterprise segment – Cross-correlation between the explanatory variables in a time series view



Note: Variables 1: Debt burden; 2: Liquid assets/Short-term liabilities.
Source: Own calculation based on the NAV and Opten databases

Figure 13
Medium-sized enterprise segment – Cross-correlation between the explanatory variables in a time series view



Note: Variables 1: Debt burden; 2: Liquid assets/Short-term liabilities.
Source: Own calculation based on the NAV and Opten databases

In the case of the explanatory variables used in the medium-sized enterprise segment, the conclusions reached in the micro and small enterprise segments can be repeated. Nonetheless, it is worth noting that the cross-correlation between the two variables is almost of same magnitude in the small and the medium-sized enterprise segments, which serves as an additional argument for the applicability of the small enterprise model in the medium-sized enterprise segment.

3. Conclusion

The monitoring model presented in this study contains several simplifications. In creating the sub-segments of enterprises, we only took into account net sales revenue, and in order to separate as accurately as possible the clients that cause actual losses (for their lenders), the risk categories determined by the monitoring tool used negative legal event categories – which can be construed as "hard" default events – as output category variables. The regulatory authority requires that clients be assigned to client groups (*in accordance with Articles 147(5) and 172(1) of the CRR*), and international definitions of default include both restructuring with a material loss and the delay in excess of 90 days (*CRR, Article 178*).

As we have seen above, even taking all these limitations into account, the tool is based on homogeneous and consistently increasing risk categories, and separates clients adequately through the whole economic cycle by their probability of negative event involvement. In case of negative events, in contrast to the softer default definitions that include either the 90-day delay or restructuring with a negative present value, recovery is not expected until closure of the legal procedure or the re-establishment of the client's solvency, it can only be resolved from the available assets of the given company. This means that the monitoring tool captures the actual credit risk losses, thereby achieving the primary goal, i.e. the establishment of an easily interpretable and usable supporting tool for microprudential supervision.

As a further step, the monitoring framework may be expanded by the integration of behavioural information, by bringing the PD calibration in line with the definition of default of being overdue for over 90 days, and, as a combination of these, the risk categories pertaining to the corporate segments may also be widened. This may be performed in a future study. In a similar vein, it is also important to create at least 7 non-default and 1 defaulted rating categories (*CRR, Article 170[1b]*) in the future with the inclusion of further information, and these categories should comply with the regulatory requirements and the expectations regarding advanced internal credit risk assessment (IRB). Of course, *the main objective was the creation of a simple, low-maintenance monitoring tool*, which was achieved. Nonetheless, striving to achieve a more precise calibration of the probability of default based on behavioural variables, our forthcoming studies must examine whether and to what extent further risk segmentation is facilitated by the incorporation of qualitative and behavioural information available in the individual corporate segments – as well as in case of the retail segment.

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Annexes

Annex 1
Microenterprise segment: Number of companies, proportion of long-term, 1-, 2-, 3-year negative events by categories.

Year of Annual Report	1	2	3	4	5	6	Total	DR1	DR2	DR3
1999	42 023	40 682	20 637	8 135	10 526	5 402	127 405	1.2%	1.7%	2.1%
2000	47 948	44 877	21 873	8 003	10 019	5 468	138 188	1.3%	1.8%	2.2%
2001	60 338	53 639	27 165	9 895	12 046	6 222	169 305	0.9%	1.3%	1.7%
2002	64 787	60 907	31 154	11 780	14 367	7 320	190 315	1.1%	1.5%	2.0%
2003	70 031	68 340	35 028	12 957	16 252	8 469	211 077	1.0%	1.4%	1.9%
2004	73 396	74 795	37 173	13 773	17 880	10 001	227 018	1.0%	1.6%	2.1%
2005	81 062	81 082	38 507	14 035	18 709	11 199	244 594	1.1%	1.7%	2.2%
2006	84 402	88 733	38 180	13 549	18 090	11 494	254 448	1.1%	1.7%	2.4%
2007	93 044	92 739	38 070	13 407	18 655	13 099	269 014	1.3%	2.2%	3.0%
2008	94 894	94 463	42 483	15 871	23 452	17 098	288 261	1.6%	2.7%	3.9%
2009	91 074	96 092	47 769	18 518	28 385	21 429	303 267	1.8%	3.2%	3.9%
2010	98 269	101 082	49 460	18 882	29 385	22 729	319 807	1.8%	2.5%	3.2%
2011	109 936	105 025	50 907	19 726	30 366	24 309	340 269	1.0%	1.7%	2.5%
2012	114 233	105 129	50 103	19 868	30 405	24 748	344 486	1.2%	1.9%	2.2%
2013	122 958	106 979	47 842	18 929	28 111	24 454	349 273	1.1%	1.5%	1.5%
DR1	0.3%	0.6%	1.0%	1.7%	2.8%	8.5%		1.2%		
DR2	0.8%	1.1%	1.8%	2.6%	4.0%	10.7%			2.0%	
DR3	1.2%	1.6%	2.4%	3.4%	4.9%	11.9%				2.5%

Source: Own calculation based on the NAV and Opten databases

Annex 2
Small enterprise segment: Number of companies, proportion of long-term, 1-, 2-, 3-year events by categories.

Year of Annual Report	1	2	3	4	Total	DR1	DR2	DR3
1999	3 904	2 761	1 226	498	8 389	0.8%	1.0%	1.1%
2000	4 509	3 347	1 492	493	9 841	0.7%	1.0%	1.1%
2001	5 274	3 715	1 411	522	10 922	0.6%	1.0%	1.1%
2002	5 711	3 898	1 532	518	11 659	1.0%	1.3%	1.5%
2003	5 816	4 223	1 864	662	12 565	0.8%	1.2%	1.5%
2004	6 097	4 626	1 880	708	13 311	1.1%	1.7%	2.0%
2005	6 198	4 864	2 066	779	13 907	0.9%	1.4%	2.1%
2006	7 135	5 577	2 106	701	15 519	0.9%	1.5%	2.1%
2007	7 102	5 776	2 125	889	15 892	1.1%	2.0%	2.8%
2008	7 260	5 615	2 652	1 326	16 853	1.9%	2.8%	3.4%
2009	6 427	4 905	2 681	1 468	15 481	1.7%	2.6%	3.2%
2010	6 705	5 044	2 590	1 185	15 524	1.5%	2.3%	3.1%
2011	7 304	4 997	2 677	1 298	16 276	1.1%	1.9%	2.8%
2012	7 575	5 117	2 287	1 036	16 015	0.8%	1.5%	1.9%
2013	8 501	5 095	2 152	876	16 624	0.5%	0.9%	0.9%
DR1	0.1%	0.5%	1.6%	9.4%		1.0%		
DR2	0.4%	1.1%	2.9%	11.4%			1.7%	
DR3	0.6%	1.6%	3.7%	12.4%				2.1%

Source: Own calculation based on NAV's and Opten's databases

Annex 3
Medium-sized enterprise segment: Number of companies, proportion of long-term, 1-, 2-, 3-year negative events by categories.

Year of Annual Report	1	2	3	4	Total	DR1	DR2	DR3
1999	547	490	142	184	1 363	0.4%	0.5%	0.5%
2000	611	616	197	206	1 630	0.2%	0.5%	0.6%
2001	718	708	205	187	1 818	0.4%	0.6%	0.8%
2002	826	809	199	206	2 040	0.3%	0.4%	0.6%
2003	820	829	247	246	2 142	0.9%	1.0%	1.2%
2004	835	971	280	265	2 351	1.0%	1.2%	1.6%
2005	889	1 003	299	321	2 512	1.1%	1.4%	1.6%
2006	1 052	1 167	311	272	2 802	1.0%	1.3%	1.6%
2007	1 090	1 225	345	334	2 994	0.9%	1.5%	1.9%
2008	1 112	1 186	422	543	3 263	1.8%	2.1%	2.3%
2009	1 023	968	389	561	2 941	1.0%	1.4%	1.6%
2010	1 030	1 039	407	422	2 898	0.6%	1.1%	1.3%
2011	1 174	1 085	409	519	3 187	0.7%	1.1%	1.4%
2012	1 204	1 149	415	401	3 169	0.3%	0.9%	1.0%
2013	1 408	1 107	412	373	3 300	0.4%	0.5%	0.5%
DR1	0.1%	0.3%	0.8%	3.9%		0.8%		
DR2	0.2%	0.7%	1.4%	4.6%			1.1%	
DR3	0.3%	0.8%	1.9%	4.8%				1.3%

Source: Own calculation based on the NAV and Opten databases

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How to set listing criteria for small and medium-sized enterprises in Hungary?*

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Since the onset of the crisis, several studies have demonstrated that the positive effect of bank lending on economic growth is limited. After a certain level, financial deepening has no positive effect on the real economy, and moreover the financial sector may actually have a negative effect on growth. Therefore, providing more diversified financing opportunities for the corporate sector is of key importance, especially for small and medium-sized enterprises (SMEs). The Budapest Stock Exchange (BSE) is taking a step in this direction now, by establishing a new stock exchange strategy for the next five years, i.e. it intends to actively open towards the SME segment as well. The objective of the study is to create a scoring system that may assist in finding those companies – primarily in the SME sector – for which it may be worth considering going public. We develop and test a quantitative scoring and ranking method on a database containing Hungarian corporate balance sheet and profit and loss account data. We present that there are companies in the SME sector for which it may be worth considering going public; moreover, the group of the top companies based on the ranking had better performance in the past than the companies currently appearing in the T and standard categories of the BSE.

Journal of Economic Literature (JEL) codes: G19, G24

Keywords: stock exchange, IPO, small and medium-sized enterprises

1. Introduction and motivation

Development of the Budapest Stock Exchange (BSE) came into focus again after the central bank of Hungary obtained a majority stake in this institution. The special purpose of this step was to create a capital market, by developing the Hungarian stock exchange, that provides a realistic financing alternative for a much wider group of enterprises than is currently the case. From 2016, the central bank of Hungary will gradually phase out its programmes to stimulate the economy, and it is likely that from 2020 the EU financing opportunities will narrow as well. Consequently,

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the availability of funding sources is increasingly important for the corporate sector to satisfy their financing requirements.

The literature also suggests that availability of diversified funding sources is crucial for the corporate sector. *Cournede and Denk* (*2015*) prepared three different estimates, for different periods. The periods started from 1961, 1971 and 1989, respectively, and lasted until the end of 2011. The sample includes all OECD and G20 countries, i.e. all the developed countries appear in it. In the course of the panel estimates, per capita GDP growth appeared as the dependent variable, whereas the explanatory variables included key variables characterising the financial sector and factors generally describing growth (for example investment ratio, population growth, level of education, etc.). One of their most important findings is that the financial sector may even have a negative effect on growth, which is true whether the role of the sector is measured with the outstanding portfolio of loans to the private sector or with the value added of the financial sector. Hence, after a certain level lending may be counter-productive. By contrast, they found a positive correlation with growth in the case of market capitalisation. Although Hungary is far from the level where the effect of lending on growth is negative (loan/GDP level of 100–150 per cent), research indicates that stock exchange development may assist in avoiding this kind of problem.

Several studies have come to a similar conclusion since the start of the crisis. Hence, the effect of financial deepening on growth is restricted, and the relative growth in lending may actually have an adverse effect above a certain level. *Sahay et al.* (*2015*) found (analysing the period of the crisis as well) that while the relative contribution of the financial markets (equity market, bond market, etc.) to growth is more or less independent of the level of development, the growth of financial institutions (banks, insurance companies, pension funds, etc.) results in a decreasing yield. The study of *Langfield and Pagano* (*2015*) also shows that bank dominance is detrimental and leads to lower growth, especially in crisis situations when real estate prices decrease significantly. Although the details of the above studies are different, they all show that the excessive dominance of bank lending is not efficient. The role of the capital markets and the banking sector must be balanced.

The research of *Cecchetti and Kharroubi* (*2015*) provides an answer to what factors may be behind the phenomenon presented above. In their analysis, they showed that bank lending does not support the really productive and innovative industries in many cases. This is because from the viewpoint of the banks it is important that borrowers should provide appropriate coverage for the loans, and thus, in general, they prefer companies where the ratio of tangible assets is high. However, the productivity of these companies is typically lower than the more innovative companies. Accordingly, all in all, bank financing de-emphasises R+D intensive companies that accumulate less tangible assets, which on the whole lowers productivity. A more active capital market may mitigate this problem as well.

The above studies also make it clear that the development of the Hungarian capital market is necessary. The stock exchange strategy created for the next 5 years (*BÉT 2016*) clearly focuses on such development. The main priorities of this strategy include that there should be new, successful IPOs (Initial Public Offering) on the stock exchange and that the bond market should also be strengthened, in addition to the equity market. For this to occur, it is necessary to strengthen the investor base. The appearance of marketable companies is also essential, since they can be sold to a wide range of investors as success stories. Thus, it is important to find corporate participants which may be ready for listing.

The objective of our present study is to create a scoring system that may help in finding those companies, primarily in the SME sector, for which it may be worth considering entering the stock exchange. We identify the scoring criteria on the basis of the literature and use it to develop a selection system, or so-called 'scoring', which further restricts the set of potentially marketable companies. We test this method on an anonymous database including corporate balance sheet and profit and loss account data and present the characteristics of the group of companies that may be listed on the basis of the methodology presented. The second section contains criteria for scoring and the literature supporting it. In the third section, we present the set of indicators actually used. The fourth section analyses the properties of the filtered groups of enterprises. The fifth section summarises our study.

2. Methodology of selecting marketable companies in the literature and in our study

Corporate factors determining the success of an IPO are examined widely in the literature. Although it can be seen that there is no single recipe for success, we can obtain a detailed picture of the variables and properties worth examining. Based on the study of *Macey and O'Hara* (*2002*), stock exchanges must change the criteria dynamically, and qualitative criteria (e.g. management structure, business plans, accounting practices) are also important, in addition to quantitative ones. An overview of the quantitative criteria is provided by *Pagano et al.* (*1998*), and Mata and Portugal (1994) (*see in more detail in Section 2.1*), whereas *Jain and Kini* (*1999*) discuss the qualitative criteria. Moreover, according to *Hensler et al.* (*1997*), the examination of risk factors also deserves special attention.

Our literature review suggests that that both quantitative and qualitative information need to be taken into account for the selection of listed companies. Furthermore, we consider it important to separately rate companies according to their risk profile. We recommend performing due diligence according to a procedure consisting of four steps. The widest set of companies would undergo a quantitative filtering and ranking that can be performed at lower cost, and then the set of companies filtered out for qualitative and attitude examination would undergo the most resource-intensive pre-IPO due diligence. Our study focuses on the methodology of selecting SMEs. Although the targets of IPOs are often large enterprises, it is much less solvable and necessary to find a standardised solution for selecting them, since this group of companies is much smaller. The four steps we recommend are as follows:

As *Step 1*, selection of the widest set of companies relevant (in the analysis: group of "analysed SMEs") using a set of quantitative indicators, in terms of the examination of marketability. The selection of indicators is based on the theoretical framework to be introduced in the following section.

As *Step 2*, on the basis of quantitative criteria, it is worth performing pre-filtering and then ranking the enterprises, while also applying some kind of risk filtering in their case (in the analysis: "pre-filtered companies" and "top 50 companies"). Thus, as a result of the scoring, we can find a group of companies which is already worth dealing with for the BSE.

As *Step 3*, in the course of the negotiations with the selected companies, the BSE should focus on the qualitative criteria of marketability as well, mentioning the attitude of the company management to financing and going public. In the course of the qualitative filtering, it is worth emphasising the factors presented in *Table 1*.

As *Step 4*, the BSE should start the classic pre-IPO phase, during which the most marketable companies and the companies with the strongest intentions to go public would undergo due diligence, with the involvement of external partners.

Table 1
Most important non-financial factors for successful IPO from the viewpoint of investors

Management credibility and experience	90%
Quality of corporate strategy and its execution	73%
Brand strength and market position	59%
Operational effectiveness	54%
Corporate governance practices	44%
Research and innovation	35%
Financial reporting and accounting control environment	30%
CEO leadership style	25%
Ability to recruit and retain talented people	14%
IFRS/US GAAP accounting tracking record	13%
Quality of investor relations	8%

Note: Values in the table represent the percentage of institutional investors that had the particular factor as one of their top five choices in 2009.
Source: Ernst and Young (2014)

Our study deals with the first two steps. In what follows, we thus consider in more detail which quantitative factors are worth taking into account.

2.1 Compiling a set of quantitative indicators

Based on the study of *Hensler et al.* (*1997*), the size and age of the company, the size of the IPO and the ownership structure (the ratio of stocks owned by "insiders") may favourably influence the likelihood of survival after the IPO (i.e. a higher value is coupled with a greater likelihood of survival). However, an increase in the number of risk factors listed in the prospectus may decrease the chance of survival. According to the analysis of *Mata and Portugal* (*1994*), focusing on Portuguese companies, the chance of survival may be influenced by the initial company size, the number of plants and the growth of the industry. Analysing American IPOs, *Jain and Kini* (*1999*) found that pre-IPO operating results and the prestige of the investment bankers increase the chance of survival after the IPO, while industry barriers and concentration decrease the odds.

Analysing Thai IPOs between 2001 and 2007, *Chorruk and Worthington* (*2010*) concluded that younger enterprises, with higher gearing and lower interest costs, are more likely to enter the stock exchange. In their study, they emphasised that part of the results may be surprising and stem from the structure of the Thai corporate sector. Moreover, it is important that IPOs were the focus of their analysis, as opposed to successful performance on the stock exchange.

The scoring presented in the study covers the first and second steps of the evaluation process consisting of the four steps presented above. We determined the indicators applied for the quantitative filtering and the ranking on the basis of the recommendations in the literature and the practices of international stock exchanges. In the course of scoring, we paid attention to compiling a set of indicators that are important for the SME sector. This may be different for large enterprises or state companies upon entering the stock exchange. In the case of the latter, the number of institutions that may be relevant for the stock exchange is much smaller. In their case, the individual background information, the recommendations of market participants, etc. may be much more important already during pre-filtering, in addition to some quantitative criteria (such as age, size, staff number, sales revenue). Moreover, it is important to point out to the fact that the methodology itself has a non-negligible uncertainty as well. One important lesson from the international literature is that the criteria of marketability can change in time and space, and the selection of the methodology is inevitably partly retrospective, as it depends on past data and observations, while selection requires a forward-looking decision. It is practical to develop the quantitative filtering with a precisely fixed procedure, but the framework needs to be handled flexibly, taking into account the uncertainty of the methodology.

The indicators that can be used for filtering and ranking SMEs focus partly on past business performance, influencing the future growth opportunities (increase in profitability and turnover, etc.), and partly on the business and demographic characteristics of the company (sales revenue, staff number, age, financial performance, market size, exports, etc.). Taking into account investor protection and reputation risks, filtering the risk factors is also justified for SMEs, since in their case the possibilities of investor protection (capacity of analysts, accounting control, media attention, etc.) are more limited and it is more likely that the ratio of less sophisticated small investors is higher.

2.1.1. Criteria related to size

The criteria related to size (sales revenue, balance sheet total, staff number, etc.) are of key importance in order to achieve appropriate competitiveness and economies of scale, and according to the research these significantly influence the likelihood of going public and the survival on the stock exchange by enterprises. Moreover, sufficiently large size may mean a guarantee for appropriate market liquidity after the IPO, which is of key importance for institutional investors, and thus supports appropriate demand for the stock. *Pagano et al.* (*1998*) also emphasised the importance of size. Moreover, they found that the size of enterprises listed on the American stock exchanges is on average greater than on the stock exchanges in Europe. The study of *Hensler et al.* (*1997*) also found that company size is, *inter alia*, one of the most important factors that increases the likelihood of survival after the IPO. The analysis of *Mata and Portugal* (*1994*) related to Portuguese companies also supports this statement.

