



**ECONOMIC ANNALS-XXI**  
ISSN 1728-6239 (Online)  
ISSN 1728-6220 (Print)  
<https://doi.org/10.21003/ea>  
<http://www.soskin.info/ea/>

Volume 176 Issue (3-4) 2019

Citation information:

Lentner, Cs., Vasa, L., Kolozsi, P. P., & Zéman, Z. (2019). New dimensions of internal controls in banking after the GFC. *Economic Annals-XXI*, 176(3-4), 38-48. doi: <https://doi.org/10.21003/ea.V176-04>



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## New dimensions of internal controls in banking after the GFC

### Abstract

The weakness of the control function of governments and central banks was the main regulatory cause of the global financial crisis (GFC) broke out in 2007, but the suboptimal regulatory environment «corrupted» the quality of internal control and audit of banks as well. After the crisis, corporate governance issues appeared in the focus of international organizations. In this paper, we present the relevant international recommendations aimed at improvement of the weak corporate governance practices of the banking sector. Based on the comparison of pre- and post-crisis internal control functionalities which are presented as a meta-analysis and a systematic review of the existing empirical researches, the authors conclude that the stricter guidelines could and can have a positive impact on banks' operations stabilizing through the strengthening of internal control practices.

**Keywords:** Internal Control; Banking Sector; Global Financial Crisis; GFC; Corporate Governance; Corporate Social Responsibility; CSR; CRM; RAR; CRD Directive; EBA; Basel Committee

**JEL Classification:** G21; G34; H12

**Acknowledgements:** This study is written as a part of support for Prof. Lentner at PADS Foundation - The National Bank of Hungary (Magyar Nemzeti Bank).

**Authors' Contribution:** Each author contributed equally to the research.

**DOI:** <https://doi.org/10.21003/ea.V176-04>

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**Нові виміри внутрішнього контролю в банках після глобальної фінансової кризи**

**Анотація.** Слабкість контрольної функції урядів і центральних банків була основною регуляторною причиною глобальної фінансової кризи (ГФК – GFC), яка вибухнула в 2007 році, але неоптимальне регуляторне середовище також погіршило якість внутрішнього контролю й аудиту банків. Після кризи питання корпоративного управління опинилися в центрі уваги міжнародних організацій. У цій роботі ми представляємо відповідні міжнародні рекомендації, спрямовані на вдосконалення слабкої практики корпоративного управління банківського сектору. На основі порівняння функцій внутрішнього контролю до та після кризи, які представлені як метааналіз і системний огляд існуючих емпіричних досліджень, автори роблять висновок, що більш жорсткі вказівки могли й можуть мати позитивний вплив на діяльність банків через посилення стабілізуючої практики внутрішнього контролю.

**Ключові слова:** внутрішній контроль; банківський сектор; глобальна фінансова криза; корпоративне управління; корпоративна соціальна відповідальність; КСВ; ЄБА.

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**Новые измерения внутреннего контроля в банках после глобального финансового кризиса**

**Анотація.** Слабость контрольной функции правительств и центральных банков была основной регуляторной причиной глобального финансового кризиса (ГФК – GFC), который разразился в 2007 году, но неоптимальная регуляторная среда также ухудшила качество внутреннего контроля и аудита банков. После кризиса вопросы корпоративного управления оказались в центре внимания международных организаций. В этой работе мы представляем соответствующие международные рекомендации, направленные на совершенствование слабой практики корпоративного управления банковского сектора. На основе сравнения функций внутреннего контроля до и после кризиса, которые представлены как метаанализ и системный обзор существующих эмпирических исследований, авторы делают вывод, что более жесткие указания могли и могут иметь положительное влияние на деятельность банков усиливая стабилизирующие практики внутреннего контроля.

**Ключевые слова:** внутренний контроль; банковский сектор; глобальный финансовый кризис; корпоративное управление; корпоративная социальная ответственность; КСО; ЕБА.

**1. Introduction**

The global financial crisis erupted in 2007-2008 at the Anglo-Saxon mortgage markets, due to the globalised nature of the financial world, escalated into a global level (F. Bruni and D. T. Llewellyn 2009; Financial Crisis Inquiry Commission, 2011). There were a large number of factors underpinning the crisis, and consequences were also very complex, the most prominent of which was a decrease in the consumption of households within a general decline in the economy (Acharya & Richardson, 2009). Even if the economic downturn of 2007-2009 differed considerably from the former recessions, various key indicators (consumption, output, investment, labour market structure) projected, although not completely clearly, an expectable crisis. The market, however, failed to respond to these signs adequately (Ohanian, 2010; Ocampo, 2009).

