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A moving target – the first pillar of the capital requirements directive

In the summer of 2006, the Capital Requirements Directive was approved by the European Union based on the Basel recommendations, which determines, among others, such actions, rules and guidelines for the risk management and capital generation of the credit institutions that are under the effect of the accord which are better suited to the dynamically changing operating environment. As compared to the preceding regulation, the Capital Requirements Directive contains significant changes with regard to the management of lending risks. The various kinds of methodologies allow the institutions of various sizes and profiles to choose the methodology that best suits their activities and sizes. Getting prepared and applying the methods are important tasks, however, the considerable decrease in the capital requirements, which arises from the sophisticated nature of the method, encourages the shifting of the institutions in this direction. Operating risks are a new element of the regulation, which is quite difficult for the institutions to tackle. The primary reason for this is explained by the characteristic features of operating risks. It is a relevant question how those events which occur with a high frequency but incur low losses and those events which occur only seldom but involve serious consequences can be detected, forecast and

with which tools they can be managed. Since the banks are now only taking the first steps in the management of operating risks, it is impossible to give a clear answer to this question but it is obvious that if we wish to keep the risks within a controllable limit, we should apply new methods besides those that have been well-proven and well-established to date, and a kind of new approach will also be necessary.

In our article, we will examine the issues related to the management and regulation of these risks by also taking the circumstances of the Hungarian financial market into account.

When money appeared in the world, an increasingly dynamic development need arose in this respect. The initial simple banks and bank-like institutions, which performed the most elementary task of money exchange, gradually came to be replaced by increasingly advanced financial institutions that were able to satisfy more and more needs. All this has grown to such an extent by now which had once been inconceivable. By now, the credit institutions, banks and financial institutions perform such versatile and high-risk tasks that comprehensive and efficient regulation requires a high level of attention by the legislators. It is very important because, for the rea-

sions defined above, the measurement and management of risks are indispensable for the implementation and maintenance of a secure money and bank market. As the supervisory authorities of the individual countries are also the depositaries of this, the supervisory authorities of most of the countries need a changed attitude with regard to their practices, and they need to master a risk-oriented approach.

The other perspective has also received a very important role, especially in the past few decades and years. This other approach means the strengthening of uniform regulation. An increasing number of countries endeavor to join the institutions and organizations that develop uniform regulations, as this is sort of required by a world and its processes that are more and more liberal and offer an ever increasing range of opportunities. Thus, globalization also demonstrates itself in the area of financial organizations, and it leads these institutions to the path of standardization.

The financial sector is one of the cornerstones of the economy, as this is the sector that provides the basis for the operation of the other sectors as well, since money is one of the key drivers, the starting point for the financing of the projects. Domestic corporate financing typically means funding provided by credit institutions, which system rests on continental bases. This is why the role and stable operation of the credit institutions are especially important. Since the capital market is still not a key player in the overall financing of our country, the financing role of the credit institutions is cardinal. Stable operations and reliability are not only classically in the interests of the owners and the depositors but are also a main concern for the debtors, in other words, the borrowers, as far as a lasting partnership between them and the bank is concerned. However, a financial institution whose operations are stable and well-established may be more in demand in the credit market as well, which will

also push the role of prudent operations into the foreground, besides the key role of profit interests. It is exactly this “conflict of interests” that makes it necessary that besides self-regulation and corporate governance, the statutory regulation should also be well-adjusted but one that sets limits at the same time.

The Basel Committee on Banking Supervision, i.e. BCBS¹, whose name is associated with the *Basel II Capital Accord*, which was finalized in 2004 and attacked a lot of times due to the financial crisis, plays a key role in regulating the credit institutions. The accord contains significant changes as compared to its predecessor the Basel I. It allows the banks greater space to maneuver in determining their capital requirements, through the applicability of their own experience, their internal models and methods. *The point of this accord is that it aims to encourage the financial institutions to use methods that adjust to the risks more flexibly*, to ensure that the sensitivity of their risk management systems increases, and to take into account the risks of the activities that they perform to a higher extent than now, as well as comprehensively.