In the case of SMEs, the size of the companies listed on SME stock exchanges may be indicative for our analysis. Based on the survey of *Harwood – Konidaris* (*2015*), market capitalisation of HUF 2.5-10 billion is typical on average on the emerging SME stock exchanges, and most listed companies are SMEs. The average market capitalisation on the New Connect platform in Warsaw is HUF 1.5 billion (2015), and there is even a company with capitalisation of HUF 10 million. The required minimum market capitalisation on the AERO platform in Bucharest is EUR 250,000.

2.1.2. Criteria related to growth and profitability

In order to stimulate demand for stock exchange securities, the requirements of investors must be taken into account. According to the surveys (*Ernst and Young 2015*), most investors ranked various indicators of profitability and sales revenue among the most important financial factors in terms of admission to the stock exchanges:

- growth in profit per share,
- growth in sales,
- return on equity,
- growth in profitability,
- growth in EBITDA.

In addition to the surveys, the empirical literature also found that one of the most important factors that may make going public a success is growth. Based on IPO data of 243 fast growing Chinese companies, *Long and Zhang* (2014) found that the likelihood of IPO is positively affected by the value of the quantity of admission, net profit and net assets.

However, when determining the weights of growth criteria, it must also be taken into account that fast growth in the past does not necessarily mean a trend of fast growth in the future, and furthermore, the development of excessive expectations is dangerous because this may lead to overvalued stock prices. Therefore, it is worth focusing on longer-term results.

2.1.3. Other company characteristics

Three audited years are typically required on the international stock exchanges, but the median age for American IPO enterprises is higher than this, ranging from 8 to 10 years on average. Based on the empirical analysis of *Garza* (*2008)*, companies aged less than 9 years are more likely to underperform and to be delisted from the stock exchanges later on. *Ritter* (*1991*) also found evidence for the explanatory power of the age of enterprises in the performance of IPOs examining the yields of investments in the first 3 years after the IPO.

Based on Hungarian research, the likelihood of bankruptcy is mainly high in the first years in the case of SMEs: Only 40 per cent of the companies survived to see the fifth anniversary of their foundation (*Tóth 2014*). The study of *Bauer and Endrész* (*2016*) arrived at a similar result, and according to this research the likelihood of bankruptcy is the highest among companies aged between 3 and 6 years, after which it decreases quickly until the 10th year after foundation.

Moreover, in connection with the selection process, we must take into account the fact that the companies on a growth path since the 1990s have matured into stable medium-sized enterprises, typically with limited, family ownership. These companies may belong to the potential target group for admission to the stock exchanges, because of the ageing and retirement of the company founders and the change of generation as well. Furthermore, enterprises financed from venture capital are traditionally important targets of stock exchange acquisitions. Therefore, during the selection of the companies, it is worth involving the profession in separately screening the enterprises in the portfolio of Hungarian venture capital companies.

According to the research of *Békés and Muraközy* (*2011*), the proportion of “gazelles” (enterprises with fast growth) is the highest among companies with a better financing situation, which employ a young, qualified workforce and have grown faster in the past as well. Moreover, the authors also warn that in the United

States the enterprises in the fast growth phase, especially in the case of company value between USD 5-100 million, are primarily financed from venture capital, not from bank loans. According to the analysis of *Bhabra and Pettway* (*2003*), the chance of long-term survival is also influenced by the size of the company, the offered quantity and the research spending of the company.

Finally, the risk filtering of the companies is also important. This should take into account the financial stability of the companies and the variables influencing the likelihood of bankruptcy (*e.g. Hensler et al. 1997*). The types of risk models such as those presented by *Banai et al.* (2016) may be capable of such filtering. Moreover, the widely used Altman Z-score (*Altman 1968*) can also perform a similar function, and several market service providers also have similar risk indices.

3. Scoring in practice

3.1. Data used

For the enterprise scoring model, we use the National Tax and Customs Administration ("NAV") database which can be accessed at the central bank of Hungary and is available for the period from 1992 to 2014. In the course of our current analysis, we rely on the period between 2008–2014, since we are essentially interested in the latest trends. The anonymous database includes the detailed balance sheet and profit and loss account data of all companies operating in Hungary and submitting simplified or complete tax returns, and some other supplementary data as well (e.g. staff number, registered office, corporate form, etc.). We formed the criteria presented in the analysis on the basis of these. Finally, in the case of comparisons with the companies listed on the stock exchange, we used the publicly accessible databases of the Budapest Stock Exchange.

3.2. Pre-filtering

The previously presented summary of the literature provided a considerable basis for the quantitative filtering performed in the course of determining the marketable companies. Since the identification of marketable enterprises from among various types of companies (state enterprises, large private businesses, and SMEs) may require a different selection process and often a consideration of different corporate characteristics, as a first step, we selected those companies from the entire company population whose characteristics correspond to the typical characteristics of SMEs:

- staff number should be at least 50, but less than 250,
- sales revenue in 2014 should be at least HUF 1 billion, but less than HUF 15.5 billion,
- balance sheet total in 2014 should be less than HUF 13.3 billion,
- there should be no state or local government ownership,
- the proportion of foreign owners should be less than 80 per cent.

The group identified in this way contains 1,684 companies, which we hereinafter refer to as the "analysed SMEs", and serves as the basis for comparison for the further analyses. After this, we formed the pre-filtered population of 331 companies, ranked in the next step, with such further filtering criteria which we deem necessary so that a company can be successful on the stock exchange. Accordingly, we required that the company:

- should have operated for at least seven years,
- should have positive shareholder's equity,
- should fulfil the definition of "gazelle" of the OECD, i.e. it should achieve growth higher than the average annual real growth of 20 per cent for 3 consecutive years.

Moreover, we also eliminated 14 companies, based on expert decision, which fulfilled the quantitative criteria listed above, but are not suitable for an IPO due to their form of operation (e.g. non-profit organisation) or ownership structure (e.g. agricultural co-operative, part of a company group).

3.3. Ranking

In order to rank the collected enterprises, we use corporate financial ratios and indicators used in the fundamental evaluation, which assess the quality of the enterprises in terms of operation, profitability, capital structure and risk. We also performed the ranking separately, taking into account liquidity indicators as well. A lower number reflects a better evaluation within the set of companies. Considering the basic principles of scoring, we look for an efficient, yet simple solution, and thus we compile the rankings on the basis of the indicators that best capture the property of the companies according to the given criterion. In many cases, we used the possible indicators that were available for as many enterprises as possible. The indicators primarily focus on profitability and business outlooks, and we performed risk filtering only after the ranking. We examined the indicators not only for a single time, but instead took into account their past 3-year average as well, which helps in avoiding misleading results because of one-time outstanding performance. By taking into account and applying an appropriate weighting of the most important corporate financial indicators accessible in the corporate database of NAV for the latest year, 2014, and the average values related to the three years between 2011-2013, we formed a composite indicator and ranked the pre-filtered companies on the basis of the values of this.

3.3.1. Indicators of profitability

Several profit ratios can be calculated on the basis of the profit and loss accounts. Of these, we use the *operating profit margin*, the *ROIC* (return on invested capital), the *effective tax rate* and the *pre-tax profit margin,* since these are the most relevant profitability measures from the standpoint of investors. The first is the quotient of the operating result and sales revenue, the second is the ratio of after-tax profit and invested capital, whereas the last is the proportion of pre-tax profit and sales revenue. As was already mentioned in the summary of the literature, a positive, stable profit ratio indicates positive investor quality, whereas the amount of and growth in the operating result determines share prices. The management of an enterprise can primarily have an effect on operating earnings, and thus the *operating profit margin* may at the same time provide feedback on the quality of the management as well. The *pre-tax profit margin* is popular among investment analysts, since management has various techniques of influencing tax payments, which can be captured by this indicator. One of the factors fundamentally influencing profitability is the *effective tax rate*, which may differ from the official corporate tax rate because of several accounting factors. This indicator provides a realistic picture of the tax burden which the company faces in its operation.

3.3.2. Operating indicators

In addition to profitability, efficient operation is one of the most important criteria in terms of marketability. Therefore, of the indicators relevant in terms of operation, we use *tangible assets per sales revenue* (*Pagano et al. 1998*), *employees per sales revenue*, *ratio of exports* and *growth of sales revenue*. We can consider *tangible assets per sales revenue* and *employees per sales revenue* as sort of productivity indicators as well. In a wider sense, these attempt to capture how successfully the company generates sales revenue with its existing assets and intellectual capital. In the case of most enterprises, the available tangible assets embody a significant part of all the assets participating in production, and therefore the nature of sales revenue creating capability of these assets is necessary for efficient operation. Similarly, the employees participating in production make up the entirety of the intellectual capital of the companies, and thus the higher the sales revenue per employee, the higher we can consider the productivity of the company. Moreover, it is important to emphasise that industry-specific factors may influence the level of the above indicators.

In the case of Hungarian and regional enterprises, empirical results verify that exporting companies are more productive and grow faster than non-exporting companies (*Rariga 2016; Békés et al. 2011; De Loecker 2007*). Since efficient operation, stable cash flow and growth are essential in terms of a possible IPO, we considered it important to take into account this information (*ratio of exports per sales revenue*) in the course of ranking. Finally, we used the *growth of sales revenue* as well, since in this company size category investors expect dynamic growth from companies entering the stock market.

3.3.3. Indicators of capital structure

In terms of the operation of an enterprise it is essential to examine its financing position and indebtedness. For this we use the *leverage ratio*, the *capitalisation ratio* and the *ratio of external funds* (*Pagano et al. 1998*). The *ratio of external funds* is a popular indicator for quantifying the capital structure of a company. A low value means that the company depends less on external funds and finances its operation largely from equity. It is worth examining the ratio of external funds not only as a proportion of total assets. Another common method for examining corporate indebtedness is the ratio of external funds to equity, also known as the *leverage indicator*. With this, we can obtain a more precise picture about the contribution of the suppliers, creditors and owners of the company to the operation of the company. The *capitalisation ratio*, which is the proportion of long-term liabilities and the sum of shareholder's equity and long-term liabilities, provides an even more detailed picture than the leverage indicator. This ratio focuses only on the structure of corporate capital, providing an even more exact picture of the extent of leverage. The analysis of the capital structure of companies provides very important information in terms of both operation and risk, but it is important to keep in mind that there is no general rule for capital structure and, in general, the optimal amount of debt depends strongly on industry and company-specific characteristics.

3.3.4. Liquidity indicators

We did not use the liquidity indicators in all the cases, because the evaluation is the least unambiguous in the case of liquidity. On the one hand, high liquidity decreases the risk of bankruptcy, but on the other hand it can also point to the fact that the given enterprise may be unable to start profitable investments from the accumulated liquid assets, and this can be a barrier to growth. This is why it appears as a sort of robustness test among the results in terms of how much it modifies the composition of the filtered company group if we take into account liquidity as well. We used two well-known indicators for the analysis of the liquidity situation of the filtered companies: the *liquidity rate*, which captures the amount of current assets available for covering short-term liabilities; and the *current ratio*, which is current assets divided by current liabilities. *Liquidity rate* is a widely popular indicator in financial reports because of its simplicity, but it may be misleading to rely solely on this indicator, since the incidental liquidation of all the current assets is less likely. It is also practical to examine the much more conservative *current ratio*, since this indicates the ratio of the most liquid assets and short-term liabilities, disregarding the asset-side working capital elements (trade debtors, inventories). It is important to note that an overly high current ratio is not necessarily positive in terms of the operation of the company, since the accumulation of large amount of current assets may hint at weak asset utilisation (instead of dividend payment or other utilisation).

3.3.5. Altman Z-score composite risk indicator (Altman 1968)

Finally, we also took into account the *Altman Z-score*, as part of a relatively simple risk filtering. This metric was developed by Edward Altman to estimate the likelihood of bankruptcy occurring within two years. The *Z-score* is based on five types of financial indicators and their factors. Its great advantage is that Altman also determined exact threshold values for this, and thus its evaluation is simple. Therefore, a value above 3 means a safe company, whereas a value below 1.81 represents a problematic company. The index can be calibrated on the basis of the following five metrics:

- Working capital / Assets
- Profit reserves / Assets
- Operating profit / Assets
- Own equity / Liabilities
- Sales revenue / Assets

In the course of our analysis we also took into account this indicator for compiling the top 50 companies. A company could be selected to the best performing companies only if the Altman Z-score reached the safe value of 3 in all the years of the three-year period from 2012 to 2014.[1]

In terms of statistics it is worth considering the weighting of the indicators used, but in practice the producers of corporate rankings typically weigh the indicators equally. On the other hand, in the course of aggregating the information, we left out the redundant variables based on a simple correlation matrix (the above list was already prepared this way). The question of weighting arises in connection with the time dimension as well, and in this regard we gave equal weights to the latest data point and the average of the previous 3 years.

4. Properties of companies selected based on the scoring

On the basis of the above criteria, we performed the quantitative filtering and ranking for the Hungarian SME sector. It is worth calculating the ranking as described above for the 331 companies that passed pre-filtering. Based on the ranking, the Budapest Stock Exchange should start the process of qualitative filtering for the companies which proved to be the best. In our current analysis,[2] we briefly show what characteristics the pre-filtered companies and the top 50 companies based on our ranking have compared to the analysed SMEs. On the one hand, this shows how efficient filtering itself is, while on the other hand it provides a picture about the group of enterprises that was able to produce relatively high growth in recent years. Moreover, we separately analyse the top 50 companies based on the ranking and compare these with the companies currently listed on the stock exchange (except for the premium category, since this category typically targets significantly larger companies).

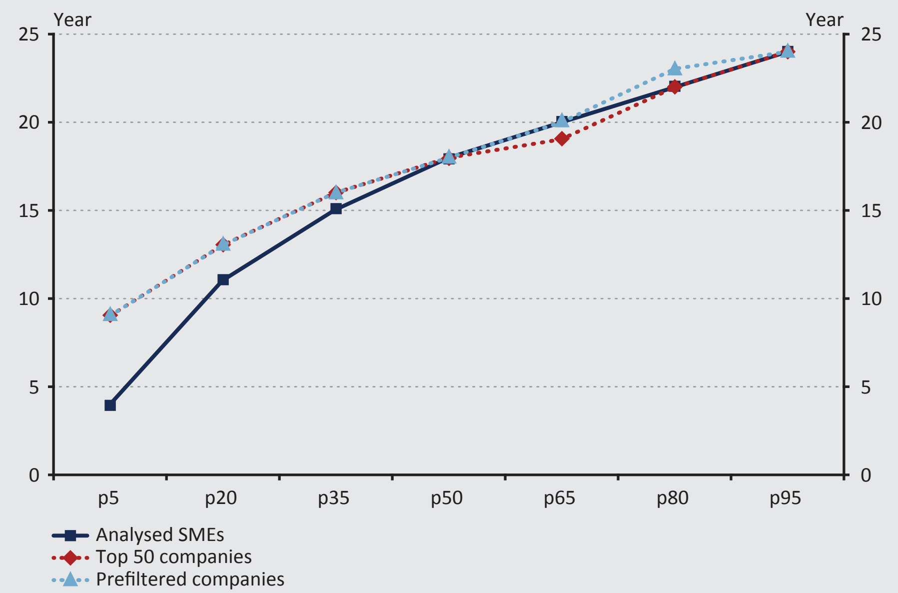
[1] Moreover, risk filtering can also be supplemented with public information accessible on the market. An advantage of using several sources of information is that one can examine whether the risk rating of an evaluated enterprise is beyond average or not, even based on somewhat differing methodologies and data sets.

[2] The more detailed descriptive statistics of the individual groups of companies are included in Tables 2-5 of the Annex.

4.1. Results of pre-filtering and ranking

As a first step, we looked at the most fundamental characteristics of the various groups of enterprises formed according to the principles presented above, such as regional distribution, classification according to sectors of the Hungarian economy, number of employees and age. It can be seen that, in accordance with the significant regional differences in the Hungarian economy, the analysed groups of companies are dominated by the companies of the Central Hungarian Region. We do not see considerable difference among the groups, since approximately 40 per cent of the analysed SMEs are located in the most developed region, whereas this ratio is 43 per cent for the pre-filtered companies, and 42 per cent for the top 50 companies. As regards sectoral distribution, we found the dominance of manufacturing within all the groups. This dominance is especially strong in the case of the top 50 companies, since among them almost every second company operates in this sector. We saw a difference in the age of the companies according to the filtering criteria, but mainly in the lower half of the distribution, since here it mattered strongly that we formulated a minimum criteria of 7 years for IPO-maturity based on the literature (*Figure 1*). However, in the upper half of the distribution this difference disappears, which may be a result of the fact that many companies do not even want strong growth and produce similar performance over several decades.

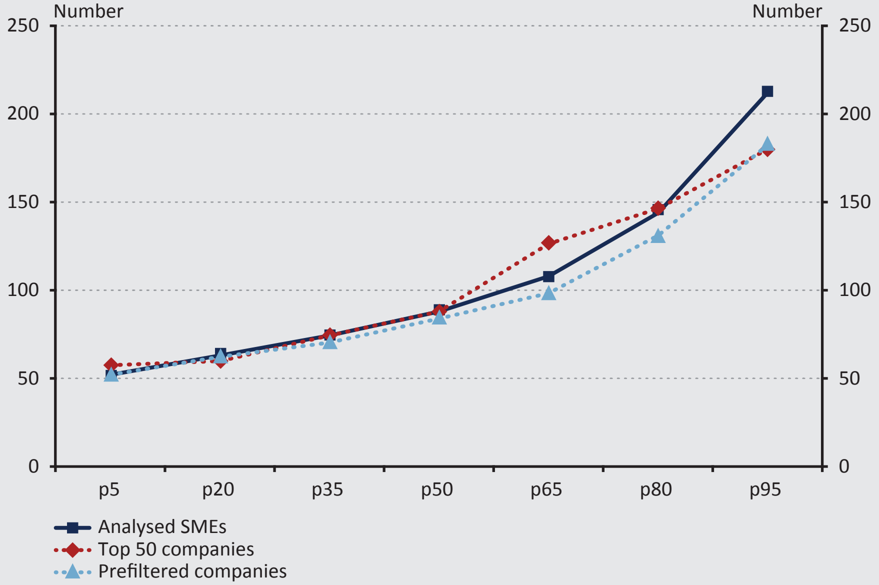
Figure 1
Age distribution at the three groups of companies



Note: The distributions in the figure refer to 2014. In the figure we indicated the percentiles with p. For example, p20 indicates the 20 percentile, which (in the case of the age of the company) shows that 20 per cent of the examined SMEs were founded in 2004 or later (they were at the most 10 years old in 2014).
Source: MNB, own calculations of the authors

Based on the number of employees, the majority of the companies is relatively small and in this respect there is no significant difference between the groups of pre-filtered companies, top 50 companies and all of the analysed SMEs. In all three groups, the number of employees is less than 100 in the case of approximately more than half of the enterprises. Naturally, this may also follow from the fact that the rapid growth we required can be achieved more easily in the case of smaller size. However, in terms of going public it is important that company size should be appropriate not only in terms of accounting. For example, it is an important question whether the staff is sufficient to fulfil the stock exchange requirements (*Figure 2*).