History demonstrates that capitalist regimes undergo crises regularly but periodically (Uryszek, 2015). The most frequent crisis is the «bubble», and not necessarily its emergence but its «deflation» means the occurrence of a crisis (Kotz, 2009; Carmassi, Gros, & Stefano, 2009). The institutional form of capitalism and the social structure of accumulation promote high profits and economic expansion for a while, but eventually the contradictions - as a result of that form of capitalism - undermine its continuing operation, leading to a systemic crisis.

The crisis which started in the Anglo-Saxon mortgage markets differs considerably from the crisis of 1929-1933, with which many parallels have been drawn. While the main root cause of the latter crisis was essentially linked to the monetary policy, that of the crisis escalated by 2008 was rather over-lending and over-borrowing, providing mostly insolvent citizens with housing loans. The crisis starting from lending anomalies gives rise to a considerable extent to the responsibility of, in addition to regulatory and supervisory authorities and the households superficially assessing their

loan repayment abilities, banks, since they failed to act with due diligence in the period prior to lending and during loan monitoring activities (Zwolankowski, 2011).

The operation of internal controlling systems of banks and different monitoring and internal regulatory systems, as well as their operational efficiency and their continuous assessment are extremely important not only for banks but the entire economy. These controlling systems must also focus on measuring disequilibrium in credit and capital markets (Besanko & Kanatas, 2015).

This paper is focused on internal controls of banks. The structure of the paper is the following. After a brief literature review we define the purpose of the analysis, and then we present the results of the research, especially concerning the shortcomings of internal controls during the pre-crisis period, the changes in bank controlling methodology after the crisis and the recommendations of international organisations concerning corporate governance. The last chapter concludes and gives perspectives to further research.

## 2. Brief Literature Review

Internal controls of banks represent the effort to achieve a synergy of profitability, growth and risk-taking factors, beside optimal profitability and limited risk-taking (Andersen, 1986). Controlling is a philosophy and a mindset which may extend onto decentralised managerial areas through information management, therefore internal controls may become a management information centre. The deviation of bank controlling from standard controlling methodology is determined by the individual and complex tasks of banks' value creation processes and their products as well as by the banking transactions (payment transactions, lending, capital investment etc.). It is therefore clear that bank controlling, in view of its nature, performs management tasks for the bank as a whole by integrating two well-defined partial areas, i.e. the controlling tasks of the bank's internal operation and the services. This integration can only be achieved by connecting controlling subsystems functioning within the bank's organisation, i.e. cost controlling, profit controlling, financial controlling, planning, plan-fact deviation analysis and information provision functions. Consequently, the orientation of bank controlling is twofold. One comprises all the controlling tasks that guarantee the bank's internal operational security, and the other consists of customer controlling tasks between the bank and its clientele (Kalmár, Zéman, & Lukács, 2015).

Efficiently and properly functioning internal controls are one of the most important means of ensuring compliance with the accounting principle of the bank's operation. Within the corporations, more and more emphasis is put on internal performance pressure, since market and other opportunities for additional funding have become uncertain amidst the crisis and budgetary bottlenecks. In relation to bank controlling, several regulations must be mentioned which affect the operation of internal controls. Since commercial banks operate in the form of profit-oriented firms, they must comply with the changes in various accounting principles. In an internationally extended global competition, one of the fundamental key factors of the long-term viability of companies is their competitiveness. According to a theoretical approach, this means the prevalence of the going concern basis of accounting, with which these organisations also contribute to economic expansion, because long-term viability is an initial condition. The continuous development of intra-company controlling mechanisms allows companies to maintain continuous changes in the set of criteria and to adapt to changes (essentially with the appearance of the International Financial Reporting Standards).