Basel II is built on the following three pillars:

- minimum capital requirement related to the credit, market and operating risks,
- control by the supervisory authority,
- the disciplinary power of the market.

The institutions have to create capital to cover for the risks defined under the *first pillar*, i.e. not only for the credit and market risks but also for the operating risks. The banks may choose from the methods of determining their capital requirements in accordance with their own risk measurement and management profiles and levels of development, and/or, if certain predefined criteria are met, they may apply their own models for determining risk exposures and the related capital levels. It is a common feature of the methods that they reflect the risks more credibly than before, while the

difference lies in the extent of standardization; i.e. which risk parameters (probability of default, loss rate, etc.) the bank is free to define (on the basis of validated measurement and estimation methods) and which are predefined. The *second pillar* of the new capital accord disposes of the extension of the competence and responsibility of the supervisory authorities. The supervisory authorities have to regularly supervise the capital adequacy calculation processes and risk positions of the banks, as well as the proportions of the calculated capital requirement to the undertaken risks. The third pillar is aimed at strengthening the market discipline, as well as the moderation of the asymmetric level of information provided to the market players. With a view to achieving these goals, the scope of information that is to be publicly disclosed has widened and the criteria of the disclosure obligation have also changed. *The contents of the three pillars, which mutually strengthen each other, encourage the institutions to ensure more transparent and secure operations, and to apply more advanced risk management methods, thus allowing more efficient supervision than before.*

It was on the basis of the Basel rules that the Capital Requirements Directive (hereinafter referred to as: CRD)², which was approved in 2006, was developed, the contents of which are effective in all the member states of the EU. The rules have partially been in effect since January 2008 and in the case of certain applications, they took effect in January 2009. The new rules are applied by the United States only to a limited extent: they will only be implemented by the largest institutions and only the most advanced methods will be applied there from April 1, 2010, according to the expectations, in a three-year period.

In the next sections, we will focus on the first pillar of the capital requirements directive. Since the regulation contains no substantial changes with regard to the market risks, the character-

istic features of managing lending and operating risks will be examined in detail.³

LENDING RISKS

Lending risks are fundamental risks that are incurred during the activities of credit institutions, they are a basic element in their operations. The point of lending risks can also be determined as the chance of the partner who is in an official lending relationship with the credit institution failing to meet its payment obligations by the deadline. Thus, lending risks arise from the loans and positions that exist at the financial institutions. In the past period, the numbers and types of financial products and instruments have considerably changed, and their individual and aggregate values have significantly increased. Through this, the approach to, and the measurement of lending risks necessarily had to change both in their structures and in their elements, in adjustment to this.

The efficient definition and management of lending risks are a critical element in the long-term success of a financial institution. The fundamental purpose of handling lending risks is to maximize the risk-adjusted recovery rate of a credit institution in such a way that the exposure to lending risks is kept within acceptable limits.

The approach to lending risks in the recent past

The great disadvantage of earlier capital regulation lay in that the capital adequacy ratio failed to reflect the risk profiles arising from the activities, business and clientele of the credit institution in question. A few typified categories and divisions were associated with a rough risk value and the actual risk with regard

to the clients and the transactions could not appear. This most often had a negative effect on the financial institutions, since a lot higher risk level was determined than the actual value could have been. At the same time, however, we can mention counter-examples as well, since the negative features of some transactions and clients were not reflected in the earlier risk weights. On the institutional level, such an example may be that of a credit institution which typically finances agricultural activities, since the credit allocation structure of the institution is not diversified, thus it carries a higher risk. This is why the conclusion that risks should never exclusively be measured by the individual loans and transactions but *they should also be considered in their entirety, in the overall portfolio* is important. What is more, earlier not even the country risk reflected the real risk level adequately, since an approach that defines whether or not a certain country is a member of the OECD has not been appropriate or sufficient for a long time by now. We have witnessed for several years that the risk ratings of the individual countries by the credit rating agencies and the changes thereof are based on several hundred characteristic features, indicators and events, and they ensure appropriate guidance and divisions for the financiers of the companies that are rated.