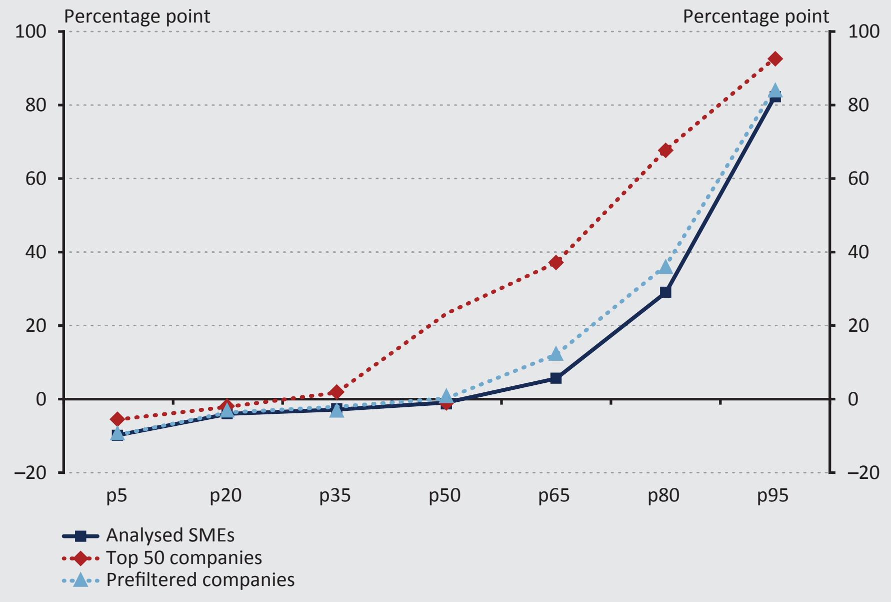
Figure 2
Distribution of staff number at the three groups of companies



Note: The distributions in the figure refer to 2014. in the figure we indicated the percentiles with p. For interpretation of the percentiles, see the note for Figure 1.
Source: MNB, own calculations of the authors

After analysing the basic properties, we examined in detail how the performance of the three groups of enterprises differed from each other. To do this, we typically examined the past three year average of the given indicator for the period between 2012 and 2014. First, we wanted to know what the ratio of exports was within total sales revenue at companies. Although this indicator does not provide direct information about the performance of the company, it still characterises it well. According to the observation of *Halpern and Muraközy* (*2010*), innovative enterprises are more productive, they export more and with higher probability than their non-innovative counterparts. Innovative companies reach more markets with their products and they can also export more, and thus the ratio of exports may point to the productivity of the given company and the role of innovation at the company. As we wrote earlier, the stock exchange as a financing form must support these types of enterprises, since in many cases they have more difficulty in accessing bank funds. In accordance with our expectations, the relative role of exports is significantly higher in the case of the pre-filtered companies and the top 50 companies than within the group of analysed SMEs (*Figure 3*). This is especially true for the top 50 companies, since at approximately 80 per cent of the them the role of exports is higher than in the other participants of the industry. Consequently, the scoring outlined above does indeed support the selection of companies for which going public may be useful.

Figure 3
Ratio of exports per sales revenue compared to the industry average at the three groups of companies
(average of 2012-2014)

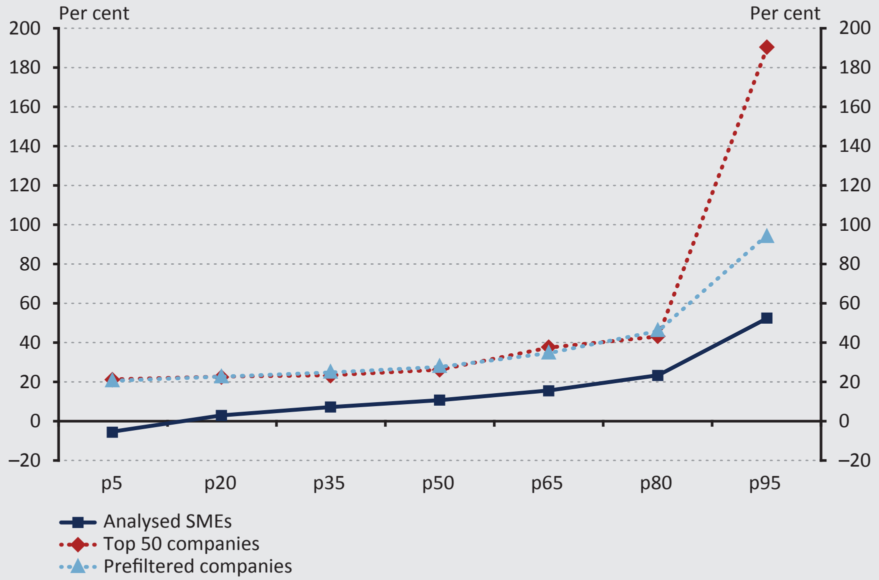


Note: In the figure we indicated the percentiles with p. For interpretation of the percentiles, see the note for Figure 1.
Source: MNB, own calculations of the authors

Of the indicators measuring corporate performance, we already took into account the annual average growth of sales revenue among the filtering criteria, since we determined a minimum value of 20 per cent in a 3-year average according to OECD's definition of gazelles. Accordingly, in the lower half of the distribution we expected better performance in the case of both the pre-filtered company group and the top

50 companies than the group of all analysed SMEs. It is important to emphasise, however, that there was a significant difference in the case of the entire distribution (*Figure 4*). The companies we selected performed significantly better than the entire group of analysed SMEs even at the 95th percentile, which shows that the set of companies that can produce fast growth permanently is very small.

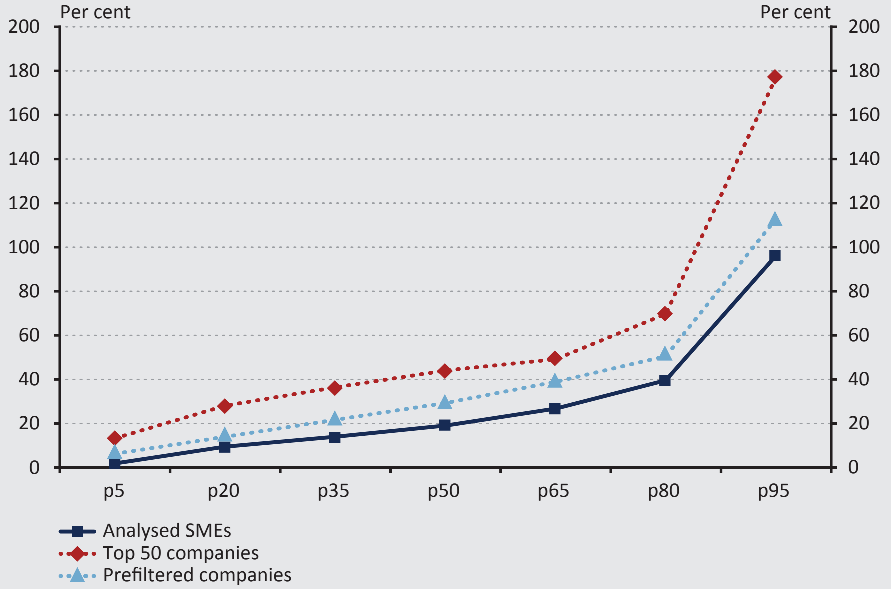
Figure 4
Distribution of annual growth rate of sales revenue at the three groups of companies
(average of 2012-2014)



Note: In the figure we indicated the percentiles with p. For interpretation of the percentiles, see the note to Figure 1.
Source: MNB, own calculations of the authors

ROIC (Return on invested capital) is very important from investors' perspective. It can be seen that while the group of 331 companies, created with the pre-filtering, exceeds the group of the analysed SMEs only slightly, the difference is significant in the case of the top 50 companies (*Figure 5*). This confirms that the filtering we applied, although it narrows the SMEs in the appropriate direction, is not sufficient for selecting the companies potentially entering the stock market. For this purpose, it is important to compile a ranking, as a result of which we receive groups of companies performing even better.

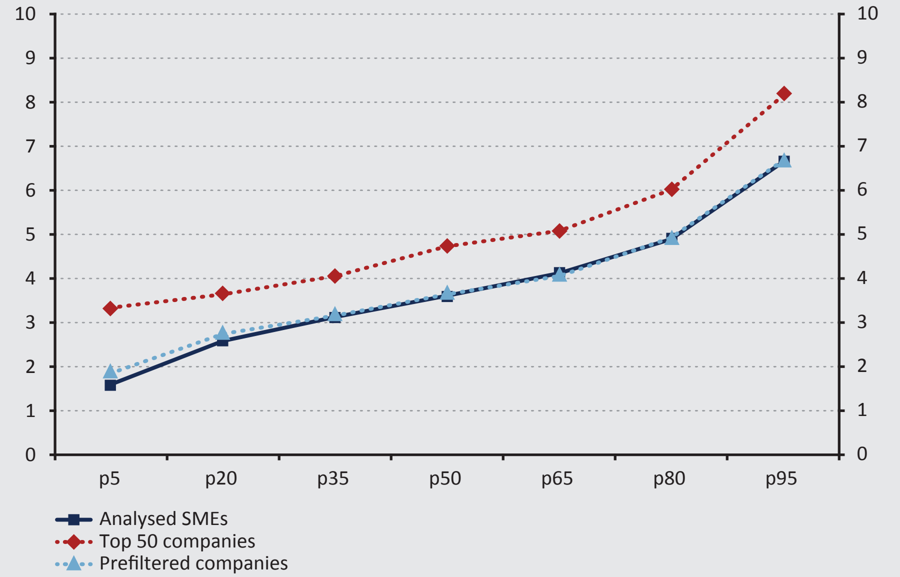
Figure 5
Distribution of return on invested capital (ROIC) at the three groups of companies



Note: The distributions in the figure refer to 2014. In the figure we indicated the percentiles with p. For interpretation of the percentiles, see the note to Figure 1.
Source: MNB, own calculations of the authors

Finally, we examined the extent to which the groups of companies comply with risk filtering. For the top 50 companies, we set the condition that the risk indicator must reach the safe level (i.e. value 3) in all of the last 3 years. According to the data, in the case of these companies reaching the safe level is general, and almost all of them reach the value of 3 continuously in the three-year period. In terms of the distribution of the Altman Z-score, the pre-filtered companies only slightly differ from the entire group of the analysed SMEs, and 35 per cent of the companies of these groups of companies do not fulfil the requirement of reaching 3 for the risk indicator (*Figure 6*). All of this underlines the need for risk filtering.

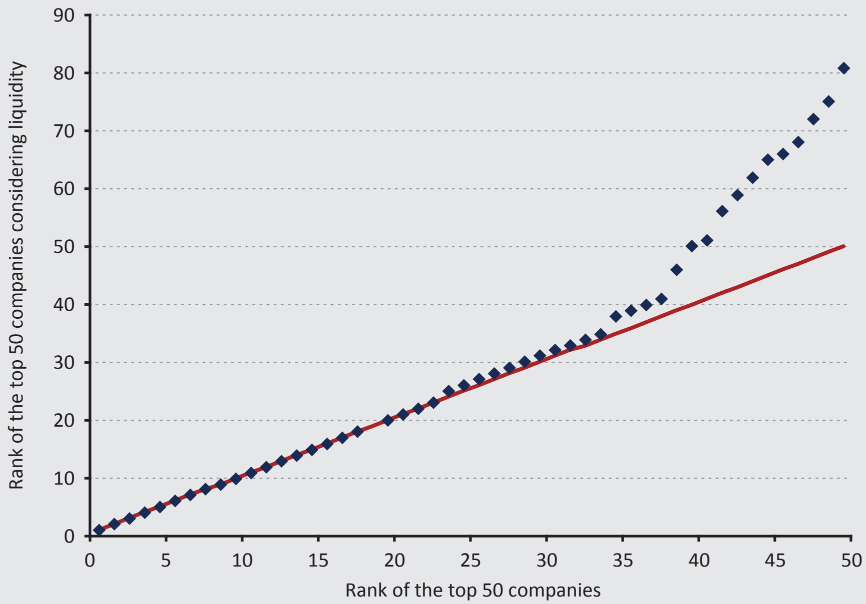
Figure 6
Distribution of the Altman Z-score at the three groups of companies
(average of 2012-2014)



Note: in the figure we indicated the percentiles with p. For interpretation of the percentiles, see the note to Figure 1.
Source: MNB, own calculations of the authors

According to the above, we also looked at how much the ranking would change if we used liquidity indicators as well. The interpretation of the liquidity situation is not unambiguous in terms of the stock exchange, especially because we only see a year-end data point. Therefore, we decided to use it only as an additional consideration. It can be seen that liquidity does not influence our results significantly (*Figure 7*). The position of the best 35 companies does not change if we take into account the liquidity situation as well, and, all in all, 40 of the top 50 companies are identical in the case of the two methods. Moreover, all of the 10 companies that drop out of the top 50 still remain in the first 90. Thus, taking into account liquidity is not necessary to receive appropriate results.

Figure 7
The ranking of companies with and without the consideration of liquidity



Source: MNB, own calculations of the authors

4.2. Comparison of the top 50 companies and the companies listed on the stock exchange

Up to now, we have presented how the simple scoring applied by us may assist the stock exchange in the selection of potential entrants. We could see that, by applying the method, we indeed received companies that exceed the performance of the analysed SMEs in terms of all the examined criteria (for more detail see the tables in the *Annex*).[3] However, in terms of the stock exchange, what is important is not only that it can work together with companies producing good performance compared with the other participants, but also that these should compete with the companies already listed on the stock exchange. This is important for several reasons:

- Involving new participants is important not only to achieve that special companies can thus receive appropriate financing, but also in order to present new success stories. This is necessary to increase demand for corporate securities.

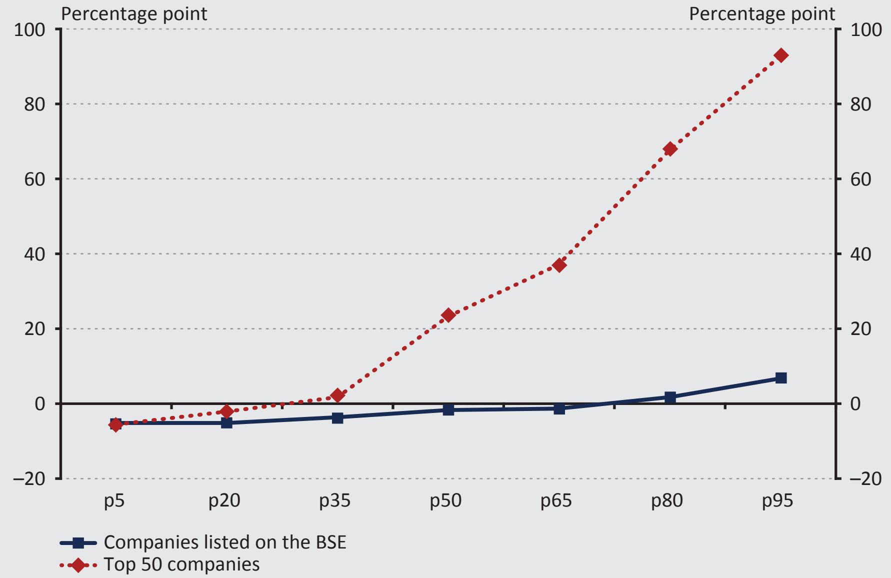
[3] In order to obtain a picture of whether the relatively better performance of the top 50 companies received with the ranking compared to the group of the analysed SMEs can be considered to be persistent, we examined the distribution of a couple of performance indicators related to these groups of companies for the period between 2009–2011 as well (*Figures 11-13 in the Annex*). Based on the growth rate of sales income, the return on invested capital, and the Altman Z-score, it can be stated that the performance of the top 50 companies in 2014 exceeded significantly the performance of the group of the analysed SMEs not only between 2012-2014, but in the 3 years prior to that as well.

- There are several companies listed on the stock exchange – currently as well – that have not performed very well in recent years. It would be important to be able to avoid such cases in the future.

Based on our data, it can be seen that in terms of age the selected companies exceed the companies in the T and standard categories of the BSE. Whereas the median value is about 8 years in the latter case, it is almost 20 years in the former case.

As shown earlier, the ratio of exports per sales revenue characterises corporate performance very well. The top 50 companies are significantly better in this respect as well. The difference from the industry average is strongly positive for almost all of the top 50 companies, whereas in the case of listed companies it is mostly around zero, but mainly in the negative range (*Figure 8*).

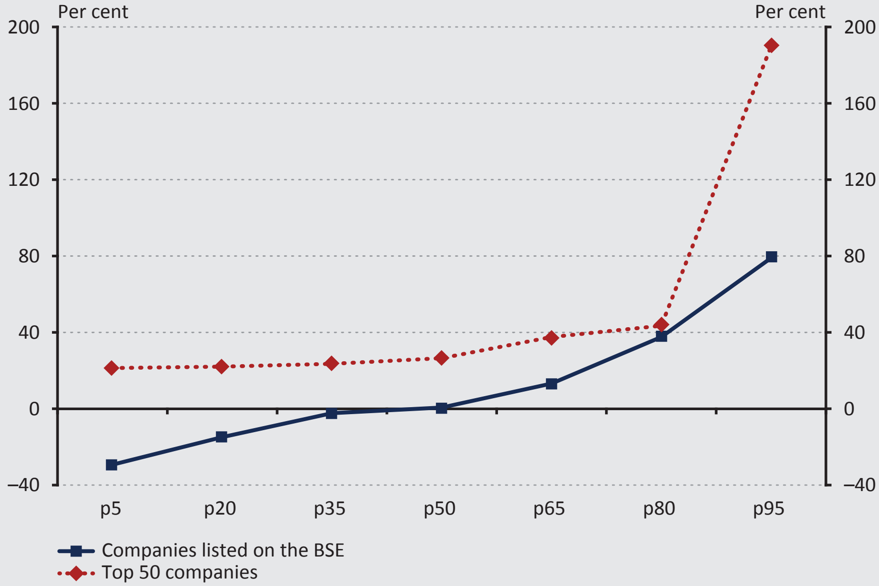
Figure 8
Ratio of exports per sales revenue compared to the industry average at the two groups of companies
(average of 2012–2014)



Note: In the figure we indicated the percentiles with p. For interpretation of the percentiles, see the note to Figure 1. The analysis refers to the companies currently appearing in the T and standard categories of the BSE.
Source: MNB, own calculations of the authors

The growth rate achieved in recent years also shows that those companies that were ranked the best are stronger (*Figure 9*). The sales revenue of listed companies decreased slightly in several cases in recent years, whereas in the case of the top 50 companies we still see dynamic growth. And fast growth is necessary for successful performance on the stock exchange, especially in the case of SMEs.

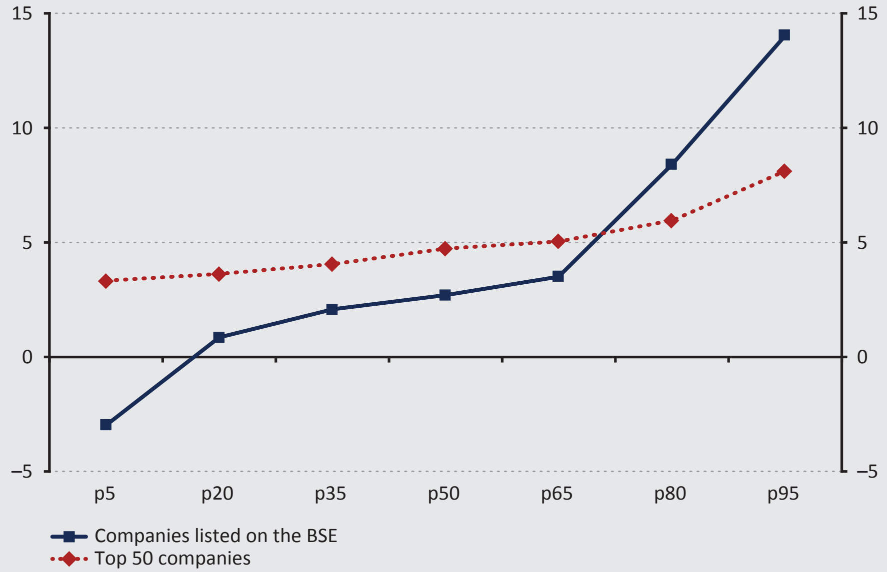
Figure 9
Distribution of annual growth rate of sales revenue at the two groups of companies
(average of 2012–2014)



Note: In the figure we indicated the percentiles with p. For interpretation of the percentiles, see the note to Figure 1. The analysis refers to the companies currently appearing in the T and standard categories of the BSE.
Source: MNB, own calculations of the authors

The Altman Z-score, which is used as a risk indicator, is mostly in harmony with this. The group of the top 50 companies shows worse results than the listed companies only at the upper edge of the distribution (*Figure 10*). That is, some listed companies have outstanding performance, but all in all it cannot be said that the group of companies listed on the BSE exceeded the group of top 50 companies that were selected according to our scoring methodology.