Credit institutions and banks operate in a stringent regulatory environment. The regulation persisting after the economic crisis is largely different from that of a balanced financial and economic era. Since public confidence in financial institutions and markets started to decrease rapidly after 2007, policy-makers had to review their role played in the global economic turmoil. In response to the financial crisis emerging in 2007-2008, extensive legislative initiatives were undertaken in many jurisdictions, most notably in the US and the EU, as well as on international level. This was often accompanied by a revamping of existing institutions, such as the Basel Committee on Banking Supervision (BCBS), or the introduction of new organisations, such as the Financial Stability Board (Chatzistavrou, Katsikas, & Tirkides, 2013; Lentner, 2016).

## 3. Purpose

The purpose of the paper is to examine the main pillars of the internal control and audit systems of banks, the evolution of regulatory methods and to present the relevant international recommendations, whose main objective is to correct the weak or, in many cases, superficial corporate

governance practices of the banking sector. Our paper also presents a meta-analysis and a systematic review of the relevant researches on how internal control practices are realized, executed in banks. Our study is focused on the general framework, the main pillars of the internal control system of banks, which means that we do evaluate essentially the general trends instead of the practice of individual banks.

## 4. Results

### *Shortcomings of external and internal controls during the pre-crisis period*

The task of the banking sector is, in addition to reducing costs and allocating capital, to manage economic risks in some way, and ensure the stability of the economy with this risk management. One of the visible signs of the global economic crisis was the fact that banks sustained enormous losses, which could be regarded as the spill-over of the crisis of the real economy, but ultimately it was about financial enterprises which did not adequately lent the money entrusted to them, that is they failed to complete their risk management tasks properly or assess repayment risks correctly. This kind of profit-oriented mindset contributed to the collapse of the global economy. Excessive lending, countries ending up in the debt trap, corporate indebtedness and over-lending of households exceeding their creditworthiness are interrelated and consequential phenomena.

Before the crisis, low levels of financial literacy on the consumers' side, and the increased complexity of financial products on the financial services providers' side led to many consumers feeling that they had been abused or misled, which was actually the case in many instances. Apart from that, the activity of unregulated or inadequately controlled financial service providers considering short-term economic performance only increased the risk that borrowers became victims of abuse or fraud (OECD, 2011).

Indebtedness is a particularly severe socio-economic problem. In addition to a continuous increase of government debt, the shortfall of primary revenues and income not covering the spending of local authorities, and households in particular, appears. In order to bridge this gap, intensive bank lending and then, due to missed payments, continuous and permanent indebtedness appears. The direct causes of the global economic crisis were the deficiencies of mortgage regulations and their security procedures and the malfunctions and the deregulation of over-the-counter derivatives transactions and the shadow banking system. Non-interventionism appears on a systemic level in the operation of governments and supervisory authorities pursuing neo-liberal ideas.

Regulation before the crisis did not ensure the fundamental principles guaranteeing the security and stability of the financial system which would have been required for avoiding the crisis. Financial regulation should have been targeted, rule-based, and dynamic. The globalisation of financial markets manifested itself in an increasing degree and a higher level of interconnectedness and similarity of financial institutions. As a result, the implementation of a universally applicable financial regulation became more difficult, and it still is.

In the homeland of the global financial crisis, the U.S., the rapid expansion of subprime and Alt-A loans primarily concentrated around the period from 2004 to 2006. This is clearly demonstrated by the fact that the combined share of subprime and Alt-A loans in newly issued loans increased to 40 per cent in 2006 from 10 per cent in 2003. In this period, due to a continuous rise of real estate prices in the U.S., such borrowers could take out loans that were risky in terms of income or repayment terms and conditions. Both borrowers and lenders were confident that capital gains made by a further increase in real estate prices would ensure repayment. As interest rates had been increasing continuously after the end of 2003, it became increasingly difficult for a group of subprime borrowers to take out loans, therefore lenders gradually started to relax loan terms and conditions. Due to less stringent standards, people obtained more and more loans, with an own contribution of less than 10 per cent, without an appropriate income certificate, and, in the initial phase, within the framework of loan profiles providing a low repayment burden and negative amortisation. This is excellently illustrated by the example that the share of variable-rate mortgage loans, ensuring a low interest rate for two years in general, had reached 50 per cent in the subprime category by 2006 (Nagy & Szabó, 2008). The volume of these high-risk loans should have been curbed by the control functions of financial institutions. This did not happen or just to a very small extent, since the appetite for profit and the short-term thinking of these institutions overrode the very high future risks anticipated by control functions.