Measurement of lending risks on the basis of the new opportunities

Lending risk is not a new risk category but it has undergone substantial changes from both the aspects of approach and calculation. The use of much more sensitive models has become possible, thus the institutions are able to determine the extent of the risk much more accurately on the basis of their activities, portfolios, sizes and the correlations of the latter aspects, as consequence of which they can define the

value of the capital to be created much more precisely as well.

As a result of lending risks, *the obligation to create a minimum amount of guarantee capital gives the core element of the new capital regulation principles*. This is embodied in two main lines in the two key methods of calculation, as well as in that, on the basis of the risk and rating categories that belong to the method in question, which are to be applied as categories, sharp dividing lines appear with regard to the exposures as well (divisions according to institutions, conditions and characteristic features). Earlier, the risk reduction approach of risk management could only be enforced to an extraordinarily limited extent with regard to capital calculation. The ability to reduce lending risks is treated as a high priority by the new capital calculation rules and accordingly, they are also placed in the foreground. In the new regulation,

- on the one hand, adequacy principles to be taken over were defined (which parameters the tool aimed at reducing lending risks should meet in order for the financial institution to be able to apply it),
- on the other hand, the potential tools of reducing lending risks are also represented in separation and regulated in detail.

Since the calculation methods are extraordinarily different from each other, the moderation of lending risks also appears in adjustment to these methods, in a sophisticated manner and highlighting the differences.

Calculation methodologies at the individual institutions

In the case of lending risks, depending on the size of the financial institution, the complexity of its activities and the type of the risks that it undertakes, it is basically *possible to apply two types of calculation methods*. The simpler one is what we call the standard method, which, also

arising from its simplicity, is relatively close to the earlier methodology in its primary approach (more strictly defined categories and divisions) but it shows substantial differences as to the details. *As the more complex method, the method based on internal rating* will also be introduced. For the application of the latter method, a complex mathematical model should be developed, for which the availability of the time series with regard to actual data of the individual institutions is also vital.

The effect that the changes in the regulations exert on the Hungarian financial institutions can be determined only in light of examining which methods the individual institutions use for the calculation of their capital requirements for lending risks. It appears as a new risk that operating risks and the capital requirement arising as consequence of these basically increase the capital requirement of the financial institution in question. As a result of this, the institutions are fully encouraged to apply as advanced methods as they possibly can for the definition of lending risks. The situation is that the more advanced and more complex method is applied by an institution, the more accurately the extent of the risk can be determined, and the creation of a lower capital requirement will become possible.

However, *the credit institutions that are smaller* in the size and value of their activities *apply the standard method* for the definition of their lending risks. There are two fundamental reasons for this. On the one hand, their portfolio does not meet those requirements which are expected by the methodology based on internal rating, according to which

- during using the method, the institution takes into account all such methods, processes, controls, data collections, data management and IT systems which ensure the measurement of lending risks, as well as the classification of the exposures into rating categories or pools;

- the client rating scale should contain at least seven categories with regard to the performing clients and one category for the defaulting clients.

On the other hand, a larger scale IT development and its regular maintenance, expansion and updating would not be more favorable for them from a cost-efficiency aspect either, as the potential reduction in the capital requirement could not be considerable. In view of these, these financial institutions should definitely reckon with an increase in their capital requirement. The initial cost factors have shown an even higher increase, since preparation (developments, data management modifications and training) incurs significant start-up costs but this is not a lasting disadvantage. Of course, we cannot mention the institutions that apply the standard method without indicating the novelty of the method, and in the case of some institutions, their advantages. The situation is that the financial institutions that typically serve consumer clients are faced with a significant decrease in the capital requirement as compared to the amounts required by the earlier regulation, as the weighting of consumer and retail clients will decrease to 75 percent from the earlier 100 percent.