Figure 10
Distribution of the Altman Z-score at the two groups of companies
(average of 2012–2014)



Note: In the figure we indicated the percentiles with p. For interpretation of the percentiles, see the note to Figure 1. The analysis refers to the companies currently appearing in the T and standard categories of the BSE.
Source: MNB, own calculations of the authors

5. Conclusion

After acquiring a majority stake in the Budapest Stock Exchange, the central bank of Hungary emphasised that the long-term development of the capital market is necessary and thus formulated a new strategy for the years ahead. This step is justified also because the programmes of the MNB supporting lending will be phased out gradually in 2016, and EU funds will also decrease significantly in the next budget period. In addition to the Hungarian outlooks, the literature also increasingly emphasises the necessity of developing the stock exchange. For example, the research of *Cecchetti and Kharroubi* (*2015*) showed that the really innovative and productive companies often do not receive bank financing, because they cannot provide tangible asset collateral for loans.

One direction of developing the stock exchange is that BSE would create a separate platform for SMEs, thus offering this segment the opportunity to access capital market financing. In this study, we examined whether there are indeed companies in this segment that are suitable for listing on the stock exchange. We developed a simple scoring method, which consists of a quantitative pre-filtering on the one hand, and a ranking on the other hand. With this, we received a group of 50 companies which seems to be better in terms of its economic indicators than the enterprises currently appearing in the T and standard categories of the BSE. On the one hand, we thus presented a quantitative method for finding the companies that are worth taking into account in connection with a possible entry to the stock exchange. On the other hand, we demonstrated that there may be companies in the SME segment for which it may be worthwhile to go public.

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Annex

Table 2
Descriptive statistics of the examined SMEs

Variable	Unit	p5	p50	p95	Average	St. Deviation
Age	year	4	18	24	16	7
Number of employees	number	52	88	212	104	49
Sales income	HUF Bn	1.1	2.2	8.8	3.2	2.6
Total assets	HUF Bn	0.4	1.7	6.8	2.4	2.1
Sales income per capita	HUF Bn	10.6	23.5	91.4	33.3	28.2
Return on invested capital (ROIC)	Per cent	1.8	19.3	95.6	25.6	136.4
Debt to assets ratio	Per cent	22.5	58.7	93.9	58.4	22.1
Debt to equity ratio		0.2	1.4	11.3	-0.1	100.8
Liquidity ratio		0.6	1.5	5.9	2.2	2.4
AltmanZ score		1.6	3.6	7.0	3.9	2.1
AltmanZ score - 3 year average		1.6	3.6	6.7	3.8	1.8
Number of employees - 3 year average growth rate	Per cent	-8.5	2.9	37.4	8.8	30.5
Sales income - 3 year average growth rate	Per cent	-5.2	11.1	52.1	17.1	31.3
Total assets - 3 year average growth rate	Per cent	-7.6	8.7	41.5	12.1	18.1
Average wage - difference from the industrial average (3 year average)	HUF Million	-0.1	1.4	5.5	1.8	2.1
Ratio of fixed assets - difference from the industrial average (3 year average)	Per cent	-18.6	9.7	44.2	10.8	20.0
Export sales income - difference from the industrial average (3 year average)	Per cent	-9.7	-1.0	82.5	12.7	27.4

Note: In the header of the table we indicated the percentiles with p. For interpretation of the percentiles, see the note to Figure 1 in the main text.
Source: MNB, own calculations of the authors

Table 3
Descriptive statistics of the pre-filtered companies

Variable	Unit	p5	p50	p95	Average	St. Deviation
Age	year	9	18	24	18	5
Number of employees	number	52	84	182	97	44
Sales income	HUF Bn	1.2	2.4	10.3	3.6	3.0
Total assets	HUF Bn	0.5	1.8	7.2	2.4	2.2
Sales income per capita	HUF Bn	12.2	29.2	105.1	39.9	33.2
Return on invested capital (ROIC)	Per cent	6.0	28.9	112.4	39.3	47.1
Debt to assets ratio	Per cent	26.8	61.1	88.1	59.7	19.1
Debt to equity ratio		0.4	1.6	7.4	2.4	2.7
Liquidity ratio		0.8	1.5	4.3	1.9	1.5
AltmanZ score		2.0	3.7	6.7	4.1	3.0
AltmanZ score - 3 year average		1.8	3.6	6.7	4.0	2.3
Number of employees - 3 year average growth rate	Per cent	-2.5	10.3	61.2	18.6	39.2
Sales income - 3 year average growth rate	Per cent	20.4	28.0	94.9	41.0	39.2
Total assets - 3 year average growth rate	Per cent	1.0	19.5	63.6	24.4	22.6
Average wage - difference from the industrial average (3 year average)	HUF Million	-0.2	1.4	5.5	1.8	1.7
Ratio of fixed assets - difference from the industrial average (3 year average)	Per cent	-19.1	6.7	41.6	8.4	19.6
Export sales income - difference from the industrial average (3 year average)	Per cent	-9.6	0.4	84.6	15.1	28.6

Note: In the header of the table we indicated the percentiles with p. For interpretation of the percentiles, see the note to Figure 1 in the main text.
Source: MNB, own calculations of the authors

Table 4
Descriptive statistics of the best 50 companies

Variable	Unit	p5	p50	p95	Average	St. Deviation
Age	year	9	18	24	17	5
Number of employees	number	57	88	180	102	42
Sales income	HUF Bn	1.5	2.7	10.3	3.7	2.8
Total assets	HUF Bn	0.7	1.8	8.1	2.8	2.5
Sales income per capita	HUF Bn	14.4	30.4	91.2	36.3	23.1
Return on invested capital (ROIC)	Per cent	13.3	43.9	176.4	61.6	63.7
Debt to assets ratio	Per cent	15.1	41.8	73.1	42.0	16.2
Debt to equity ratio		0.2	0.7	2.7	0.9	0.8
Liquidity ratio		0.9	2.8	6.8	3.0	1.8
AltmanZ score		3.5	4.7	7.8	5.1	1.8
AltmanZ score - 3 year average		3.3	4.7	8.1	4.9	1.4
Number of employees - 3 year average growth rate	Per cent	1.6	11.4	72.4	28.2	71.4
Sales income - 3 year average growth rate	Per cent	21.1	26.3	189.8	44.1	44.4
Total assets - 3 year average growth rate	Per cent	5.1	24.5	98.0	30.4	26.5
Average wage - difference from the industrial average (3 year average)	HUF Million	0.1	2.2	6.1	2.5	1.9
Ratio of fixed assets - difference from the industrial average (3 year average)	Per cent	-19.7	-1.8	41.6	4.7	20.5
Export sales income - difference from the industrial average (3 year average)	Per cent	-5.6	23.1	93.0	29.8	32.8

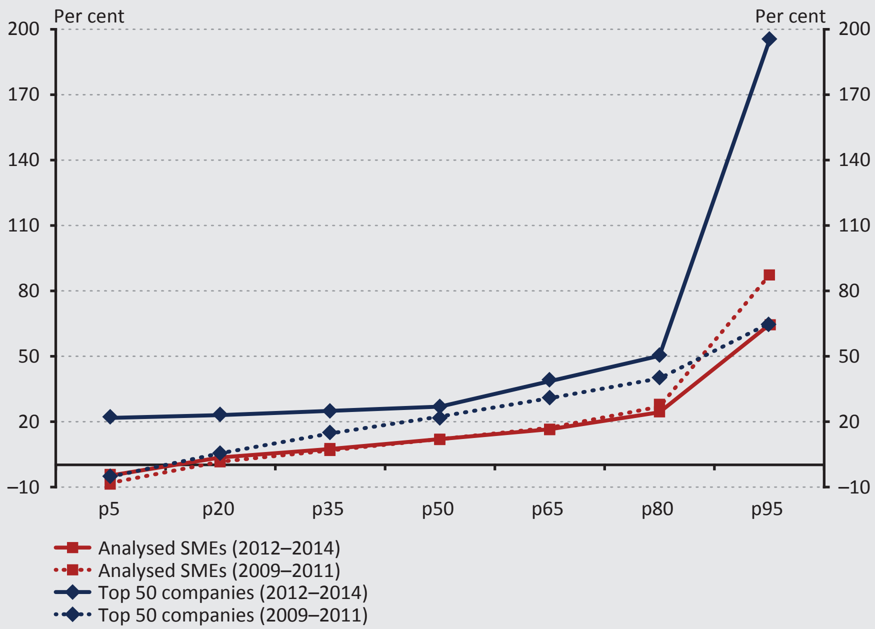
Note: In the header of the table we indicated the percentiles with p. For interpretation of the percentiles, see the note to Figure 1 in the main text.
Source: MNB, own calculations of the authors

Table 5
Descriptive statistics of the companies listed on the BSE

Variable	Unit	p5	p50	p95	Average	St. Deviation
Age	year	2	8	27	13	9
Number of employees	number	1	18	90	35	64
Sales income	HUF Bn	0.0	0.2	69.8	9.2	36.7
Total assets	HUF Bn	0.2	1.6	109.7	15.4	51.3
Sales income per capita	HUF Bn	0.0	24.5	591.8	79.7	183.1
Return on invested capital (ROIC)	Per cent	-40.5	0.2	324.1	25.7	124.5
Debt to assets ratio	Per cent	10.6	33.2	96.1	44.1	29.4
Debt to equity ratio		0.1	0.5	24.6	5.7	16.9
Liquidity ratio		0.4	2.0	20.2	6.8	17.1
AltmanZ score		-2.0	2.5	5.9	2.2	2.2
AltmanZ score - 3 year average		-3.0	2.7	14.0	5.3	12.1
Number of employees - 3 year average growth rate	Per cent	-25.0	0.0	57.7	5.3	31.2
Sales income - 3 year average growth rate	Per cent	-29.2	0.8	79.1	183.3	841.6
Total assets - 3 year average growth rate	Per cent	-20.9	-0.6	106.6	55.7	257.6
Average wage - difference from the industrial average (3 year average)	HUF Million	-0.4	2.6	17.4	4.7	6.4
Ratio of fixed assets - difference from the industrial average (3 year average)	Per cent	-33.7	-12.4	24.5	-10.7	16.9
Export sales income - difference from the industrial average (3 year average)	Per cent	-5.1	-1.8	6.8	-1.2	4.6

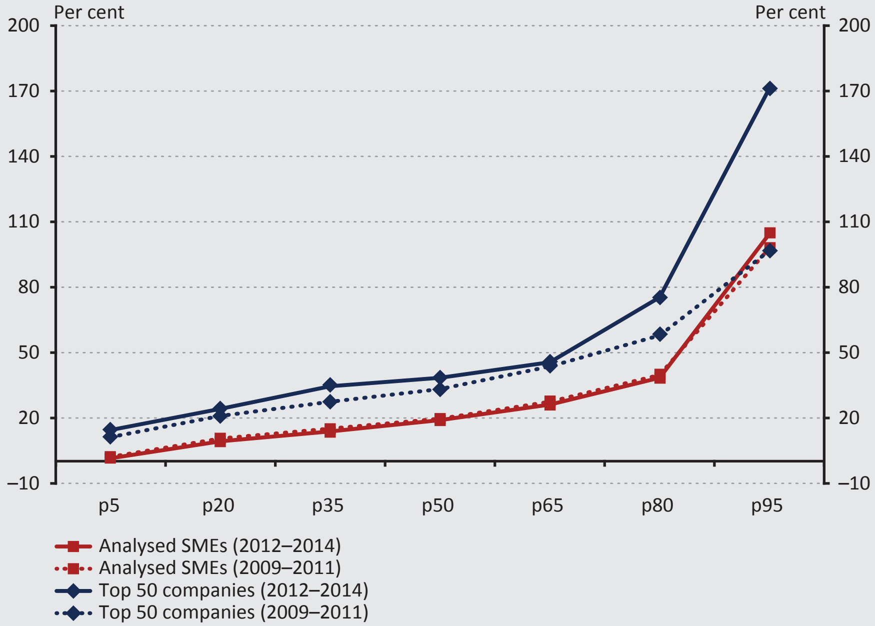
Note: In the header of the table we indicated the percentiles with p. For interpretation of the percentiles, see the note to Figure 1 in the main text. The values of the table refer to the companies currently appearing in the T and standard categories of the BSE.
Source: MNB, own calculations of the authors

Figure 11
Distribution of annual growth rate of sales revenue at the two groups of companies
(average of 2009–2011 and 2012–2014)



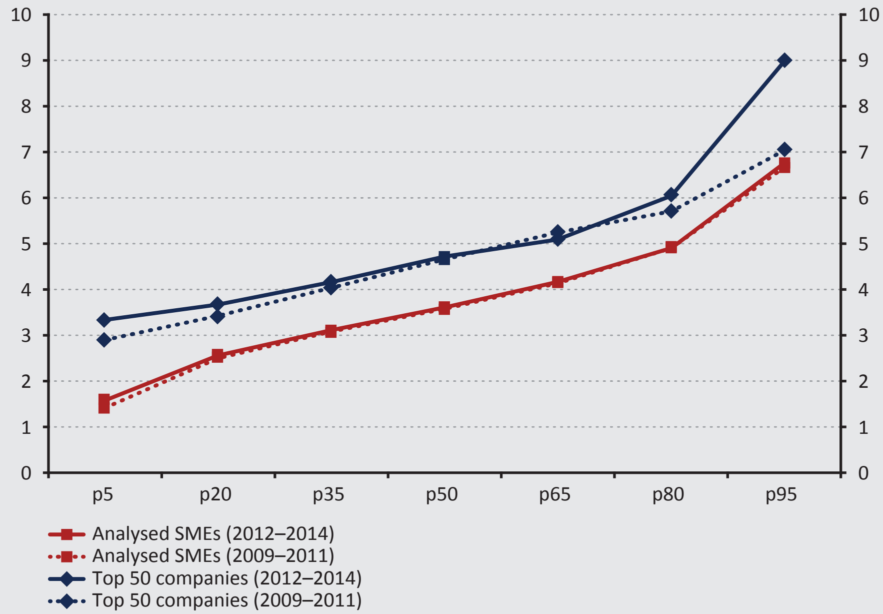
Note: In the figure we indicated the percentiles with p. For interpretation of the percentiles, see the note to Figure 1 in the main text.
Source: MNB, own calculations of the authors

Figure 12
Distribution of return on invested capital (ROIC) at the two groups of companies
(average of 2009–2011 and 2012–2014)



Note: In the figure we indicated the percentiles with p. For interpretation of the percentiles, see the note to Figure 1 in the main text.
Source: MNB, own calculations of the authors

Figure 13
Distribution of the Altman Z-score at the two groups of companies
(average of 2009–2011 and 2012–2014)



Note: In the figure we indicated the percentiles with p. For interpretation of the percentiles, see the note to Figure 1 in the main text.
Source: MNB, own calculations of the authors

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The Inequality of Globalisation*

Júlia Gutpintér

François Bourguignon:
The Globalization of Inequality
(transl. by Thomas Scott-Railton)
Princeton and Oxford: Princeton University Press, 2015, p. 210
ISBN: 978-0-691-16052-8

Over the past few years, the topic of inequalities has shifted from the periphery of economics to the mainstream of scientific debates and common discussion, and as a result, a number of remarkable works have been produced on this subject. These include the book discussed here, written by François Bourguignon, the well-known French researcher of inequalities and former Chief Economist and Senior Vice President of the World Bank.

Bourguignon's book is entitled the "*The Globalization of Inequality*", but its contents would be better reflected by the title "*The Inequality of Globalization*", as the key message of the book, put simply, is that the increase in inequalities may be directly or indirectly traced back to globalisation and its unequal impacts. This is a paradox, however, since the decline in inequalities is also due to globalisation. This apparent contradiction may be resolved by the different dimensions of – the already fluid definition of – inequality. Following a dramatic increase for two centuries, in the past approximately three decades, inequalities between countries (and at the level of individuals, measured globally) have declined, owing to the rapid and steady growth of emerging countries, while income inequalities in most developed countries have risen. The novelty of this book is that it not only describes these two different approaches or processes, but tries to find a connection between them, and identifies their common point in globalisation. All of this is achieved with a strong focus, and in a way that is also comprehensible to non-professional audiences. The book does not neglect one of the key basic elements of the works discussing the subject, namely a meticulous distinction and explanation of the various interpretations and dimensions of inequality, and a detailed description of measurement methods and their limitations.

* The views expressed in this paper are those of the author(s) and do not necessarily reflect the offical view of the Magyar Nemzeti Bank.

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In Bourguignon's view, the most important exogenous process that influences the evolution of inequalities is globalisation. With the opening-up of the world economy, a vast amount of cheap labour appeared on the global market. Its utilisation was facilitated by the spread of info-communication technologies (ICT), as well as the decline in transportation costs. The reallocation of production resulted in modernisation and restructuring, as well as significant, steady growth in the economies of a number of emerging countries, and the positive effects of this phenomenon have also been reflected in income distribution. Over the past twenty years, global income inequalities expressed using the Gini coefficient fell almost to the same extent as they had increased after 1900, for approx. 90 years. At the same time, on the side of developed countries, this reallocation manifested itself in lower wages, first for unskilled workers and later for moderately skilled workers, and in the increased employment uncertainty. In addition, globalisation has appreciated capital, and information-communication technologies have boosted the importance of a highly skilled workforce. As a consequence of the latter, the so-called superstar effect spread to such ordinary areas such as the financial sector and the ICT sector, and, as a result, income inequalities started to rise within developed countries. Over the past 20 years, the Gini coefficient of disposable income per capita[1] increased at least by 2 percentage points in more than three quarters of the OECD countries, and this trend even affected the Scandinavian countries which are famous for their equality. Among the developed countries, income inequalities increased the most in the USA; by 2008, the share of the top 10 per cent of the income distribution from the total market (before tax) income of households exceeded the approximately 40 per cent level which was valid one century earlier, while this value was around 30 per cent between WWII and in the 1970s. Apart from developed and emerging countries, Bourguignon also identifies the "losers of globalisation", who were unable to successfully join the globalisation because of their political, institutional instability and social and economic underdevelopment. In the case of an unchanged scenario, these lagging countries will contribute to the rise in global inequalities.

However, the specific impacts of external factors on inequalities are not uniform and are also determined by the economic policy and economic regulations which are applied, as endogenous factors. The fact that these endogenous factors facilitated the rise in inequalities within countries may be traced back to the wave of neoliberal reforms that started from Anglo-Saxon countries in 1970s and then spread globally. The key elements were the reduction in the highest marginal income tax rates, the increase in consumption taxes, the more favourable distinction of capital incomes from a taxation point of view, and the deregulation of financial and labour markets. It is probably not an accident that the French author puts the greatest emphasis on the impacts of the labour market deregulation in the broad sense. This trend

[1] Calculated in adult equivalent.

is clear; according to the OECD survey, over the past 20 years, 20 member states relaxed regulations on employment. Certain elements of deregulation (e.g. reducing the importance of unions and centralised wage negotiations, looser regulation of the minimum wage and unemployment benefits, etc.) were proven to contribute to the increase in wage inequality, and thus to the inequality of incomes. There is no doubt that in parallel with that, these measures may have also increased the number of jobs, but this was achieved only with increased employment uncertainty.

The double-edged nature of labour market measures highlights the trade-off between efficiency and equity, which (also) determines the debates on inequalities and their treatment. In this respect, the author emphasises that measures to lower inequalities may really reduce – to use a popular metaphor – the size of the cake, but beyond a certain point, the inequalities themselves also reduce efficiency, mainly through the market errors they cause and their impact on social and political stability.

Therefore, the development of inequalities is influenced by both exogenous and endogenous factors. In Bourguignon's view, however, the endogenous factors are also determined by globalisation, and it has an indirect impact on the evolution of inequalities through them. Globalisation increased competition in every respect, and thus intensified technological innovation, forced financial liberalisation and encouraged the mobility of capital. In order to maintain their competitiveness, countries have been underbidding each other to reduce taxes and loosen the regulations, and the majority of these steps point to the direction of rising income inequalities.