### ***Changes in bank controlling after the GFC***

Following the global financial crisis, financial management controls and internal controls have become more valuable, because of the growing non-performing loan portfolios, on the one hand, and the worsening of the general macroeconomic environment, on the other hand. For that reason the previously used control methodology and the importance of system components have changed since the crisis (CIMA, 2016; Lintner & Lincoln, 2016; Malmi & Brown, 2008).

An important element of the change was that before the crisis the focus was essentially on short and medium term planning, which was replaced and completed by long term planning and an increasing focus on capital management planning. Concerning financial control, budget planning used to be linked to 12-month period, using traditional budgeting methods with a financial Key Performance Indicator (KPI) measure set. New budgeting methodologies (Beyond Budgeting) had been adapted, with 1-3 years budgeting practice, and an increased focus on ROE, liquidity, capital ratios and cost/profit measures.

Before the crisis, the main focus was put on governance and organization structure, policies and procedures, while after the GFC, administrative control was extended to comprehensive risk controls, governance and compliance management as well, with improved internal audit processes. Concerning the issues of corporate culture, the main function was the identification of fundamental values on which banks operate, but after the crisis that was extended to support embedding of values in the organization through hiring practices, social events and mentoring programs for managers and employees. In course of this, the design and control of reward and compensation schemes, especially concerning the remuneration of top-managers causing moral hazard problems in the past, was modified. In information management, the main focus moved from internal reporting with information collecting functions to internal and external reporting with central information distribution functions, with new tools such as data warehouses and integrated information systems. (CIMA, 2016; Lintner & Lincoln, 2016; Zeman, Kalmar & Lentner, 2018).

International bank consolidation is an increasingly complex response given to the global financial crisis. During this consolidation, the micro-procedural and macro-procedural regulation of banks should be highlighted, and the role of various control systems have also acquired a new significance (M. Kowalik, T. Davig, Ch. S. Morris, and K. Regehr (2015) - US banking; The Bank of Spain (2017) - Spanish banking; M. S. Mohanty (2014) - pan-African banking).

The development of currently operating control systems lie in mapping and integrating the procedures applied during banking activities. The development of information technology makes it possible to run complex algorithms on extensive databases, which, in addition to a number of other benefits, facilitates more accurate forecasting, income and cost planning as well as more reasonable cost management. The various risk assessment («scoring») models, which focus on the risks of customers becoming insolvent, are worth highlighting. Although the primary objective of these methods is related to the given banking function, both the methodology and the results may improve the planning and analysis functions of the management controlling system via more accurate forecasting; in addition, they contribute to banks' more efficient cost management.

In that context it is also important to focus on CSR and its changes after bank consolidation processes. CSR means a combination of behaviours and ideas which conveys and asserts environmental, social and human interests and value beyond internal corporate viewpoints in relation to sustainable development (the fundamental principle of a going concern in accounting) and business ethics. It includes the transparency of the given organisation, its compliance with ethical norms, and an as extensive as possible consideration of viewpoints of those seeking information inside or outside the company in connection with it.

A bank's CSR activity may have several focal points. It may focus on internal and external stakeholders, may be directly related to the bank's activity or it may be independent from both. Providing financial and banking information adjusted to the knowledge level of customers taking out loans is a CSR activity directly related to the banking activity, which may reduce the rate of bad debt, and, at the same time, creates some stability in the customers' financial management. It matters who is in the focus of the bank's CSR activity, but it is also important how much weight the given activity has in the life of the bank and the stakeholders.

Beyond the classical stakeholder models, the CSR of the banking sector manifests also in a practical form of refraining from causing market disturbances by presenting a fictitious economic situation, so that funds should not be redeployed from public reserves to consolidate financial institutions. The financial crisis requires the definition of a new type of CSR assumed by banking