However, we should not disregard either that *the standard method greatly relies on the credit rating categories of the external credit rating agencies*. This is an important element of the expectations of a changing world but only if we start out from the nature of the rule, it should be an expectation that an independent authority should check which ratings can be applied. As consequence of this, the regulation assigns an important and serious role to the national supervisory authorities, since the credit rating agencies that they recognize will be the ones that are free to operate. Nevertheless, even the individual rating categories should be based on a uniform basis according to standard principles, so the national supervisory authori-

ties (and regulators) have important responsibilities in this respect as well.

The application of the ratings defined by the external credit rating agencies carries inherent problems. This rating requirement incurs supplementary costs for the counterparties, and the deliverables, i.e. the ratings of the credit rating agencies should get recognized in as wide a scope as possible. The risks and credibility of the credit rating agencies should also be discussed. This was an especially critical issue at the time of the crisis, as when the financial crisis was analyzed, the roles and responsibilities of the credit rating agencies came up as an issue in several aspects. This is why the presence and the role of the national supervisory authorities are important, which gain significance in prevention as well, besides control and licensing in this case, as besides the general applicability of the external credit rating agencies, Pillar 2, i. e. the supervisory review gives further opportunities for correction.

To sum up: the definition of lending risks by relying on the standard method is a stride forward as compared to the 1988 Basel regulation, as a more complex level of defining risk levels and capital requirements is thus ensured for the financial institutions. The standard method is more accurate and is better adjusted to the changing world but it means a lower level of development and operating costs for the institutions as compared to the methodology based on internal rating, however, the lower level of methodological sophistication also results in slightly higher capital requirements.

During the application of *the method based on internal ratings*, the institution's own internal data and knowledge allow the credit institution to define, as accurately as possible, the actual risks with regard to the institution, its activities and clientele. The collection and processing of data, the development of the IT background, the development and testing of the models, as well as regular maintenance all

incur significant costs and workload. Nevertheless, the financial institutions are made interested in, and they do endeavor to get access to the application of this method as soon as possible, since a substantial and genuine decrease in the capital requirement can only be achieved by using this method.

Within the internal rating approach, we should separate the basic and the advanced sub-methods. Both sub-methods and their rating systems contain the procedures, controls, data gathering and information technology as well, since all these are indispensable for the quantitative estimation of loss, or risks. The fundamental reason for this is that both methods, as is shown by their names, are based on the internal rating and assessment of the data, and separation is demonstrated in what this extends to. The basic method of the internal rating only ensures the internal estimation of the probability of default, while the advanced method of internal rating ensures not only the value of the probability of default but also the loss given default (LGD), as well as the maturity and indirectly the value of the expected loss.

Due to the limitation of our space, we are not in the position to discuss a number of individual problems and critical remarks in detail but one general remark of criticism cannot be disregarded: seen from the aspect of the crisis of our days, it is the very basics of the methodology that are questioned. The situation is that the basis of the approach that is built on internal rating rests on historical data, which, however, is difficult to adapt to the current crisis without errors. The thing is that currently, the historical data show a more favorable picture with regard to the risks and the capital to be created on the basis of these risks but the more unfavorable indicators that will surface after recovering from the crisis will show an unjustified extent of increase in the level of risks, thus kind of demonstrating a lag in time. This is why *Mihály Erdős* and *Katalin MÉRŐ* both say that

the capital requirement that is based on the probability of default and loss given default values according to the Basel logics and one that spreads over several cycles is not suitable for covering the potential losses that are developed on the basis of the realistic assessment (Erdős – MÉRŐ, 2008).

It is again the Pillar 2 that seems to be a potential solution for the problem mentioned above, as is also pointed out by *Erika Marsi*. The incidental procyclicality of Pillar 1 (which has now come to the foreground) could be partially handled through Pillar 2 but such intention of the supervisory authorities (i.e. the application of Pillar 2 for the adjustment of procyclicality) would be made much more difficult if the regulation did not support the modification of the much too low capital requirement obligation in the case of the individual items such as mortgage exposures, in the future, with regard to Pillar 1 (Marsi, 2008).