In the last chapter, the author makes recommendations to mitigate the unequal impacts of globalisation, and to restrain rising income inequalities. The author highlights those countries which can be referred to as the "losers of globalisation". Improvement of the socio-economic situation in these countries with the continued convergence of emerging countries may provide additional ammunition to further reduce global inequalities, and under the present conditions, perhaps these are the measures that are the easiest to implement. The increased volume and efficiency of development aid, the liberalisation of bilateral trade relations and the provision of access to the markets of developed countries could trigger the restructuring and the growth of the economies of these countries, which – with proper regulations – could also have a favourable impact on income distribution. Rising inequalities within countries can be restrained by measures which were previously reformed in a neoliberal approach, and these reforms have basically contributed to the rise in inequalities. Carefully considered modification of taxation regulations and those markets which significantly affect income distribution could be the most important ex-post measures. It is important to mention that these measures could and should take equity and efficiency into consideration at the same time. Education, training and the reduction of discrimination (in any form) contribute to mitigating inequalities in an ex-ante manner. The author specifically mentioned emerging countries which are contributing to the mitigation of global inequalities, while they are struggling with the problem of rising internal inequalities as well. These countries, led by China, have significant room for manoeuvre to reduce inequalities by way of regulations.

The proposed solutions, although they cannot be called simplifying at all, unfortunately also cannot be called overly convincing or novel. However, the author is also aware of this. There is no such thing as a universal “silver bullet”, and until the problem is treated at its roots, i.e. the inequalities of globalisation, it is necessary to apply solutions that offer a treatment of the symptoms only, and that are mostly well-known but limited in time and space. In addition, it is not a question of whether or not these tools need to be applied, since globalisation, as the key driving force behind the rise of inequalities, will not stop; the appreciation of capital and skilled workforce, the depreciation of unskilled or moderately skilled workforce and the increasing employment uncertainty remain the factors that determine income distribution. Inequalities beyond a certain point – although their specific impacts are difficult to quantify – definitely have negative impacts on society and the economy, and these potential harmful consequences and the precautions associated with them cannot be emphasised enough even in the opinion of Bourguignon, who follows an objective and calm approach all the way through.

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Europe in trouble – Does the European Union promote or hinder the success of Europe today?*

Attila Korencsi

Roger Bootle:
The Trouble with Europe – Why the EU Isn't Working,
How It Can Be Reformed, What Could Take Its Place
Nicholas Brealey Publishing, London, Boston, 2014, p. 216
ISBN: 978-1-85788-615-3

Roger Bootle, one of the best-known economists of the City of London, winner of the Wolfson Economics Prize, and a weekly columnist for the Daily Telegraph, explores with frankness and without regard for taboos the economic and political factors that he thinks are causing the current crisis of the European Union. It is the conviction of the author that Europe today is in trouble: it shows several symptoms of an operating crisis, its competitiveness and economic results are lagging behind the objectives determined by political decision-makers, it has serious social problems, and there are significant debates about the nature of the therapy as well. According to Bootle, there can be no doubt that Europeans want a successful, strong Europe, and this is already a commonplace at the level of declarations. However, he thinks that currently there are very few guarantees for how and with what tools the objectives serving the interests of the European citizens can be achieved.

The European Union has reached a point of decision. Its entire operation until now and the successes of the early decades point in the direction of a complete political union as the almost sole, alleged possibility for a next step, which would finally result in a United States of Europe. This is the direction that can be assumed the most in the euro area, which forms a tight economic and financial community, in which budgetary and political union urgently need to be implemented. We feel that it is just around the corner, but in reality the distance is further. According to the public opinion of today, "more Europe" means deeper and wider integration. It assumes that the current direction and content of the operation of the EU is essentially correct, that this process merely has to be taken further horizontally and

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vertically, that it also has to be extended into areas not yet affected by the common jurisdiction and has to be made more profound in the existing areas of integration. According to the assessment of the author, however, the European Union can today be considered as an institution which operates defectively, and even more so if we expect from it solutions to future challenges. Fundamental reforms are necessary or disintegration will follow; these are the alternatives, according to Bootle.

The dismay after the world wars of the first half of the 20th century, especially after World War II which caused such vast destruction, and the quest for peace led in the direction of creating the European communities. Nothing similar can be allowed to happen again: this was the basic feeling. Rivalry between nations can be solved by co-operation between nations. This was one of, if not the most important motivations of the European Union. Another very strong fibre in this fabric was the fulfilment of a civilian European ethos, capable of implementing solidarity as well, based on the common European ethic that is strong and competitive, in a reconciled and peaceful environment.

Jean Monnet was a federalist. Robert Schuman conceived Europe primarily as a community of values. According to him, Europe could not even be implemented at once, based on a single plan, specific steps are necessary, such as solidarity implemented in the social structure first within nations, then within the member states, for which the common value system is essential. But when we lose our faith in Europe, in the values specifically defining our continent, we then are already on our way to disintegration. The road of European Union is the road of permanent change. During the process of construction which started after World War II, we always had to exercise the necessary deliberation, the ability of correction, and the capability of continuously taking into account these basic values. By contrast, today we experience that Europe has lost its self-identity and questions its basic values; its vision of the future is uncertain, but it is propelled by inertia, without real controlling mechanisms.

Weakening Europe today, paradoxically, occurs with exertion of strengthening. How can Bootle state this? If we assume that everything is in order with the operation of the European Union, we can continue this avenue safely, Europe will be increasingly strong and successful. But if we notice that the current structures no longer ensure efficient operation, the further operation of those in an unchanged form and extending them to other areas, in fact, weakens the common building, and instead of building a robust European house, it will sooner or later collapse because of the further floors built on the weakened foundations.

According to Bootle, there are “faiths” in connection with European Union that are not sufficiently well-founded, which we always refer to, yet we do not pay attention to what we mean by them and to deal with the contents of these. Today union is essentially promoted by faith in five matters: the desire to avoid another war in Europe; the faith that the natural condition of Europe is the union; the concept that size indeed matters in economic and political affairs; the notion that European union is necessary so that it can be a worthy competitor to Asia; and the thought that European integration is somehow inevitable.

The desire for peace recalls the world of Pax Romana, when the original natural condition of Europe was the union of the Roman empire, the period when Europe was actually created, when it integrated Greek philosophy, created Roman law, admitted Christianity: that is to say, it created a European culture. This union was broken apart with the fall of the Roman empire, although it lived on culturally and in its value system. During the time of the Cold War, Europe was divided between the Soviet Union and the US: its eastern half was a Soviet bloc, while its western half was a sphere of influence of America. A united Europe has become a factor to reckon with, forming a counterbalance to the great powers. With the disintegration of the Soviet Union and the weakening of the sole hegemony of the US (despite the fact that it is likely that the US will retain its status of great power in the long term), the fear of Asia or rather taking Asia seriously have been placed on the agenda. A fragmented Europe risks lagging behind compared to the emerging new power centres.

In addition to competitiveness and economic considerations, however, there is another faith less supported by scientific arguments, according to which increasingly deeper and wider integration is the natural way of development. Thus, the European Union starts to show a religious nature, its sacred texts are the Treaties, its patron saints are Monnet and Schuman, and its final goal is the United States of Europe as the source of salvation. This type of faith feeds the European bureaucracy and forms the operating model burdened with a democratic deficit.

The realities show that Europe cannot be considered as a uniform area and community – in the social, economic, cultural or legal sense – that could be without the possibility of national clout even in the medium term. This European interest prevails via the national filter also in the case of the bodies qualified for representing primarily European interests, and this method does not result in significant conflicts if there is a common European value system that represents a common foundation for all the member states, and the European Union also remains along the competencies that are necessary and sufficient according to the principle of subsidiarity so that they can build a successful and strong Europe. Not despite the member states and not by overshadowing them, but instead by retaining diversity, yet along a value system, manifesting a united Europe in the global space.

The combination of economy, politics and culture produces Europe. The successes stemmed from past performance, while the present and the future are full of challenges, since the operation of the European Union today is characterised by an identity crisis, badly organised and weak performance of its institutions, overgrown legislation, and at the same time decreasing efficiency, and alienation from the European citizens. The operation of institutions constituting a community may be inclusive or extractive. In the inclusive model, serving the common good is in the centre of operation of the institutional system, whereas the extractive operation is more elite in nature, serving interest groups. The operation of the EU is increasingly similar to the latter.

The first decades of the European integration, from 1957 to 1973, were characterised by strong economic growth: average annual growth within the community was 4.9 per cent, but in the case of countries outside the community and of similar development, growth was also more or less similar to this. Therefore, the cause of growth of the member states was not that they were members of the European Economic Community: the early successes of European co-operation stemmed primarily from the fact that the member states were successful. This may provide a lesson for current operation as well. Today, the decline in Europe is stronger than in other parts of the world, e.g. in Asia. Average growth in Europe fell to 1.6 per cent in the period between 1980 and 2012. The main reasons are that the European member states became increasingly comfortable, economic competition among them became less important, and creativity and mobility declined.

Today, economic and monetary union, the common currency, are in the focus of European integration, and – according to Bootle – it is possible that the euro will be the cause of the collapse of the union as well. It was not inevitable that there should be a common European currency. This type of integration occurred too early and went too far. The euro is used collectively by sovereign states, over whose political decision-making and budget there is no adequate influence. The euro area is like a semi-finished house: there is monetary and economic union, but the financial (budget) and political union are not parts of this. Naturally, we can debate whether complete political and budget union is good or necessary, but if a decision was made about the introduction of the common currency in the framework of the economic and monetary union, all the consequences of this have to be taken into account.

This pessimistic state of affairs does not necessarily mean that there is no chance for positive movement forward. The possibility of growth and development potential is given, we should simply realise it. The balanced representation of interests and finding the necessary compromises would be necessary. The European Union has already created many values and it still currently carries a lot of values that do not justify that its discontinuation should even be discussed. However, more and more people think that it is in need of fundamental reforms.

Will the weakest links break or will the overly strong participants leave? Will a multi-speed Europe evolve, where the member states actually matching each other constitute a closer community? Or will the already excessive community jurisdictions have to be narrowed, only retaining the necessary and sufficient community jurisdictions along the above mentioned principle of subsidiarity? Intervention there should be rational and actually assisting. Or should co-operation be strengthened in precisely the areas of foreign and security policy, still now handled as unfavourable areas, so that Europe can exhibit a uniform face and sufficient force as an important participant that can be taken seriously against the threatening challenges of our age (terrorism, migration crisis). Europe also has to deal with a very serious demographic crisis, and the continent is already in a near-crisis situation in this area, and unfortunately it is not likely that this trend will turn round soon. The agreement of France and Germany was necessary for starting the European project after World War II, and these two large member states have retained their leading role ever since then. The commitment of France and Germany is also essential for the success of the reform amid the current crisis phenomena of Europe. The other member states can, however, be promoters of the success of the European reform process, especially if they are capable of closely co-operating with each other in representing their values formulated jointly.

Studies on the soft budget constraint syndrome, on innovation and great economic systems in honour of János Kornai's birthday*

Ádám Kerényi

Constraints and Driving Forces in Economic Systems:
Studies in Honour of János Kornai
Edited by: Balázs Hámori and Miklós Rosta Cambridge Scholars,
Newcastle-upon-Tyne/UK Cambridge, 2016, 206 pages
ISBN: 978-1-443-88539-3

János Kornai turned 85 on 21 January 2013. On the occasion of his birthday, the Corvinus University of Budapest – with the support of the Central-European University and the Magyar Nemzeti Bank, the central bank of the Republic of Hungary – organised a conference with a full house. The materials of the conference are available on János Kornai's personal website,[1] and not only daily papers, but scientific magazines also published reports on the conference (*Blahó 2013, Farkas 2013, Kerényi 2013, Rosta 2013, Tardos 2014b and Tóth 2013*). As editors,[2] Balázs Hámori and Miklós Rosta selected catch phrases that capture the essence of János Kornai's work[3] – innovation, the soft budget constraint syndrome, paternalism, excessive centralisation – and thus were able to work with a tight logic in formulating the book which contains the studies of various authors representing various disciplines, such as anthropology, economics, political science and history.

The title is quite apt, as it is a fact that driving forces and constraints formulate economic systems by making each other both weaker and stronger at the same time. On behalf of the editors, Balázs Hámori introduces the book and the studies in the preface, at the end of which he makes a witty and respectful reference to the famous saying of Dostoevsky: "we all come out from Gogol's Overcoat". Balázs

* The views expressed in this paper are those of the author(s) and do not necessarily reflect the offical view of the Magyar Nemzeti Bank.

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[1] http://www.kornai-janos.hu/Kornai85.html
[2] The merits of the editors are not diminished by the reference worthy of a footnote that a book of studies had been published before by a prestigious international publisher in honour of János Kornai's birthday (*Maskin-Simonovits 2000*).
[3] János Kornai has been elected to the National Academy of Sciences (NAS) of the United States of America, he is the first Hungarian member of the Economics section, which includes 20 Nobel laureates of its 68 American and foreign members.

Hámori says that all the authors of the book come out from Kornai's Overcoat. The book ends with endorsements: the book is recommended to the readers by respected persons such as Eric Maskin, professor at Harvard and economic Nobel prize winner, Geoffrey M. Hodgson, chief editor of the Journal of Institutional Economics, and Chenggang Xu, professor at Hong Kong University.

The basic question of László Csaba's study entitled *Introduction: Constraints and Driving Forces in Economic Systems* can be summarised by asking what is the current importance of so-called *comparative economics*. The author thinks that since the work of Paul A. Samuelson, at the leading universities of the world and in the academic magazines, the neoclassic synthesis is the most determining, positivist, value-free and strongly technical mainstream paradigm, the research programme and method of which – in simplified terms – focuses on the question how the players of the economy should behave if they were rational. László Csaba describes this phenomenon – referring to Edward Lazear's term – *as economic imperialism*, and thinks that neoclassic quantitative fetishism uses very exact mathematical and microeconomic tools to explain the operation of each area of life, from marriage to discrimination. In the opinion of László Csaba, moderately rational individuals form a complex system, in which, based on incomplete information, decisions are often made in the spirit of peer pressure. In his work, the author refers to the fact that it is wrong to say that history is over, the era of endless happiness has come, it is worth looking at Russia to see that a very special form of capitalism has been realised there after the fall of socialism, and in a political and administrative sense, we cannot talk about democracy in Russia any longer.

The introductory study is followed by the first part of the book, entitled *Innovation as a driving force*. In Karen Eggleston's article entitled Innovation, Shortage and the Economics of Health Care Systems, the author points out that Kornai examined the great, breakthrough and revolutionary innovations of every-day life – almost one hundred cases – and came to the conclusion that revolutionary innovation might be the greatest strength of capitalism (*Kornai 2010*). Eggleston extends this meticulous method to health inventions: in this area, was it in the capitalist or socialist economies that the greatest innovations were made? The result cannot surprise the readers: In Eggleston's views, in socialism, the health sector was not characterised by innovation at all, and socialist economies were not any more advanced than capitalist economies. In addition to health innovations as a feature of capitalism, Eggleston refers to the fact that shortage phenomena that are the inherent features of socialism may emerge in capitalism as well, but as isolated islands only. One of these areas is the health service which keeps producing a deficit even today, and Eggleston has invested a lot of research work to understand this issue, jointly with Kornai (*Eggleston-Kornai 2001*). In this study, Eggleston expresses her view that health-economics is the only area in capitalist countries regarding which it is still debated whether the state or the market could provide more efficient care.

Gérard Roland's study entitled *Individualist and Collectivist Culture and Their Economic Effects* gives a comparative overview on the economic effects of individualist and collectivist cultures. The author agrees with Kornai in the fact that innovation is the biggest strength of capitalism as opposed to the socialist economic system. Roland thinks that looking at it from psychological point of view, the driving force of innovation is found in cultural factors. The author finds that where innovating forces, inventions and innovation play a leading role, there are always individual initiatives in the background, and against this positive feature, in individualist cultures, group interests fade into the background, and individuals find it harder to identify themselves with group interest anyway. In collectivist cultures, society reacts much easier and faster for the sake of group-level issues, but this media suppresses individual initiatives and intensifies conformity.

The essay of Katalin Szabó and Balázs Hámori in the book of studies, titled *Reinventing innovation* presents the effects of the latest innovation trends on economic systems: they point out the so-called *crowdsourcing* – the outsourcing of the activity to a wider community – and the so-called *reverse innovation* – innovation of reversed direction. The authors find that the innovation methods bear the features of the social and economic systems that host them, and therefore it is not possible, or not worth skipping a comparison at the system level. In the summer of 2016, at an event organised for the 70th birthday of Balázs Hámori, Kornai drew the audience's attention to the fact that his work was greatly influenced by the joint studies of Katalin Szabó and Balázs Hámori (e.g. *Hámori-Szabó 2012*).

Péter Mihályi praises Kornai's importance in his study titled *Kornai's Anti-Equilibrium, a harbinger of evolutionary economics*. As to Kornai's book titled Anti-equilibrium (*Kornai 1971*), he himself said in his memoires that "it was not an item in my publication list. This was the most ambitious challenge in my research career" (*Kornai 2007*). In this work, Kornai did not create a new theory, but provided criticism, which was read by many people in the United Kingdom, the Unites States, France and Hungary (*Tardos 2014a*). At the time of writing the book, Kornai thought that the neoclassic way of thinking acted like a straight jacket, and it would require no less than a revolution to get out of that. A later leading economist of the International Monetary Fund (*Blanchard 1999*) said about this work of Kornai that the author had no reason to complain, as several of his scientific ideas (asymmetric information, game theory description of companies, the labour market bargain, the role of the government and the legal system, the non-complete contracts, the non-Walrasian state of the economy) became subjects of thorough research.

Mihályi strengthens this positive approach:[4] he also thinks that the criticism of Anti-equilibrium has already been incorporated into the arguments of various schools that are against the general balance theory, and demand change in paradigm, but this adaptation process is made weaker by the fact that – in the opinion of Mihályi – the impact of Kornai can be detected in an indirect way only, in a number of cases. Anti-equilibrium has proved that the assumptions of the neoclassic school run against reality, and therefore the conclusions drawn from incorrect assumptions may not be correct, either.

When the Collegium Budapest[5] operated, Kornai organised three large international teams to examine the economic, political and sociological problems of transition, they were as follows: From planned economy to market economy 1993/94; Relation of politics and economic policy in post-socialist countries 1997/98; Honour and trust in the light of post-socialist transition 2002/03. Gábor Klaniczay's very detailed study titled *A New Kind of Academic Institution: The Institute for Advanced Study. International and Hungarian Experiences* gives an insight into the operation mechanisms that characterise the so-called *Institute for Advanced Study* (IAS) institutions. IAS's in the world can be found from Princeton to Berlin, form Stanford to Uppsala, from Nantes to Bucharest, and, thanks to Klaniczay, we learn not only the difference between them and universities, research institutes and academies, but he describes why a real IAS institution, the Collegium Budapest was viable only for 19 years in Hungary. Kornai was involved in the organisation of that institution founded in 1992, right up until its termination. Klaniczay and Kornai considered the termination of the Collegium Budapest as their personal tragedies in 2011.