companies and financial institutions, in addition to traditional corporate social responsibility. In addition to traditional CSR approaches, the financial institutions' responsibility for customers, enterprises, families and national budgets is becoming increasingly important. A great emphasis should be placed on morals by financial institutions. From the viewpoint of economics and finance, banks operating without a solid moral foundation, pose a hazard to the economy and society (Sh. C. Dow, 2010). To sum it up, banks as the main institutions ensuring the stability of the national economy and the international financial sector can do their best in terms of corporate social responsibility with calculable operations, the application of crediting techniques to retain their customers in the long term and conveying financial knowledge. Thus, the partial responsibility-taking dimension of the banking sector focussing on sub-parts is replaced by taking complex responsibility for the social, the national economic and even the global economic space simultaneously (Lentner, Szegedi & Tatay, 2015). In respect of risk management and responsibility-taking, the corporate sector is of major importance; in particular, attention should be focussed on changing the practices of lending to small and medium-sized enterprises. Internal controls and scoring systems have changed also in this sector after the global economic crisis (Belás, Dvorsky, Kubálek & Smreka, 2018).

The changes in and the alteration of the principles of internal controls were one of the most important and most effective tools during consolidation after the crisis. During the consolidation, financial institutions changed the approach of their lending business, partly by themselves, partly under external pressure. In the background of this shift, there is a significant transformation in the European and the U.S. banking sector. The development of risk assessment methodologies and tools, and the regulatory systems established in the consolidation period of the crisis, to which various structural changes connected, made financial institutions pay growing attention to assessing and managing their credit risks, and the capital adequacy ratio related to these risks. Having taken these developments into consideration, and within the framework of bank consolidation, the Basel Committee on Banking Supervision revised the framework system that constitutes the fundamentals of the regulation pertaining to banks' capital adequacy. Summing up the events of recent years, it can be established that the Basel II regulation placed the emphasis on microprudential issues and enhanced the procyclical nature of banking practices in several aspects. It did not manage effectively system-level macroprudential risks. Another important fact is that Basel II provided banks with a relatively flexible system, in which they could establish on their own the nature and extent of risks they faced, enhancing market risk factors of financial organisations. The Basel Committee on Banking Supervision made its decision on Basel III as a set of regulations pertaining to capital requirements in September 2010. The goal of this new regulation was to strengthen the microprudential level, consequently, to improve banks' resilience to shocks or stress factors, furthermore, it introduced an anticyclical buffer which can be applied during crises, and also prescribes compliance with a net stable funding ratio and a liquidity coverage ratio and contain macroprudential reforms to manage systemic risks. It will also be decisive how particular countries will adopt and submit to the requirements of Basel III. In the U.S. for example, an implementation of the Dodd-Frank Act, adopted in 2010, is applied in the operation of financial institutions (EBIC, 2013). Stricter capital requirements, liquidity requirements and additional rules imposed on a systemic level on banks are likely to make the banking system more solid in the long term.

It is important to mention the types and changes of different internal credit rating systems, and their directions. Credit rating principles can be classified either on the basis of the principle of rating to standard or on the basis of internal banking operational systems. The former one is a pre-determined weighting scoring system, while the latter is based on banks' internal operational evaluation. In Europe, financial institutions can use internal methods since 2007. Theoretically, internal methods assess risks more effectively, because, as opposed to a standard method applied by all banks in a uniform manner, it can take many individual specifications into account. In practice, there is ample proof that banks' internal rating systems are not infallible in all cases (Treacy & Carey, 2000). As it has been set out above, over-crediting by financial institutions and serving high-risk customers was one of the causes of the global economic crisis arisen in 2007-2008. Various organisations with banking regulatory rights attempt to avoid this with the help of monitoring systems and rules, so that it should not occur in this form in the future. Banks also have a credit risk management (CRM) function, the aim of which is to minimise risks and to maximise risk-adjusted return (RAR) on the collateral of credit facilities. The task of CRM is to establish the risk profile with the help of the borrower's assessment and scorecards (Zahra, 2017) as it is presented in Figure 1.