Moderation of lending risks

The credit institutions had the opportunity to reduce their credit risks already at the time of the issuance of the Basel I recommendation of 1988 but it was only possible to a rather limited extent. The new regulation has undergone such significant changes both with regard to its principles and its details that the tools aimed at moderating lending risks can be applied in a wider spectrum and for a wider range of types. All this is only conceivable if a system of strict conditions is developed and observed with regard to the accepted tools of risk moderation. Of course, the conditions should contain not only the expectations from the tool but also, the detailed requirements from the operations and procedures followed by the institution that applies it. In the case of the standard methods and those based on internal ratings, more precisely, the basic and advanced sub-methods,

different tools aimed at reducing the lending risks are to be applied, as the definition of what is to be considered and to what extent will be very different for the various methods.

Since it is possible that in the course of determining the extent of the risk, it is directly the risk-reducing factor and its weighting that is reckoned with, instead of the basic exposure (basic liability), the critical remarks can be partly made here as well. In other words, *in the case of the standard method, the problem of the credibility of the external credit rating agencies, while in the case of the method based on internal rating, the contrast of historical data series and procyclicality may cause difficulties in determining the value of the risk-reducing factors as well*, with regard to the definition of the appropriate capital level and thus, the maintenance of stability. This means that in this approach, the function of the national supervisory authorities with respect to Pillar 2 should be assigned an important role in this approach as well.

As a critical remark, it should be mentioned that in Hungary, at the moment it is not yet possible for the financial institutions to apply all the risk-reducing factors, since the applicability of these tools is not supported by a civil law background (for example, the receivables are not publicly registered, so they cannot be taken into account either). This does not mean that these do not appear in the aspect of activities but they are to be disregarded in the definition of the capital requirement.

The role of the supervisory authority

The national authorities, and consequently, the Hungarian Financial Supervisory Authority should take important preparatory steps in order to be able to comply with the new regulation to a maximum extent, from the very day of its taking effect. As a result of the fact that the definition of the capital level was based on

sophisticated methods and at the same time, the very same models were applied at the various credit institutions against the backdrop of very different portfolios and profiles (i.e. a seemingly equivalent product shows totally different results), *the roles and responsibilities of the national supervisory authorities increased*. Since the financial institutions are obliged to create a lower level of capital in accordance with the new regulation, especially in the case of the more advanced methods, the national supervisory authorities have a significant role in ensuring that this reduction should appear on the basis of the real risks and that the stability of the institution should not decrease.

We have mentioned the role of the supervisory authorities with regard to the external rating agencies, which is extraordinarily important and carries several risks. Recognizability and acceptability on the practical level were already defined earlier on the basis of the agreement between the national supervisory authorities but the *relevant question these days is the assessment of the real acceptability and the potentially occurring uncertainties*. In general, the issue cannot be settled in such a way that the creation of supplementary capital is required by the supervisory authority as part of a supervisory review and it is difficult to judge as well which rating items are supported by incorrect ratings based on inaccurate or insufficient information (which has occurred and has been proven several times in relation to the crisis). Perhaps regulation and application will only have to face a short period of transition until the credit rating agencies are appropriately regulated and supervised and until their results are also demonstrated in real life.

Pillar 2, i.e. supervisory reviews assigned to the competence of the national supervisory authorities provides a great opportunity for adjustment with regard to the capital requirements of the institutions. This is important from the aspect of the already mentioned regu-

latory deficiencies and problems of principle (credibility of external credit rating agencies, effect of procyclicality on the applicability of historical data series, etc.) but it also carries risks. Can the supervisory authorities fully meet this expectation? It is not the level of preparation that is questioned but whether the supervisory authorities have sufficient and appropriate data for being able to determine the increased capital requirements for the institutions not only on the basis of the general framework. Consequently, the final result may perhaps be that in order to ensure stability, the risks will be outlined by a more superficial, better to say, wider framework, which would not be desirable, as the earlier principles that require modification should not be brought back. Thus, hopefully it will be everyday practice that will explore a treasury of possible solutions as appropriate as possible and such that will cause as little harm as possible.