Klaniczay's article is followed by the second part of the study book, entitled *Soft Budget Constraint and Over-Centralization as Constraints*.[6] The first article was written by Dóra Győrffy,[7] who was previously involved in the research activities of Collegium Budapest on a scholarship. Her article is titled: *Soft Budget Constraint and the Greek Tragedy*. Győrffy explored the reasons behind the failures in the management of the Greek financial crisis by using the soft budget constraint syndrome created by Kornai. The author analyses the symptoms of the Greek crisis with scientific care, as well as the many intervention attempts following the outbreak of the crisis, and the soft budget constraint syndrome may be the best description for all that. Kornai first used this good description in 1976, in a series of lectures held in Stockholm, at that time only for the purpose of describing socialist companies, saying they operated irrationally, but in the past decades, this term has

[4] This study was published earlier in Hungary in leading magazines in both Hungarian and English (*Mihályi 2013a and Mihályi 2013b*).
[5] In the memoirs of Kornai, an independent chapter was dedicated to Collegium Budapest (*Kornai 2007*).
[6] Detailed studies were published on the spread and the effects of centralisation and the soft budget constraint syndrome (*Kornai 2013* and *Kornai 2014*).
[7] This study was also published in Hungarian (*Győrffy 2013*).

taken on a life of its own and has gone far. The most important common feature of the various forms of the soft budget constraint syndrome is that it influences the behaviour of an organisation if it knows that it will be saved in the case of a serious financial problem. By using the soft budget constraint syndrome, Győrffy shows what was going on in the background of the motivations of the key players in the events, the institutions of the European Union, the international markets, the Greek State, tax-paying Greek companies and households, as they were sure that the institutions of the international market and the Troika would not let them go bankrupt. One of the conclusions the readers can draw from the study is that if the budget constraint had been harder, the Greek crisis management had not failed, and the extent of downturn was only increased by the fact – even with the best intentions – that the trouble was concealed because instead of constraints that are not popular on the short term, the Greek, European and American leaders wished to solve the crisis by providing additional funds, and the soft budget constraint conserved a bad economic structure. As opposed to this practice, the hardening of the soft budget constraint – not as a magical tool that cures everything – would have encouraged Greek structural reforms at the international level. Nowadays, many important economists think that this crisis management was incorrect, but an extreme hardening of the budget constraint may also not have been a solution to the Greek crisis.

In András Simonovits's study entitled *Paternalism in Pension Systems*, the features of the socially optimal paternalist transfer system are examined, and the author postulates that a pension is a compromise between autonomy and paternalism.[8] Kornai rejects both individual and state paternalism, which reduces autonomy and once said the following about the theoretical background of this position: "*to me, autonomy itself has a very high value. Even if fifteen local governments out of one hundred make wrong decisions – at least all the one hundred did some thinking about it. They act in awareness of their responsibility, right there, on the site. There are the local administrative experts, there are the teachers, there are the parents themselves, the pupils*" (*Friderikusz 2013*). In the study, Simonovits presents some special transfer (tax and pension) models, in these models, individuals may optimise their position in various ways: they participate in a mandatory pension system, reduce their labour offer and hide some of their earning. The common frame is the static two-generation model, in which individuals work in the first phase of their adult lifecycle, and they are retired in the second phase. The government operates a linear transfer system that is well-balanced on the average, but has some upper limits. Individuals may optimise their position from various aspects: they may save up with tax benefits; without benefits, if they enjoy pension credit, or are faced with upper limits of contribution base; they may decide how much they will work and

[8] This study was also published in Hungarian (*Simonovits 2013*)

how much salary they admit. Individuals are typically short-sighted, and therefore when they are on their own, they make decisions that are worse than the optimal. The author traces back pension paternalism to short-sightedness and the lack of competent market players, as short-sighted players are able to save up private funds, but not enough; on the other hand, the state is able to force them to make contributions, but this is not efficient enough.

In Miklós Rosta's study *(Janus-faced Public Administration Reform in Hungary)* the author points out that Kornai's contribution to social sciences is still up-to-date and valid, and Rosta thinks that the system paradigm as a scientific approach is one of the most suitable frameworks to allow us to evaluate current social processes. Kornai's ideas may be related to economics, but his works exceed the limits of this discipline, and had a stimulating impact on all areas of social sciences. In order to support his statement, Rosta starts from the terms of soft budget constraint and excessive centralisation and then describes how the public administration reforms of the government in power since 2010 in Hungary can be interpreted by using the terms of this framework. The author presents a number of examples in his study to illustrate excessive centralisation (e.g. the establishment of the Klebelsberg Institution Maintenance Centre, the KLIK), the operation of the mechanism with orders (e.g. manager staff number limit of 15 and 10 per cent in ministries and related agencies), and the survival of the soft budget constraint (e.g. final repayment). At the end of the study, relying on the results of the positive examination, normative statements are made about the new system.

There have been significant transformations and changes going on in the Hungarian higher education since 2010. At the time of writing the article entitled *Dancing in a Sack* – How did the transformation of the governance of higher education affect the performance incentives of educational stakeholders?, Eszter Rékasi was still a university student and she tries to describe these changes. The author refers to statistics which show that the ratio of expenses allocated to higher education within the central budget has dropped dramatically. In her analysis, the author refers to Kornai's results published on coordination mechanisms and projects the expected impacts of the measures on the basis of these analogies. Indeed, professional discussions and civil demonstrations cool and heat this issue which is very important for all of us, as the institutions of Hungarian higher education significantly determine the education level of the workforce, the development of research performance and social mobility, thus the limits of the economic capacity of the country.

Rékasi's article is followed by the short introduction of the authors of the book. For professional researchers and experts interested in economics, comparative economics, political science, history, comparative system theory, the opposing pair of capitalism-socialism, and for university students attending social science classes, the studies in the book may be exciting and enriching reading.

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Lessons of the financial crisis*

Dániel Felcser

Martin Wolf:
The Shifts and the Shocks: What We've Learned – and Have Still to Learn – from the Financial Crisis
Penguin Press, 2014, p. 465
ISBN-13: 978-1594205446

In his book, Martin Wolf, chief economics commentator at the Financial Times, seeks to explore how the global financial crisis has changed our views on the economy, the ways we think about economics, and the economic policy. The author provides insight into the fundamental changes and complex interactions between the global economy and the financial system before the crisis and explains how these factors eventually led to the shocks which were experienced.

One of the central themes of the book is the fragility of the financial system and how this inherent fragility escalates from time to time. The author suggests that the increased fragility observed during the crisis was driven by a number of fundamental shifts in the global economy. He identifies three such major changes: the liberalisation of the economy, especially in finance, the technological transformation manifested in the advancement of the information and communication sectors, and the ageing of populations. These underlying factors drove significant changes such as the development of a liberalised and innovative global financial system, rising inequality within individual nations and a massive increase in international capital flows. On balance, the world witnessed an unprecedented shift toward a more market-oriented, financially driven and globalised world economy.

Explanations abound regarding the root of the global financial crisis. It is important to stress that it was not a fiscal crisis, but (perhaps with the only exception of Greece) a financial crisis with fiscal consequences that affected major financial centres worldwide. Early signs of the crisis surfaced in the summer of 2007 and escalated in autumn 2008. Only the globally coordinated action of governments and central banks was able to halt the ensuing panic. Despite the unprecedented policy response, recovery in the high-income countries was disappointing, while

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the emerging economies, in general, managed to grow. This generated a shift in the global economy as previous centres are becoming more peripheral.

Central banks and fiscal policy both helped the economies to recover. If fiscal policy had refused to accumulate the fiscal deficits stemming from the economic downturn, the ensuing recession would have been even more devastating. Wolf argues that policymakers' premature rush back to fiscal austerity delayed the recovery and hindered monetary policy. At the same time, the financial system's reliance on the state can no longer be ignored and the era of financial liberalisation is over, warns the author.

There are numerous lessons to be learnt from the crisis regarding the financial sector. Firstly, the financial system is inherently fragile and vulnerable to panics. Secondly, the widely held view that stabilising inflation will bring economic stability has been proven incorrect. On the contrary, it is precisely in times of economic stability – when economic participants are more prone to take greater risks – that the financial system becomes more fragile. Finally, policymakers failed to come up with a firm response until the crisis hit its trough. The lax policies preceding the crisis were rooted in the assumption that participants had a vested interest in the stability and the efficiency of the financial system. Subsequently, crisis management found itself torn between two conflicting ideas: should it go to the rescue of ailing financial institutions or was it ill-advised to intervene, in view of the moral hazard? Dealing with moral hazard, the author notes, is like the job of the fire service: you cannot let any building burn down as the fire may spread to people who had nothing to do with starting it in the first place. A financial crisis should be addressed similarly: finances are also in need of fire brigades, regulations and insurance.

Aware of its importance, societies around the world apply various methods to prevent the collapse of the banking system in times of crisis. Governments seek to improve the safety of banks, but banks are profit-oriented, risk-taking institutions. A more robust financial system could have helped crisis management, but the crisis also revealed some unsustainable economic processes, in light of which the global economy cannot return to its pre-crisis state. In addition, the crisis called into question a central tenet of free market economies: that the rational pursuit of self-interest delivers stability. In Wolf's opinion, this crisis was a crisis of conventional macroeconomics as well, as it emanated from the system itself. Therefore, a "new normal" is called for.

While the post-crisis policy consensus preserves the globally integrated economy and financial system, it also recognises the threats. Accordingly, it adds macroprudential supervision and more financial regulations to the existing inflation targeting monetary policy. By contrast, various alternative theories hold different views on economic roles and trends, but tend to agree on one specific point: that the balance between the state's role as the supplier of money and the private sector's role as the creator of credit and money is highly destabilising. Based on this consideration, they anticipate a more pronounced segmentation of the world's financial system.

The crisis spawned significant regulatory changes, of which two measures are of key significance: the increased capital adequacy requirement and a macroprudential framework focused on the resilience of the financial system as a whole. The augmented regulations, however, have become extremely complex. In any event, points out the author, the financial system will collapse over time despite regulation, as fragility is an inherent feature of the system. Regulations notwithstanding, societies permit some activities that are not perfectly safe (e.g. flying). As regards finances, however, two aspects should be borne in mind: the enormous negative externalities and the substantial economic and social costs of financial crises.

The crisis is coupled with uncertainty surrounding the future of the euro area. After the Greek debt crisis, the epicentre shifted to the euro area. The structure of the euro area is an interim solution where Member States are not independent and currency arrangements are more credible than traditional, fixed exchange rate regimes, but it does not benefit from the automatic risk-pooling mechanisms of modern federal states. As an important lesson of the crisis, changes in the balance of payments remain relevant in the Monetary Union as well. While free capital flows are commonly cited among the benefits of the Monetary Union, countries with current account deficits were unprepared for the sudden reversal of capital flows. Although economic globalisation yielded a number of significant results, such as the integration of China and India into the global economy and the reduction of poverty in several developing and emerging regions, the globalisation of debt generating capital flows had no such advantages, points out the author.

According to Wolf, the crisis underlined the precariousness of a monetary union that is composed of different economies and diverse cultures. Compared to the United States, the economy of the euro area is less integrated and the institutional-political fundamentals are weaker. Another critical point is the fact that break-up is not an option in the case of the US. The euro area needs to carry out a symmetrical adjustment to restore the balance; in other words, countries with current account surpluses should also strive to alleviate imbalances. A solution should be found for financing the economies that face financial difficulties and for addressing the debt overhang. Finally, further progress is needed in key economic policy areas.

Over the long run, the health of the economies and the sustainability of growth should be put in focus. In the author's view, in addition to improving the resilience of the financial system and alleviating global imbalances, there is also a need to preserve the useful elements of the open global economy and integrated finances. Essentially, economies must do everything in their power to prevent crises in the future. It remains to be seen how far the world should go beyond the new economic policy consensus to reach this goal. It depends on the recovery of the economies and on the magnitude of the risks that they are willing to take.

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Creative strategy*

Gergely Fábián

William Duggan:
Creative Strategy: A Guide for Innovation
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ISBN: 978-0231160520

William Duggan, a professor at Columbia Business School, won an award for teaching excellence in 2014 and has given talks on innovation to thousands of executives from companies in countries around the world. His book titled *Creative Strategy: A Guide for Innovation* is basically a practical guide that describes a method that can be easily used by anyone, and that requires no economic, business or other qualifications: it may be used in both the business and the non-profit world, and the reader can also use it for his/her own personal development. The author recommends us to use the “beginners’ mind” to get acquainted with the method, i.e. we should clear our minds of methods learned earlier and give a free rein to learning this new method. By the end of the book, we can decide whether or not we think it is worth applying the ideas to the rest of our lives.

Creative ideas are required for any strategy, but we should also bear in mind that the world around us keeps changing, and a strategy that was excellent in the past may not suit the new situation. So the question is: how can our strategy keep pace with the constantly changing outside world, i.e. how to ensure the right creative ideas in every case.

Originally, two traditional methods were known: the strategic and the creative. Strategic methods help us to analyse the situations that occur, but do not take us any further. Creative methods help us to come up with new and creative ideas. These two are sharply divided, which means that the analysis of the problem from a strategic point of view is followed by the collection of creative ideas in the course of brainstorming. According to the traditional method, these two are sharply separated, and no connection has been established for the creative solution of the situation. These two separated methods are based on an assumption about the operation of the brain. The left brain as the “analytical part” is responsible

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for analytic ideas, while the right brain is where creative ideas are born, so that is the “playful part”. However, this idea has now become outdated. According to all the scientific facts we know, the operation of the two sides of the brain cannot be separated so strictly, as both sides participate in the generation of each thought and new idea.

The book describes the method of creative strategy step by step and how to use it for the purpose of innovation. Each step has its own complexity, and application requires the possession of various skills. The method described in the book does not refer to a particular situation. The simplified version of the creative strategy is presented, and therefore it is suitable for the management of any situation.

The steps of the usual planning procedure include the setting of objectives and then the defining the deadline, depending on the strategy. As we are already familiar with this traditional procedure, when we complete the usual steps, we often do not consider the most important thing in planning: the need for innovation. Creative strategy helps us to recognise the possibility of innovation.

The new theory mentioned in the book (“learning and memory”) illustrates the creation of new ideas through a number of examples. When we do or learn something, the details are stored in our memory. Later, when we face a new, previously unknown situation, our brain breaks down the problem to tiny details, and finds details from earlier memories that match the new, and they are rearranged. This means that individual small memory pieces are used in a different combination, thus offering a solution to the new situation. The combination is new, but its elements are not. These three steps – breaking down, searching, combination – are significantly different from the earlier two-step theory (analysis and brainstorming). Creative strategy shows the method how the three steps of the “learning and memory” theory work in practice, i.e. how the human brain works in reality.

The learning and the memory methods depict a totally new picture on the way innovation works. Let’s start with the analysis part. Staying with a mathematical example, if we want to divide twenty to two equal parts, we get ten and ten. This is simple and logical. However, in the case of mathematics, it is easy, as it is a simple and closed system. But what happens when we want to assess the performance the company achieved in the previous year? If there are several departments, each department head would consider his own unit as the most important, and would definitely mention his own results. So what is it that counts, and what is it that does not? Each department head brings his own arguments he finds important and logical. In the debate, everybody tries to use logical arguments. But can we talk about a crystal clear logic in this case, as in mathematics?

The answer is given by the learning and memory methods. Each person stores different pieces of information in his mind, as he learned different things in his life. Therefore, staying with the previous example, the right answer to the question how to assess the performance the company achieved in the previous years is different to everybody. All this is done in two distinct way: by using the “experienced intuition” and the “strategic intuition”.

“Experienced intuition” is nothing other than the quick retrieval and application of actions and ideas which we have already gone through and experienced. Let’s just think about the work of firemen, nurses, doctors or soldiers. For example, when a doctor has to make a prompt decision on the site of an accident and say which injured person is in the most serious condition, he will use his “experienced intuition”. The more experience the person has, the faster and better his intuition will work. “Experienced intuition” develops day by day, almost all trainings at the companies are based on that. However, this kind of development does not facilitate innovation. As soon as we detect a situation, we try to solve it in the way we learned. It may happen, though, that the situation is completely new, so it would require a brand new method to solve it. We may make a huge mistake if we apply the old and established method. “Experienced intuition” does not help in the solution of a creative or strategic problem. Only “strategic intuition” can help in that case. In this method, we do not simply utilise already experienced events. In our mind, the actually experienced events are mixed with the information we saw, heard and learned, and with the learning and memory method, these pieces are mixed in a different way, creating innovation. This process usually takes place when the brain is not tired, but relaxed enough. Surprising and new ideas may be born in this process. Returning to the assessment of the company’s performance achieved in the previous year, we definitely have to use the strategic intuition, because no-one knows each and every detail of the operation of the company last year, so it is necessary to apply strategic intuition to decide which piece of information is important and which is not. This is especially true in the formulation of the future strategy of the company, because in that case, obviously no-one has any experiences about the future.

The book offers lots of practical and hands-on knowledge, as on the one hand, it describes in detail the operation of the creative strategy in corporate practice, and on the other hand, it examines each of the ten most popular management methods – e.g. benchmarking, Balanced Score Card – to find out why they do not result in innovation, and compares the methods with creative strategy.

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Competitiveness and Growth Forum – Report on the first professional event held by the Competitiveness Section of the Hungarian Economic Association (HEA)*

Gábor Meizer

On 24 June 2016, the newly established *Competitiveness Section* of the *Hungarian Economic Association* (HEA) held its first official professional event in Budapest entitled *Competitiveness and Growth Forum*. More than 130 people participated at the event jointly organised by the Competitiveness Section of the HEA and the Magyar Nemzeti Bank (MNB) for those who are interested in the field of competitiveness, from various areas of the economy. The well-known presenters at the forum held lectures including evaluation analyses, wide-ranging messages and recommendations in connection with the complex conceptual sphere of competitiveness, discussing subjects such as international and Hungarian experiences of economic convergence, the possibilities of competitiveness reforms in Hungary, recommendations aimed at accelerating growth, challenges and dilemmas in increasing productivity and competitiveness, and practical relations of competitiveness.

The Competitiveness Section of the HEA started its operation, at the initiative of the colleagues of the central bank, with the purpose of contributing to public thinking on sustainable economic growth and competitiveness, as an intellectual workshop. Strengthening competitiveness and ensuring sustainable growth to make economic convergence possible are key issues in terms of the success of Hungary, and thus the Magyar Nemzeti Bank also provided its support for the initiative.

The participants of the Competitiveness and Growth Forum were greeted by *Éva Hegedüs*, representing the leadership of the HEA, secretary general of the organisation and President and CEO of Gránit Bank, who spoke in her welcome address about the relevance of competitiveness, and also about the interactions that can significantly influence the level of competitiveness. Hegedüs mentioned as an example Arie de Geus, former head of strategic planning for Shell, who thought that the sole sustainable competitive advantage may be in the capability

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of faster learning versus the competitors. Moreover, the secretary general of the HEA also spoke in detail about the factors influencing the competitiveness of individuals, companies and the specific country. Amongst other things, Hegedüs called attention to the fact that the competitiveness of individuals and the labour market are essential for the competitiveness of a country, just as efficient and productive companies, with appropriate flexibility, are also necessary. However, a significant role is also played by the state in establishing this environment and ensuring it continuously.