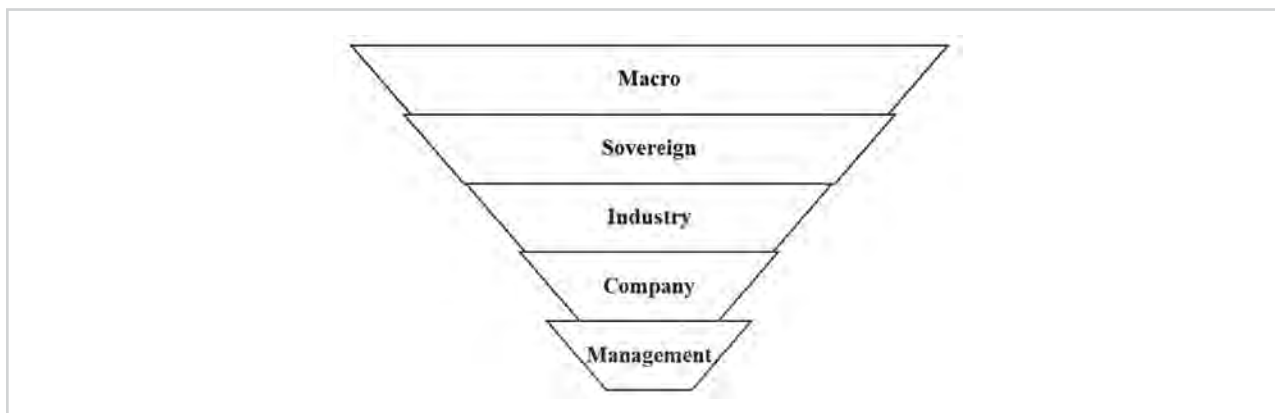


Figure 1:  
**Credit Risk Assessment Funnel**  
Source: Zahra (2017)

After the global financial crisis the continuous control of banks has become important to make it visible how ready they are for the next recession. Scenario analysis and stress testing are risk management tools that test the capability of different financial institutions to remain standing in the case of another financial recession. These tests examine and analyse the banks' capabilities and tools to respond to a financial shock, and their overall efficiency with which they would be able to manage the arising crisis.

### ***Corporate governance recommendations of international organisations***

In the years following the crisis, corporate governance issues came also in the focus of international organizations. The main purpose was to correct the weak or, in many cases, superficial corporate governance practices of institutions, which the global financial crisis clearly highlighted. Even if we accept that the applicability of these guidelines and recommendations can be problematic - see the feedback of banks and professional associations on the public consultation of the EBA guidelines in European Banking Authority (2017), we can assume that these new regulations played a significant role in determining the direction in which the internal controls and governance system of banks developed after the GFC.

Adequate corporate governance is of crucial importance for the operation of both individual institutions and the banking system as a whole. J. I. Lee (2015) confirmed that the internal control system and the professional experience of the employees contribute to the profitability of investments and the level of returns in the financial sector of Korea. Through the Swedish example, Liff and Wahlstrom (2018) presented banks' internal control and risk management systems and their impact on bank's operation, concluding that even if banks developed different systems, these frameworks had a significant impact on the financial performance of individual banks.

After the global financial crisis, the rules of corporate governance have become more vigorous, also in the sense that more international organisations have issued stricter directives or recommendations. Without being exhaustive, the following ones can be regarded as the most important.

#### **• CRD Directive**

Within the CRD Directive 2013/36/EU, effective since 2014, primarily Articles 74 to 96 belong to here, which focus on the issues about internal governance, recovery plans, remuneration policies, risk management requirements, corporate governance systems and the composition of the management body.

Article 74 of the general principles of the directive focusses on the topic of internal governance, as well as recovery and resolution plans. The directive lays down that institutions shall have robust governance arrangements, which include a clear organisational structure with well-defined, transparent and consistent lines of responsibility, effective processes to identify, manage, monitor and report the risks they are or might be exposed to, adequate internal control mechanisms, including sound administration and accounting procedures, and remuneration policies and practices that are consistent with and promote sound and effective risk management. The arrangements, processes and mechanisms shall be comprehensive and proportionate to the nature, scale and complexity of the risks inherent in the business model and the institution's activities. Article 75 focusses on the

oversight of remuneration policies. Subsection 2 of the directive regulates the technical criteria concerning the organisation and treatment of risks, and subsection 3 sets out the requirements on governance (including governance arrangements, the management body and remuneration policies).

#### • **Recommendations of the Basel Committee**

The Basel recommendation - called «Corporate governance principles for banks» - sets out that effective corporate governance is critical to the proper functioning of the banking sector and the economy. Banks perform a crucial role in national economies as funds are intermediated from depositors to borrowers in the banking system. The proper functioning of banks is a key to financial stability; if the corporate governance model of banks is wrong, problems occurring at specific banks can be transmitted across the economy as a whole. The primary purpose of corporate governance - which is interpreted by BIS as the allocation of tasks and responsibilities - should be, according to BIS, safeguarding stakeholders' interest (1) in conformity with public interest and (2) on a sustainable basis. Among stakeholders, BIS highlights, particularly with respect to retail banks, shareholders' interest would be secondary to depositors' interest.