OPERATING RISKS

The strict regulation of financial institutions is not surprising if one thinks of their role in monetary intermediation and financial transformation. Operating risks are a new element of this regulation, which, similarly to other types of risks, does not only accompany and affect the activities of the credit institutions, financial and investment firms but presents itself both in the goods and service, non-financial corporate sector and the public sector. On the statutory level, the handling and moderation of operating risks and the losses that can be put down to these risks are the strictest and developed to the most detail for the financial organizations, although to a varying level country by country. Before we start discussing the cornerstones of the regulation, we will sum up what operating risks actually mean, and what factors and risk events are covered by this category.

Operating risks in practical terms

Finding the meaning of operating risks and the definition of their elements are not a simple task, since we are talking about a high number of factors, whose occurrence is ad hoc; and certain phenomena do not even occur in some of the institutions but if an event that carries operating risks still occurs, then even significant risks may be incurred. The definition that is accepted by the financial institutions, which also appears in the laws, can be associated with the Basel Committee on Banking Supervision (BCBS). According to this definition, “operating risks are incurred as a result of inappropriate or failed internal processes, human and system errors, as well as external events.”

Any errors and problems that are related to the handling, storing of information, the IT infrastructure of the organization, as well as its communication system are to be classified under *process and system errors*, which cause interruptions in continuous and reliable, as well as secure daily operations. The probability of occurrence of such types of risk events can be minimized by the appropriate protection of the IT system and the stored data (virus protection, regular savings, running of parallel applications) and the regular control of these defence lines. From among *human errors*, it is first of all the errors committed by the employees and the managers by accident or on purpose that can be highlighted; i.e. errors arising from mistakes, the lack of professional knowledge, the errors caused by negligence, the lack of discipline or attention, willful damage to property, which are typically aimed at the unlawful appropriation of information and money, such as obtaining business secrets, the modification of authentic information, or the capturing of false information, theft, fraud or bribery. The damage caused by persons and the probability of the occurrence thereof can be considerably reduced by putting in place appropriate human resources

management within the organization (including fair remuneration, promoting identification with one's job, internal training, accurate definition and separation of the positions and responsibilities). The role of the human factor as *an external source of danger* also plays a critical role. Let us just think of the terrorist actions such as the attack against the WTC, the robberies such as the murder and robbery at the Mór branch of Erste Bank), vandalism like the destruction of cash machines, or the hacking of the IT systems of the organizations. Besides, the system of outsourcing that has become popular in the recent years, or the facility repair and maintenance companies that perform the maintenance jobs also pose potential threats. The environmental and natural effects also mean external sources of danger such as floods, earthquakes, lightnings, which primarily damage the fixed assets such as buildings, equipment and IT systems but they indirectly cause interruptions in the operational processes as well. From the attacks on an organization from the outside, the institutions may defend themselves by developing and practicing emergency plans, by concluding various contracts, taking out property insurance and introducing physical defence measures such as access control, or entry and exit systems with passwords and cards.