After the welcome address by the presidium of the HEA, *Dániel Palotai*, chief economist and executive director of the Magyar Nemzeti Bank, chairman of the Competitiveness Section of the HEA, opened the Forum. One of the main messages of Palotai's presentation was that, in addition to the successful turnaround in fiscal policy after 2010 and in monetary policy after 2013, the desirable harmony of the two branches of economic policy was created, which results in an exceptional status in terms of economic history as well, concurrently ensuring economic balance and growth; however, in order to achieve sustainable growth ensuring permanent economic convergence, it is necessary to ground it in further reform measures: consequently, a turnaround in competitiveness is also needed. The chief economist of the MNB said that the primary objective of the Magyar Nemzeti Bank is to achieve and maintain price stability, but that, in addition to achieving these goals, supporting other purposes is also among its statutory tasks. The management of the central bank, which came into office in 2013, has proven that the mandate stemming from the Act on the Central Bank can be fulfilled; with its measures it contributes to achieving price stability, it also ensures financial stability and supports the economic policy of the Government with the instruments at its disposal. The easing cycles and the Funding for Growth Scheme have had a significant effect on growth in recent years, but the participation in the conversion of households' foreign currency loans, and the launch of the Self-Financing Scheme, aimed at decreasing the external vulnerability of the country, can also be underlined in terms of the results achieved. Stemming from its mandate, the Magyar Nemzeti Bank also supports the development of Hungarian financial literacy, and, with the tools available to it, it intends to help education in economics, and to widen and strengthen financial literacy. The central bank supports the achievement of this goal using a wide range of devices, a fundamental element of which is the book series on economics and monetary policy launched in 2015. After the first volume of the series, "*Economic Balance and Growth*", the volume entitled "*Competitiveness and Growth*" was published in 2016, which is based on the realisations already outlined above, and thus also includes recommendations with respect to competitiveness reforms, in addition to presenting international and Hungarian experiences of economic convergence. Palotai noted that the initiative from the side of the colleagues of the central bank was launched in order to further strengthen public thinking on the subject of competitiveness and sustainable growth, which was aimed at the establishment of a new, independent Competitiveness Section within the Hungarian Economic Association. The Competitiveness Section of the HEA provides an excellent forum not only for those who deal with examining the aforementioned topics and implementing the related measures, but for anyone who is interested in the key future mechanism of economic policy. According to Palotai, one of the most important characteristics of competitiveness is that it means possibilities, however, in order to utilise the opportunities shaping the future, an appropriate framework and public thinking on competitiveness are also necessary. By providing an intellectual workshop, the Competitiveness Section of the HEA mainly targets the strengthening of the latter consideration. The chief economist of the MNB said that another objective of the work of the Section is to find those breakout points – on a professional basis, with consensus – where the Hungarian economy can be made more competitive by implementing further reforms. The leaders of the Section trust that this contribution will also effectively manifest itself in the results of economic policy and the successful convergence of the Hungarian economy. The presentation of the two executive directors of the Magyar Nemzeti Bank outlined the main messages of the volume entitled “Competitiveness and Growth”, which can also be interpreted as the starting point of the work of the Section.

Barnabás Virág, executive director for monetary policy, financial stability and lending incentives of the MNB, board member of the Competitiveness Section of the HEA, delivered a lecture at the Forum on the international and Hungarian experiences of economic convergence. Virág also called attention to the fact that economic growth retaining economic balance may result in permanent convergence. In the examined EU country group, in the last two decades, the rate of convergence was the slowest in Hungary, and the Hungarian economy was also characterised by an unsustainable financing environment prior to the crisis. After the restoration of economic balance and a successful economic turnaround, there is now a need for a turnaround in competitiveness to ensure sustainable convergence, in addition to maintaining economic balance. Discussing the international experiences of economic convergence, the executive director of the MNB underlined that, looking back on the past approximately half a century, relatively few countries succeeded in rising from the moderately developed status. The outperforming countries include some Asian and EU countries as well. If a country intends to bypass the trap of moderately developed countries and make steps towards developed status, a special role is played by innovation activities and investments in infrastructure, but the relevant factors also include higher value added production and services. Empirical findings also verify that a high investment rate in an appropriate structure is necessary for the successful convergence of a given country. In addition to improving the capability to innovate, there is more chance for success with higher internal savings as well. In light of the international experiences, Virág also mentioned the following among the conditions necessary for convergence: economic openness, macroeconomic stability, future orientation, and the appropriate quality of leadership and governance. According to the executive director of the MNB, however, it is very important that, despite the lessons that can be drawn, there is no uniform solution and the past examples of convergence cannot function as a vision for countries currently intending to converge. Furthermore, independent creativity cannot be disregarded either. As regards Hungarian experiences, Virág identified as a source of progress in recent years the favourable labour market processes, reflected in the increase of activity and employment. In connection with the breakout points, improving the economy's capability of creating value is essential, which also includes improving the productivity of the SME sector compared to large enterprises. The board member of the Competitiveness Section of the HEA added that growth reserves can be identified with respect to labour, capital and productivity; moreover, Hungary should increasingly turn towards the intensive factors of growth. Growth aided by innovation is also important because the global economy is on the threshold of the 'Industrial Revolution 4.0', while the skills necessary for employment are also being fundamentally transformed. In his closing remarks, Virág also noted that the efficient co-operation of the participants of the economy – families and the civil society, companies, the financial intermediary system and the state – is also essential for successful convergence.

After establishing the diagnosis, in his presentation, Dániel Palotai discussed the recommendations which can enhance the competitiveness of Hungary and free up resources, outlining in detail the recommendations of the second main chapter of the volume entitled "Competitiveness and Growth". The chairman of the Competitiveness Section of the HEA emphasised that the measures discussed represent a proposal package formulated from a view from above for the decision makers, and in the course of implementing these it is worth taking into account the timing of the measures, the room for manoeuvre of the budget, and synergies as well. Impulse is necessary for convergence, but so is an appropriate framework, and the state has a definite role in ensuring this. Economic policy can contribute to improving competitiveness in several ways, such as ensuring stability and influencing the quantity and quality of resources, and the operation of the state, but competitiveness has dimensions going beyond economic policy. In separate chapters of the volume, the employees of the MNB discussed the competitiveness of employment, companies, the state, human resources, the banking system and the utilisation of the EU funds, as well as other special subjects. It is important that specific steps have already been taken in the direction of implementing certain measures by the government, and the lecturer mentioned these separately. In connection with the first topic, he again noted that the Hungarian labour market is in much better condition since the crisis, but that further expansion of employment is still necessary. Stimulus for work must be improved covering everyone; one of the tools for this may be a further reduction of public dues on labour. Moreover, it is important to also focus on groups where employment is especially low and where the connection to the labour market is the weakest. For example, expansion of the Job Protection Action Plan could represent an efficient tool. According to Palotai, the public employment programme can be considered as a success in the sense that groups have been included in employment which used to be inactive or unemployed, but for the time being, the proportion of participants entering the open labour market is lower. In this respect, encouraging education activity and employment on the open labour market may mean a move forward, and measures by the government have already been taken in this regard. As the chief economist of the MNB pointed out, the following actions would be necessary to increase the competitiveness of the labour market: stimulating atypical employment (telecommuting and part-time jobs) and strengthening elements of the pension system which encourage remaining on the labour market. Appropriate operation of the corporate sector is also a prerequisite for sustainable growth, and ensuring innovation-driven development can also be interpreted as an objective, in addition to the activation of resources. In order to ensure that the Hungarian SME sector can retain and increase its competitiveness, increasing productivity is necessary in addition to increasing salaries. Significant results have been achieved with respect to combating the shadow economy (implementation of online cash registers, monitoring freight traffic), but expanding the set of instruments of the National Tax and Customs Administration (NAV) may reveal further reserves. Corporate competitiveness would be improved, inter alia, by simplification of the tax system, one element of which may be the reduction of tax evasion, or, in the case of appropriate manoeuvring room of the budget, the annulment of the tax advance top-up or approaching the corporate income tax towards cash-based taxation, which can encourage further investments. Stimulating research and development and increasing funds are definitely important points, and the creation and continuous improvement of the appropriate institutional, infrastructural and business environment can contribute to this significantly, partly by also strengthening the relationship between universities and companies. Since the ratio of companies conducting R+D activity falls short of the EU average, extension of the existing tax allowance should be considered. Companies' competitiveness can also be increased by productive investments, and support for this could be provided by the competing guarantee institutions, a more active Hungarian industrial policy, the adaptation of new technologies, and regional and local economic development. Supporting SMEs is also important because more than two thirds of domestic employment is provided by this sector. The chief economist of the MNB added that the operation of the state itself plays a critical role in the formation of competitiveness: it is necessary to have a state which supports the private sector and also performs efficiently itself, since resources can thus be freed up for the private sector. To this end, a reform of the salary scale, the introduction of wage bill management and the revision of the structure of public administration are also needed. The government has already taken steps in these directions. Among other recommendations, Palotai mentioned the development and back-testing of state services, a tool for which may be the regular measurement of satisfaction and the introduction of e-governance, which has significant reserves, and thus the acceleration of administration. The efficiency of settling legal affairs also affects competitiveness, and thus it is worth making moves forward in the related areas as well. Moreover, a significant competitive disadvantage can be reduced by accelerating the issuance of building permits, and by developing state public utility services. Some results in this respect have already been achieved recently. One of the major elements of long-term growth potential is human capital, the quantitative and qualitative development of which is essential; furthermore, it can result in positive feedback loops as well. There is an unambiguous relationship between human capital and per capita GDP. According to Palotai, active social policy to support starting families is necessary in order to reverse the unfavourable demographic processes; this may feature elements such as an increase in the upper limit of the childcare benefit, a further increase in the family tax base allowance for families undertaking two children, qualitative improvement regarding the places of nurseries and kindergartens, and the establishment of a family-friendly workplace environment. Enhancing the quality of healthcare is indispensable, but at the same time it is also absolutely necessary to raise the amount of available funding – partly by involving private funding more actively – and to strengthen disease prevention and mental health. In connection with the pension system, he made a recommendation, inter alia, to further strengthen the role of self-provision. The competitiveness of human resources depends significantly on the performance of education as well: in this regard, amongst other things, it would be necessary to move ahead with structural reforms, increase public and private funding, improve language skills, and further increase the ratio of people with higher education degree. Palotai also called attention to the fact that a development policy based on EU funds also represents an important opportunity to strengthen competitiveness, especially since approximately 60 per cent of the funds that can be achieved in the current budget cycle – a ratio higher than ever before – is available for economic development purposes. However, it would be practical to decrease the costs of accessing EU funds by companies and to make the application system more efficient. With regard to the competitiveness of the banking sector, he explained that a profitable banking system which supports corporate lending is necessary. By supporting the Growth Supporting Programme, the restoration of market-based lending can be formulated as an objective, which means a 5-10 per cent expansion of corporate, and, within that, SME lending in annual comparison. In connection with financing the household sector, primarily related to home construction, achieving active, but prudent lending can be formulated as an objective, and this is supported by the central bank with macroprudential instruments as well. The solid capital and liquidity situation is also a prerequisite for the long-term competitiveness of the banking sector, and this is also ensured by the regulatory steps taken in the recent past. In his presentation, Palotai also talked about the advantages of the efficient, innovative and competitive banking system, emphasising the perspective role of the revived stock exchange in financing growth. Now that the stock exchange is once again in Hungarian ownership, the objective of the MNB is to expand the activity and capitalisation of the Budapest Stock Exchange, which may contribute to increasing the weight of capital market financing and financial mediation as well. The MNB made a recommendation for both supply and demand side incentives in connection with the development of the stock exchange. Palotai closed his presentation by mentioning that we could already see examples for the implementation of recommendations included in the volume in several cases, for example, the reform of the state institutional system and public education, but welcome measures also include driving back tax evasion, introducing the career path model, shifting towards performance-based wage setting, and implementing a more active domestic industrial policy.

The first block of presentations at the Competitiveness and Growth Forum was closed by *Nika Gilauri*, ex-prime minister of Georgia and founder of the consulting firm Reformatics, who, as a well-known expert,[1] mentioned the competitiveness analysis of Hungary and also made recommendations aimed at accelerated growth, emphasising that the Forum is being held in a very important period. According to Gilauri's assessment, not only has Hungary succeeded in recovering from the crisis with the appropriate combination of unorthodox economic policy measures, but the economy of the country has been set on a growth path in recent years. He believed that Hungary can also become a regional champion, but structural reforms to accelerate growth and growth based on private sector initiatives are necessary for this. From a macroeconomic point of view, favourable processes include the continuous decrease in the public debt-to-GDP ratio and maintaining the budget deficit at a low level, along with the high net lending, the decreasing external vulnerability of the country and the outstanding export performance; but other individual measures, such as the Funding for Growth Scheme and the expanded application of the public employment programme, could be mentioned

[1] Nika Gilauri was Minister of Finance of Georgia between 2007 and 2009, and Prime Minister of the country between 2009 and 2012. According to the World Bank's publication "Doing Business", Georgia produced one of the greatest advances (improving by almost 100 positions) in terms of competitiveness during this time.

as well. However, there may still be challenges from the side of the banking sector, the ratio of non-performing loans is high compared with the examined regional countries. In addition to presenting the financing situation of the Hungarian state, Gilauri also noted that in May 2016 Fitch Ratings restored the Hungarian debt rating to investment grade category after several years, discussing the evaluation behind this step and the opinions formed by the other large credit rating agencies. Moreover, where Hungary is in the competitiveness rankings was also presented in a regional comparison. Based on a survey conducted in the SME sector, a less optimistic picture emerges among Hungarian SMEs in a regional comparison. While companies judged several measures positively, they also expected further reforms to improve the business environment. According to the founder of Reformatics, confidence in the future is one of the most important trend-setting factors in terms of the success of a country. Based on the results of the survey, however, the confidence of Slovak and Czech SMEs regarding economic developments is stronger than in Hungary. Presenting his experiences up to now, Gilauri thinks that economic growth can also be accelerated easily and significantly by increasing the activity of the SME sector and debottlenecking. On the basis of the analysis of competitiveness, he recommended reform measures in areas such as taxation, the business environment, the labour market, education, and the pension and healthcare system. The reforms complementing each other would, inter alia, induce further growth, encourage market initiatives, reduce the share of the grey economy, and may have a favourable effect on the budget as well. It is important, however, in connection with the recommendations that the solutions working in other countries cannot simply be copied: it is necessary to adapt those to the specific environment in every case. The founder of Reformatics made several recommendations in connection with the tax system, such as phasing out tax types with low revenue which are costly in terms of administration; decreasing the tax wedge; application of the dividend tax according to the Estonian model; improving the tax dispute resolution; the introduction of free of charge corporate consulting services to be provided by the employees of the tax authority; and outsourcing certain activities from the tax authority to private accounting and audit companies. The almost 60 tax types are rather confusing for foreigners, and thus it is necessary to simplify the tax system. That said, there have been several progressive reforms in recent years, for example, reducing the corporate tax rate is one of these according to the speaker. The reform of the tax system always represents a task full of challenges, but by selecting the appropriate measures, it can be implemented in such a way that its budget effect could be neutral at least. The reform of the tax system can, at the same time, also contribute to the reduction of the shadow economy, which would further increase the performance of the SME sector and hence bolster economic growth. According to Gilauri, the introduction of the dividend tax according to the Estonian model could indeed represent a challenge in the first years in terms of the budget (since payment of the corporate income tax would take place when the profit is taken out from the enterprise in the form of dividend), but from the third year, the investments started would already show their positive effect. At the same time, it could be introduced in Hungary also because the share of corporate income tax is very low within total tax revenue, and implementation may be realised in phases as well. Gilauri said that regulatory and structural reforms are also necessary to encourage the activity of the private sector, starting from the simplification of the company registration process all the way to property registration, but as was mentioned, accelerating the issuance of building permits or a significant reduction in the days necessary to connect electricity could also be highlighted. Taking into account the experiences of other countries as well, he thought that the basis of labour market reforms is ensured mostly by a more flexible framework. As regards sectoral recommendations and education, Gilauri considered it important to provide more efficient financing of higher education and research activity, and to ensure an appropriate competitive situation between institutions. In particular, further recommendations included a needs-based social welfare system, the reform of inflation indexation in the pension system, and the quality development of healthcare as well. In summary, Gilauri noted that faster growth based on private sector initiatives can be considered as the guiding principle of the reforms.

The second block of presentations was opened by *László Turóczy*, deputy state secretary of economic planning and competitiveness at the Ministry for National Economy (MNE), with his presentation entitled "Productivity and Competitiveness – Challenges and Dilemmas". According to Turóczy, the examination of productivity as an aspect of competitiveness is important because improvement in productivity generates an increasingly large part of global growth and is critical in terms of economic prosperity; moreover, the more developed an economy, the smaller the role of the traditional factors of production. In ensuring convergence, the group of issues of productivity consequently represents an unavoidable factor. Meanwhile, it must also be taken into account that growth in productivity slowed down around the world after the crisis. At least in part, this was caused by structural factors, and this overshadows the long-term growth outlook as well. According to the deputy state secretary of the MNE, Hungary's lag behind in comparison with developed countries can be explained mostly with the difference in labour productivity. Whereas the per capita number of hours worked is higher than in the developed economies, in terms of GDP per hours worked, there is a serious lag, as in the other countries of the region. Similarly to the previous lectures, Turóczy also emphasised that there has been a significant improvement on the labour market in recent years, and that the increase in the employment rate has had a clearly visible effect on economic growth. However, this occurred in conjunction with stagnation in productivity. According to Turóczy, one of the important dilemmas faced by Hungary is how to continue activating labour market reserves with low productivity in such a way that productivity also improves. One possible solution is to improve the productivity of employees with lower education, perhaps via adult education programmes. This dilemma, however, exists at the global level as well, especially since labour can already be replaced with automation in more and more production phases and in the case of services as well, which is an important characteristic of the development of technology. Turóczy noted that, in terms of economic policy, another challenge may be the technological diffusion, i.e. the group of issues of how – via what channels and how quickly – innovations reach the other participants and sectors of the economy. At the same time, it is worth examining knowledge transfer within the framework that the ratio of foreign-held companies of high valued added is extremely high. According to the lecturer, there has been a turnaround in the trends starting from the second half of the decade, when we could witness the increase in the difference among the companies leading and following globally with regard to the productivity improvement, respectively. Thus, the spill-over of new technologies has slowed down, which is not a favourable process in terms of Hungary. Turóczy added that the difference is even more spectacular in the service sector, which is all the more important because the weight of the sector is increasing continuously all over the world. Consequently, the dilemma is how technological diffusion, which is slowing at the global level and which does not yet operate optimally at the Hungarian level, can be stimulated. The third area mentioned by the deputy state secretary of the MNE is that the Hungarian economy has integrated into global value chains very closely and is one of the most open economies in the European Union, but the question is what value added Hungary can obtain from the value chains. It can be stated generally that the region has low value added, whereas the ratio of foreign value added within total exports in Hungary is outstanding at the EU level. An example of favourable changes is the appearance of service centres, but it would be optimal if domestic value added could also increase in other production processes. Among the most important conclusions, Turóczy mentioned that it is becoming increasingly prevalent that human capital should be developed as well, in addition to involving unused workforce reserves to the labour market. The measures taken by the government – for example, the introduction of the dual training system, and making higher education more efficient – point to this direction, but naturally there are further tasks at all levels within education. Another important conclusion was that the constraints on productivity, which delimit growth potential, can be decreased with innovation. In terms of R+D expenditures, there has been significant progress in recent years, but the involvement of further funding is necessary in order to reach the EU average. Meanwhile, it is not practical to limit innovation to technological developments: in addition to the development of production technology, an increasingly large role is played in the improvement of productivity by market organisation, organisational and corporate management innovations as well. As a third important conclusion, it is extremely relevant that adaptive innovation and the flow of knowledge should also be realised among the participants of the economy. Recognising this challenge, the government allocates significantly more funds for this purpose. Finally, Turóczy said that competition, co-operation and flexible market regulation are all factors that encourage productivity. In addition to the results achieved up to now, these are the fundamental directions that fit in well and, concurrently, provide a framework for the recommendations presented by the lecturers of the MNB as well.