The Basel Committee sets out 13 principles, which concern the following areas:

1. Board's overall responsibilities.
2. Board qualifications and composition.
3. Board's own structure and practices.
4. Senior management.
5. Governance of group structures.
6. Risk management function.
7. Risk identification, monitoring and controlling.
8. Risk communication.
9. Compliance.
10. Internal audit.
11. Compensation.
12. Disclosure and transparency.
13. The role of supervisors.

#### • **EBA recommendations**

The recommendation of the EBA is in part a further developed version of the Basel Committee's recommendation. EBA confirms the institutions' requirements on corporate governance, and in particular call attention to:

- the responsibility of management bodies in the quality of governance;
- the significance of a robust control and supervisory function, potentially challenging the decision processes of the management;
- the importance of adequate risk management strategies and frameworks.

According to EBA, corporate governance concerns and includes all standards and principles concerned with setting an institution's objectives, strategies and risk management framework. It includes how its business is organised; how responsibilities and authority are allocated; how information is conveyed within the company; and how the internal control framework is implemented, including accounting aspects and remuneration policies.

EBA's recommendation has been implemented by several national central banks in their own recommendations. For example, Recommendation No. 5/2016 (VI.06) of the Central Bank of Hungary on the establishment of internal lines of defense, their operation, and the management and control functions of financial institutions is such an implementation, which lays down as a general principle that financial institutions shall develop and operate their internal lines of defense and the specific elements forming their parts in compliance with relevant legislation, in line with the nature of the applied business model, and the characteristic features - including characteristics inherent in the organisational form - the extent, the complexity and the risks of the service providing activities pursued by the institution/group. This applies to internal policies, regulations, organisational solutions required by the Recommendation, as well as implemented practices and procedures.

## **5. Conclusions and Perspectives of Further Research**

The global financial crisis started in 2007-2008 was a collapse which could have been at least mitigated by an appropriate regulatory environment. The real question is, though, whether the next



credit crisis, which is threatening the global economy again, can be avoided. Avoidance and prevention are greatly promoted by the improving effectiveness or bank controlling tools and methods, and their continuous development, and consumer protection rules due to external controls. It is important to highlight the changes and a tightening of controlling principles pertaining to the risk classification of borrowers.

It is a definitely positive development that on the basis of bank data - although there might be mounting tensions and imbalances both in the balance sheets of individual banks and the global banking system - credit institutions have taken a more balanced and more sustainable course after the crisis. According to the latest global report of McKinsey (2018), the financial system moved «from the brink of chaos to a solid ground with a higher level of safety». In numerical terms, this move means the following:

- The global Tier 1 capital ratio increased from 9.8 percent in 2007 to 13.2 percent in 2017.
- The ratio of tangible equity to tangible assets has increased from 4.6 percent in 2010 to 6.2 percent in 2017.
- Global banking industry market capitalization increased from \$5.8 trillion in 2010 to \$8.5 trillion in 2017.
- The return on equity of the global banking system increased to a level of 15 to 18 per cent in the years preceding the crisis, which posed a serious sustainability hazard. Naturally, the financial crisis caused a significant decrease in this respect, but, at the same time, the fact that the return rate has been steadily in the 8 to 10 per cent zone for years after the crisis ended implies a growing stability of processes and banks' operation, that is, since 2010 either unsustainably high or low values indicating insufficient return are not typical, in which a more robust controlling activity could have played a role.

Although internal controls are obviously helpful in avoiding a credit crisis, the signs of indebtedness have appeared again in the economy, because economic growth driven by higher consumption has been present in the 10 years since the crisis, but there are limiting factors and sets of rules which produce a more mixed picture. Today, an excessive outflow of credit is already limited and curbed by several regulatory elements. The application of capital requirements of financial institutions as a macroprudential policy measure has been taking on increasing prominence as policy-makers wish to reduce procyclicality and leverage by these means (Yellen, 2010).