In the last lecture of the Forum*, Balázs Szepesi*, founder and strategic director of the HETFA Research Institute, talked about the practical context of competitiveness. Szepesi started his presentation by stating that willpower is primarily necessary to improve competitiveness, in addition to the recommendations. According to Szepesi, the competitiveness problem of the Hungarian economy was best demonstrated by the difference in productivity between the SME sector and the large enterprises. The labour productivity of smaller companies lagged behind even the average of the Visegrád countries. As Szepesi noted, when discussing the topic of competitiveness, it is explicitly important to not only discuss the objectives: instead, we must also talk about how and with what approach the specific objectives can be achieved. Individuals and companies can operate competitively if they want to and are capable of prevail(ing) on the basis of value creation, co-operation and seeking challenges. In order to strengthen competitiveness, according to the strategic director of the HETFA Research Institute, we should be capable of formulating the areas in which we want something different and better. We should go beyond desire-based thinking and critical approach – the task is not to correct a couple of accidental errors, instead we should be able to change. Szepesi said that in many cases we just do not have strong enough momentum for this. A large part of economic participants has a stable position in the international economic networks which is difficult to change, and the role of the economy is not primary in strengthening the international weight of the country, it must also be taken into account that a large part of the society does not feel pressure for growth, and despite the uncertainties and tensions, the average standard of living has never been as high as currently. Moreover, there are only a few "national champions", i.e. outstanding companies, that have both the opportunity and the calling to strengthen their competitiveness. At the same time, there are strong arguments for why further improvement of competitiveness is necessary. The importance of the position in the global value chains is increasing, the balance of Europe has been upset (as proven by Brexit as well), and power considerations are more important internationally. The flow of capital, people and incomes is becoming increasingly easier at the global level. There is momentum also because the duality present in the Hungarian economy is very strong, which may also cause serious social fault lines in the future. The possibility of improving competitiveness is greatly increased by the fact that more significant budgetary manoeuvring room is available after years of the crisis. All in all, Szepesi thinks that currently there is no strong momentum for starting a large competitiveness programme, but this momentum can be fostered. Creative and innovative steps would be necessary for this by the affected parties. He emphasised that, in the case of state steps serving competitiveness, we must take into account not only the costs and time period of those, but also the guarantees necessary for the implementation of the reform measures. At the same time, improving competitiveness is a collective task: the economic, civil society and intellectual spheres can do much, in addition to the state. State measures can only be successful if the participants of the economy are partners – there should be a stable economic and social coalition in the background. Szepesi recommended the following principles in order to strengthen competitiveness. First, supporting successfully operating companies and models is important – their progress must be supported. Second, supporting the strengthening of the formal institutional system is important, and so is the establishment of flexible platforms of co-operation and guarantees going beyond personal interdependence. Third, we must take into account the structure of the Hungarian economy – the large enterprises fitting organically into the global networks, and the small companies, mainly operating in the local market, function differently, according to different rules. Based on these, the presenter recommended the following economic policy focuses: removing the obstacles restricting small companies; strengthening the economic viability of certain regions; retaining the conditions of the production-oriented economy connected to global chains; and promoting the establishment of economic systems outstanding in certain niches, technologies and brands. The strategic director of the HETFA Research Institute formulated recommendations for governing, such as more stable operation in rule-setting, competitiveness-focused policy approach, public policy innovation, potential-based sectoral and regional policy, and combating the shadow economy. The last point is also important because the economy becomes more transparent as a result of this, which could contribute to the development of the credit market and capital market as well. According to Szepesi, the common will and action of the state-economic-social participants are necessary for improving competitiveness. Szepesi closed his presentation with recommendations aimed at the analysts, for which an appropriate frame may be provided by the further work of the Competitiveness Section of the HEA.

The best opportunity of strengthening public thinking about competitiveness and sustainable growth is to involve the widest possible sphere of parties affected by and interested in these areas, and this is also why the leaders of the Competitiveness Section of the HEA decided to hold their first professional event in the framework of a forum. In closing the Competitiveness and Growth Forum, after the comprehensive lectures, Dániel Palotai, chairman of the Competitiveness Section of the HEA, called attention to the fact that the analytical-assessing evaluation of the topic of competitiveness cannot only continue in the future, but it can further deepen as well, within the framework of intellectual workshops, and for this they expect the connection of the interested parties in the future as well.

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Report on the summer session and annual seminar of the International Association of Insurance Supervisors (IAIS) held in Budapest*

Nóra Kiss

The International Association of Insurance Supervisors (hereinafter: IAIS) held the summer session of its committees and its 9th annual Global Seminar in Budapest on 13-17 June, 2016, hosted by the Magyar Nemzeti Bank. Close to 300 people attended the events of the week, including high-ranking supervisory officials, representatives of large insurance groups and international professional organisations.

Established in 1994, the IAIS is an organisation of insurance regulators and supervisors from more than 200 jurisdictions in almost 140 countries. Its membership covers 97 per cent of the premium income of the world. Its seat is in Basel. Hungary is one of the founding members. The main objective of the IAIS is to promote the effective and globally consistent supervision of the insurance sector, in order to maintain fair, safe and stable insurance markets for the benefit and protection of policyholders, and to contribute to global financial stability.

In order to achieve its objectives, among others, it develops principles, standards and guidelines for the supervision of insurance markets, and promotes the implementation and practical application of principles and standards. For the purpose of the latter, it elaborates methodologies to assess the observance of principles and standards, and promotes evaluation processes; encourages cooperation between insurance and other supervisors, facilitates mutual assistance, education and training, as well as the exchange of supervisory information in the field of insurance supervision; points out the common interests of the supervisors of insurance and other financial areas, and identifies potential risks affecting insurance supervision.

The operation of the organisation is led by the *Executive Committee* (ExCo), whose membership comprises the representatives of individual geographical regions according to certain quotas. Europe has altogether 6 places in the ExCo: Western Europe and Eastern and Central Europe have 5 and 1, respectively. The Hungarian supervisory authority represented the region in the ExCo on two occasions, for several cycles.[1] The ExCo leads the committee system of the organisation. The

* The views expressed in this paper are those of the author(s) and do not necessarily reflect the offical view of the Magyar Nemzeti Bank.

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[1] In respect of the ExCo membership and the chair and vice-chair functions of the committees, a cycle means 2 years.

standard-setting and implementation-promoting work is performed by the *Financial Stability and Technical Committee* (FSTC) and by the *Implementation Committee* (IC), respectively, as well as by the working groups and task forces organised under them. The MNB actively participates in the work of the IC and the FSTC and has been a member in both since their establishment.

As a general practice, the IAIS usually has three sessions of committee meetings in a year, while lately it held four. In the history of the association, the insurance supervisors of the world had two meetings in Budapest: the spring session in 2004 and the autumn session and the annual conference in 2008 were hosted by the supervisory authority at that time.

The summer session of 2016, held in the Corinthia Hotel Budapest, was hosted by the Magyar Nemzeti Bank. During the series of events lasting a whole week, the committees held their meetings from 13 to 15 June, and on 16-17 June, the "Global Seminar" and in parallel with the second day of the seminar, the Field Testing Volunteers Workshop took place. Close to 300 people attended the week's events: along with supervisory officials (including Zhou Yanli, the vice president of the Chinese insurance supervision, Gabriel Bernardino, the chairman of EIOPA, and several members of the Board of Supervisors of EIOPA, etc.) and experts, the representatives of large insurance groups (AIG, Allianz AG, Aviva PLC, Metlife, Prudential PLC, Swiss RE, etc.) as well as international professional organisations and associations (e.g. The Geneva Association, Toronto Centre, World Federation of Insurance Intermediaries etc.) attended.

During the three days of the session of the committee meetings, the four main committees – in time sequence, the Implementation Committee (IC), the Financial Stability and Technical Committee (FSTC), the Executive Committee (ExCo) and the Budget Committee – as well as the Signatories Working Group, Joint G-SII Methodology and NTNI Task Force and Audit and Risk Committee met. Thanks to the active participation of the members, several detailed professional discussions took place at the committees' meetings and a number of important decisions were made. As a new milestone in the standard-setting work, the FSTC accepted the improved draft of the first version of the insurance capital standard (ICS 1.0) at its meeting in Budapest, and as an important step in the development process which has lasted several years, the IAIS issued it for a second public consultation on 19 July. The ICS 1.0 concentrates on a standard method, but considers other methods of the ICS capital requirement calculation as well, which will be dealt with by version 2.0. The consultation material contains 230 questions, and any comments on such may be submitted until 19 October.

The FSTC approved the Application Paper on Approaches to Supervising the Conduct of Intermediaries as well, and with the approval of the ExCo, this was also issued for public consultation soon after the meeting. In this document, the IAIS covers the key role played by insurance intermediation, the related consumer protection expectations, describes the types of intermediaries, the various approaches to the supervision of intermediaries, and the supervisory requirements that promote the good conduct of business.

In the course of the *Global Seminar*, which was held for the ninth time, in addition to the members of the IAIS, the representatives of large insurance companies and insurance associations received comprehensive information on the standard-setting work of the IAIS. They also had the chance to exchange views on some of the current issues in the sector. On behalf of the host, the seminar was opened by Koppány Nagy, director of the Directorate Insurance, Pension Funds and Intermediaries Supervision of the MNB. The presenters and the participants of panel discussions included supervisory officials, as well as the representatives of some large international insurance companies and professional supporting (Access to Insurance = A2ii) and academic associations (The Geneva Association). The seminar was video recorded and will soon be accessible on the website of the IAIS. More than half of the participants came from the stakeholder sector.

In the programme of the seminar, one of the panels that attracted most interest presented *the present status of the development of global capital standards and the insurance capital standard (ICS)*. In 2013, the IAIS drew attention to the fact that – for the promotion of financial stability and protection of policyholders – it is essential to set up a stable capital and supervisory framework for the insurance sector. In this light, the development of a risk-based global insurance capital standard (ICS) was initiated, and its first version is expected to be approved in mid-2017. The planned deadline of the second version is the end of 2019. ICS is part of the ComFrame,[2] which also includes the BCR (Basic Capital Requirement) and HLA (Higher Loss Absorbency) requirements accepted in 2014 and 2015, respectively, and approved by the Financial Stability Board. Testing of the elements of the capital standard is a key part of the work described in this panel, and it is carried out with the voluntary participation of large insurance groups – the Field Testing Volunteers Workshop organised in parallel with the second day of the seminar was related to that.

In the panel *G-SIIs: Assessment and Designation Process*, supervisory officials from Germany, Singapore and the US presented and discussed with the managers of the

[2] In the course of the insurance supervision standard-setting activities, the IAIS developed several generations of the *Insurance Core Principles* (*ICPs*). The presently valid ICPs identify the global requirements with respect to insurance supervisors. Following the identification of the requirements of the supervision of individual institutions, the IAIS standard-setting activity has reached a higher level. The standard-setting activity is definitely of group approach: it concentrates on the framework of the supervision of internationally active insurance groups (Common Framework for the Supervision of Internationally Active Insurance Groups = ComFrame (for IAIGs)), and within that, it pays special attention to the supervision of the Global Systemically Important Insurers (G-SIIs).

AXA group and Metlife the process of assessing and designating global systematically important insurers, the role played by IAIS in this process, the results of the latest review of the assessment methodology, and other critical issues such as non-traditional and non-insurance activities. The discussion covered the quantification of risk management tools and other factors that can reduce systemic risk, and can contribute to systemic risk, respectively.

Within the frame of the already traditional *ExCo Dialogue,* stakeholders expressed their opinions on the IAIS priorities in three main subjects: financial stability and recovery/resolution, standard-setting and implementation, IAIS operation and the involvement of stakeholders. Stakeholders agreed with the work carried out by the IAIS in these areas and appreciated that they had a chance to exchange views with ExCo in the course of ExCo dialogues held several times a year back-to-back the committee meetings. At the same time, they mentioned that they would wish to express their opinion already at an early stage of standard-setting, not only in the public consultations.

The participants of the panel *Assessment of Insurance Core Principles (ICPs) as the First Step* found that assessment was a critical step in the improvement of supervisory practices, through the successful implementation of insurance principles. They drew attention to the key findings and lessons learnt from the thematic peer reviews carried out so far by the IAIS, and pointed out the importance of assessment in defining the steps to be taken for implementing and understanding the principles.

The discussion held in the *Cyber Risk and Cyber Insurance* panel presented the market of cyber insurance, highlighted the nature and diversity of related risks, and explained that the Financial Crime Task Force was working on a summarising fact-finding material on this subject.

In the panel dealing with the *issues in conduct of business supervision*, supervisory officials from the US, Canada, Africa and Europe exchanged views on how market conduct supervisors reacted to the new types of risks.

Within the frame of the *Distinguished Fellows Roundtable*, experts who had done considerable work for the IAIS in the past and already left the supervisory area, and were recognised as Distinguished Fellows, exchanged views on the activities of the IAIS. The participants of the discussion included Monica Mächler, the former vice-chair of the board of directors of the Swiss Financial Market Supervisory Authority, who had launched the ComFrame project. The members of the panel look at the standard development work, they contributed to actively earlier, from a certain distance already, and thus both their appreciation and their critical comments were objective enough and therefore extremely useful for further work.

In parallel with the second day of the seminar, the *workshop* to test the *insurance capital standard* (ICS) to be applied for the internationally active insurance groups was organised. The workshop was strictly exclusive, as only the insurance groups that volunteered for the testing were allowed to attend.

Both the representatives of the IAIS, and the participants greatly appreciated the Hungarian hospitality and organisation, and everything offered by the MNB as a host. The deputy secretary general said that Hungary set high standards for the organisers of the next session, and the secretary general expressed his appreciation in his thank-you letter sent after the event. In addition to its primary objective, the event also contributed to building a positive picture of Hungary.

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Focus on financial service providers – Report on the 2nd Services Marketing Conference*

Boglárka Zsótér

The 2nd Services Marketing Conference on financial service providers and services was organised by the Institute of Marketing and Media and held on 19 May 2016 at the Corvinus University of Budapest. As regards to its structure, it is important to note that each topic featured both an academic and a practical speaker. OTP Mobil, LP Solutions, OTP Bank, ERSTE Bank, CIB Bank and SOS Children's Villages also attended the conference. The editor of the essays underlying the presentations was Zsófia Kenesei.

The event was opened by *Zoltán Szántó*, Vice Rector for Education. The opening presentation was delivered by *Tina Harrison*, Professor of the University of Edinburgh Business School. The title of her presentation was *The Grand Challenges for Financial Services and Consumers; Implications for Research*. She emphasised the special nature of financial services and that they form a distinct part of consumers' everyday life; as a result, research and expert analysis of the topic continuously face challenges. This situation escalated after the global economic crisis. Tina Harrison called the attention of the audience to four major challenges: rebuilding and maintaining confidence; enhancing user experience by relying on digital technology; improving consumers' capabilities, self-confidence and knowledge; and providing access to core financial services. She labelled financial socialisation, the trust in financial service providers, financial literacy and the determinants thereof as priority research areas. Her presentation provided a broad framework for the conceptual span of the subsequent six topics.

The presentation of *Ildikó Kemény* was most closely related to the opening presentation in respect of the digital theme. In her presentation, she demonstrated the *link between service quality, satisfaction and the word of mouth*, using the example of online banking services. She emphasised the challenges posed by the continuously changing environment, and the responses to these challenges by consumers and providers. Satisfaction surveys are essential for understanding the

* The views expressed in this paper are those of the author(s) and do not necessarily reflect the offical view of the Magyar Nemzeti Bank.

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behaviour of Hungarian consumers, which she demonstrated using primary research and practical experiences. The four key quality dimensions that can be measured in the case of purchasing online banking services are as follows: quality of creating a user account, usability of system management, security and customer service. In the sample examined, consumers' experience with regard to security and customer services is poor, and thus further research in these areas certainly makes sense.

In their presentation *Krisztina Kolos, Zsófia Kenesei* and *Zsolt Szilvai* focused on *service companies' complaint management practices*. They examined how the companies' complaint management practices influence consumers' satisfaction and their future behaviour. Distributive justice is a less researched area. They particularly highlighted the question as to what kind of considerations should govern the degree and type of financial compensation. In addition to satisfaction, the analysis of emotions may also play a key role, which may mediate between the perception of justice and satisfaction. It may be assumed that certain compensation types trigger stronger emotional reactions of consumers, thereby determining their satisfaction and behaviour.

The presentation of *Boglárka Zsótér* and *András Bauer* was built on the topic of *institutional trust*. In their research they examined the degree of institutional trust related to financial service providers among university students and their parents, and whether any distinct influencing factor can be observed in respect of the parental intergeneration impact. A low level of institutional trust is typical in both groups. Banks and insurers were ranked the worst by parents in respect of contractual performance. Parents often do not talk about financial matters with their children; there is a high ratio of *laissez-faire* communication. Based on their research results, they emphasised that the transfer of confidence-related attitude is the strongest in the family in father-son relations, and the influence of parents decreases in direct relation to the increase in financial independence. The absence of communication and higher independence make way for the financial institutions' services and/or education activity.

The presentation of *József Hubert* once again steered the audience to digital media, as he explained how web 2.0 reforms *the practice of impulsive donation*. Charity organisations have access to a number of tools through the internet that open up an unprecedented wealth of opportunities to approach people or handle fundraising campaigns. People donate through social media differently and driven by different motivations than through the traditional channels. The results of his empirical research highlight the fact that groups which are more susceptible to social causes perform better in the recollection of already seen social media posts and can identify the content seen before. Another interesting research topic is that how identification with the cause influences the efficiency of the organisations' marketing campaign.

The topic of the presentation by *Irma Agárdi, Péter Bacsek* and *Tamás Gyulavári* returned to the service providers as they focused on *CRM*[1] *trends in the banking and insurance sector*. They examined the CRM systems of financial service providers in terms of the strategic development process, sales process, channel management and performance assessment, as well as information management spanning through all these. An additional aspect of the analysis was the strengthening of the CRM function within the company, where they differentiated between four phases: available CRM competences; commitment to CRM developments; process integration along the CRM; and the existence of a dedicated CRM officer in the company. The positive impact of CRM on the company's competitiveness can be observed in a number of cases, but there are also examples of complete failure. It is important to note that the successful implementation of the CRM strategy – due to its integrating nature – goes beyond the tasks of the marketing functions, and also poses a great deal of organisational challenges for the top management, such as corporate culture, organisational structure and process management spanning through the company, etc.

The closing presentation of the conference was delivered by *Zsófia Kenesei* on the *new challenges of service design* particularly emphasising service experience design, i.e. customer experience. Businesses that focus on the customer experience may achieve generally higher perceived customer values and thereby more profitable operation. Customer experience is a holistic term, which puts the emphasis on the synergic design of impacts. In order for a service company to provide a high quality customer experience, it must be able to see the customer journey and define each element of the service process, as well as each contact point where it gives signals to the customer. Financial services processes may include several significant moments and each of these has a bearing on ultimate satisfaction.

The academic presentations were always assisted by a corporate speaker, who added practical considerations to the presented results. With this, the conference contributed to the demonstration of the academic and corporate considerations on a single platform, which helped immensely in understanding the most important aspects of financial services.

[1] CRM: Customer Relationship Management

INSTRUCTION FOR AUTHORS

Manuscripts should be submitted in accordance with the following rules.

- The length of the manuscripts should be limited to 40 000 characters (including spaces) but a ± 50 per cent deviation is accepted. Manuscripts should be written in Hungarian and/or English.
- Papers always begin with an abstract which should not exceed 800–1000 characters. In the abstract a brief summary is to be given in which the main hypotheses and points are highlighted.
- At the bottom of the title page a footnote is to be given. The footnote contains every necessary information related to the paper (acknowledgement, relevant information etc.). This is followed by the name of the institution and position the author works at, e-mail address in Hungarian and English.
- Journal of Economic Literature (JEL) classification numbers should be given (three at least).
- Manuscripts should be written in clear, concise and grammatically correct Hungarian and/or English. Chapters and subchapters should be bold.
- Manuscripts should contain the list of references with the first and surname of the authors (in case of non-Hungarians the initials of the first name is required), the year of publication, the exact title of the book, the publisher, the place of publication. In case of papers, the exact title of the journal, the year, the volume, and the pages should be indicated. References in the text should contain the surname and the year separated by comma. When citing, the exact page be indicated.
- Tables and figures are to be numbered continuously (chapters and subchapters should not contain restarted numbering). Every table and figure should have a title and the units of quantitative values are to be indicated. Tables and figures are to be made by MS Word and Excel in Hungarian and English. Notes and sources are to be put directly at the bottom of the tables, figures.
- Equations should be aligned to the right and should be numbered continuously in parenthesis. (Chapters and subchapters should not contain restarted numbering.)
- Manuscripts are to be sent to the Editorial Office of the FER only. Papers are peer-reviewed by two independent and anonymous reviewers.
- Manuscripts should be sent as attachment by e-mail in MS Word file. Figures and tables should be sent in MS Excel file both in Hungarian and English.
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Thank you!

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