Several possible regulatory instruments are used effectively in order to limit an excessive outflow of retail loans. International experience demonstrates that a combined application of regulations

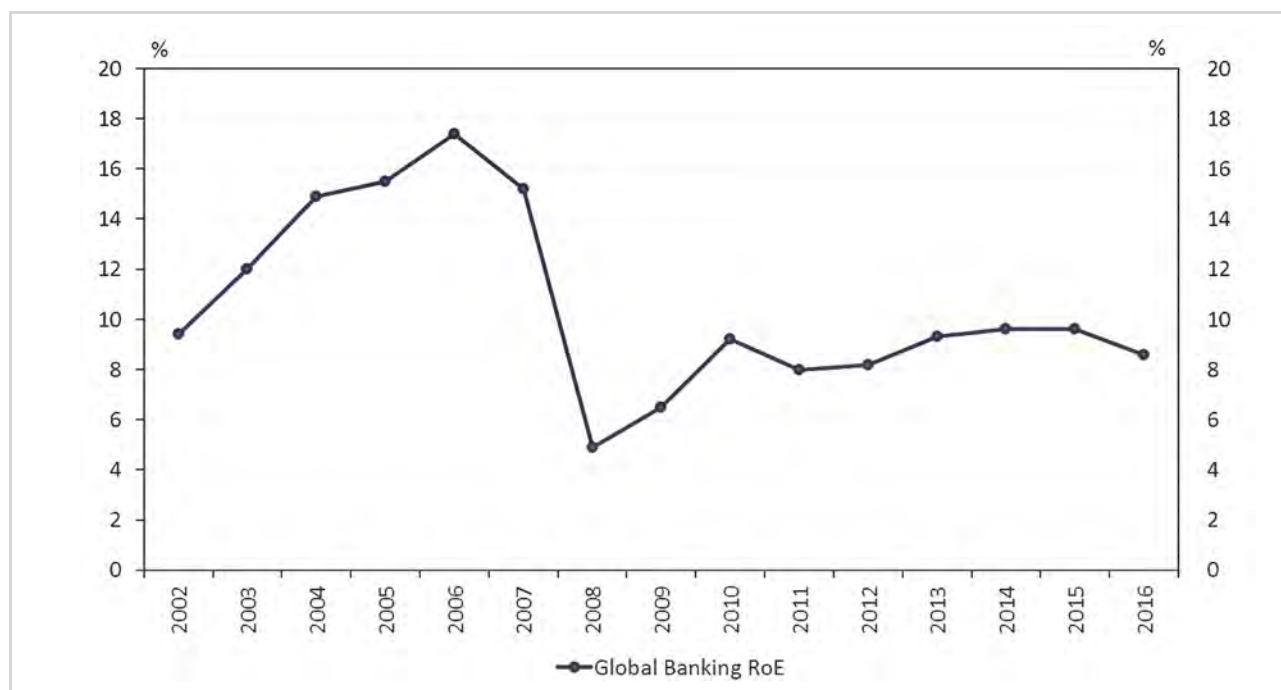


Figure 2:  
Return on equity of the global banking system  
Source: McKinsey, 2017

pertaining to the ratios of monthly instalments to monthly income (Payment to Income - PTI) and maximum Loan to Value (LTV) ratios is the most effective. The main reason for this is that these limits affect all transactions indirectly and in an administrative manner (as opposed to capital buffers applied as indirect incentives) and affect the entire financial intermediary system, thus cannot be avoided either by cross-border financial services or lending via branch offices (Baracsi, Grosz, & Fáykiss, 2015). Parallel with that regulatory instruments supporting the competition between banks must be nurtured during a boom, but regulations targeted to intensify competition could be potentially relaxed during an economic downturn or financial crisis (A. R. Admati, 2019).

Effective auditing and monitoring tools before lending, with the help of which financial institutions become able to avoid over-lending to clients with a high risk profile, are also worth highlighting. It becomes possible to stabilise the operation of banks and financial institutions through the positive effects of credit monitoring and a strictly regulated environment. The fact that several international organisations have adopted recommendations after the crisis to promote an adequate quality of banks' governance also contributes to a stricter operation of banks. In this respect, the CRD Directive, and the recommendations of the Basel Committee and EBA have been of crucial importance.

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Received 20.10.2018

Received in revised form 20.03.2019

Accepted 25.03.2019

Available online 20.08.2019