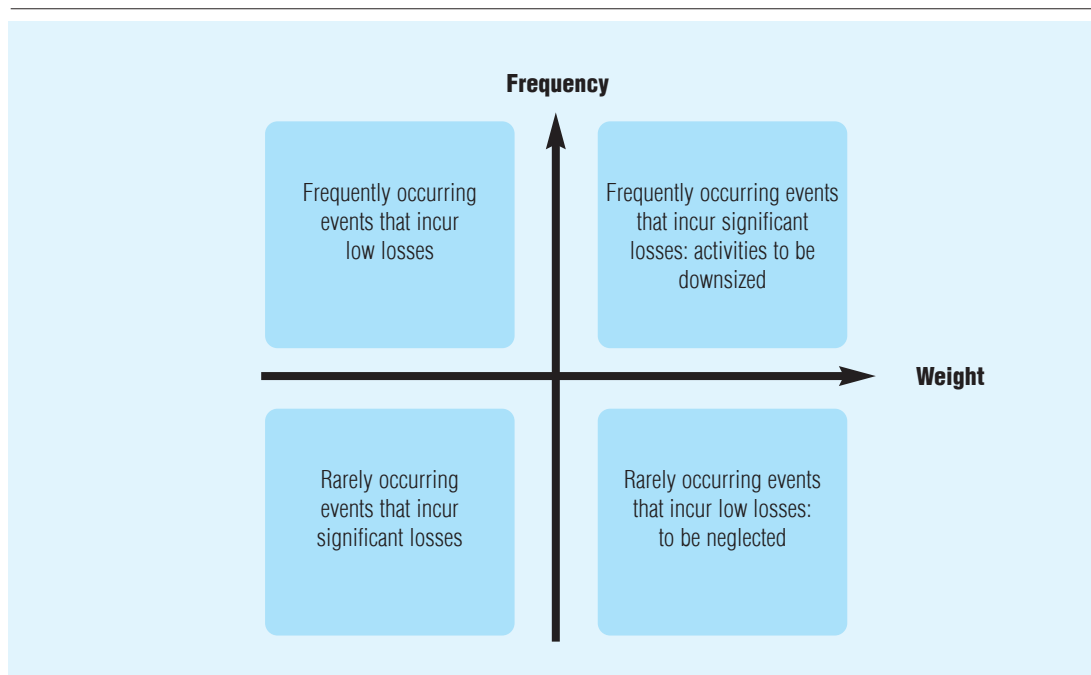
We can see that operating risks cover countless events, rendering the handling of such risks more complicated. Besides the high number of potential risk events, it means a further difficulty that certain events occur with high frequency but they cause low losses individually, while other phenomena are either not typical for a certain organization at all, or their occurrence may incur significant losses.

Accordingly, the factors of operating risks should be assessed according to their frequency and weight, in a two-dimensional matrix. (See *Chart 1*)

The diagram suggests that there are certain events where the losses incurred by their occur-

Chart 1

MATRIX OF OPERATING RISK EVENTS



rence are more “worth” suffering, by taking into account the costs of the prevention of such events; while the areas that are affected by frequently occurring events and involving more serious consequences, exactly because of the size of the incurred loss affects even the survival of the company, should definitely be downsized. From the perspective of managing operating risks, the remaining two groups of events, i.e. those that occur frequently but incur lower losses individually, and those that occur rarely but involve significant losses, are relevant. A regularly repeated error may cause considerable losses in the long run. Let us just think of the notorious embezzlement scandals, which, besides having incurred substantial losses, greatly ruined the reputation of the affected institutions. Whatever type of risk we are discussing, it is relevant for its handling that besides the risk event itself and its impact⁴, the reasons for its occurrence⁵ should also be taken into account.

If we focus on the risk events, we may distinguish between seven categories, on the basis

of the recommendations of BCBS and the EU practices, which you can see in *Table 1* below.

In the past few years, several surveys⁶ have been conducted, which relatively uniformly represent that, with regard to frequency, it is the external frauds and the errors occurring in execution and process management that stand out; while with regard to the size of the loss incurred, besides the outstanding number of execution and process management-related errors, it is the errors and deficiencies in the area of clients, business practices and product policies that are significant.

The new tools of risk management

The Capital Requirements Directive and the national laws that become effective, or are amended on the basis of this directive require that the financial institutions create capital not only for credit and market risks but also for operating risks. For generating the capital to be

Table 1

RISKS		
Types of events	Description	Example
Internal fraud	intentional action, in which at least one party is an employee of the organization	misappropriation, non-compliance with laws or regulations, embezzlement
External fraud	act committed by a third party	hacker attack
Employer's practices, work security	non-compliance with employment, health and labor safety rules, violation of equal treatment requirements	harassment, discrimination
Client and business practices, product policy	an action unintentionally committed against a client out of negligence, or loss arising from product features or design	missing of deadlines, deficiencies
Damage done to physical assets	natural disaster or human action damaging physical assets like real estate and movables, deteriorating their value	in documentation and registration flood, lightning, vandalism, terrorism
Interruption of business operations, system error	errors in the IT and telecommunications infrastructure	server error
Execution, process management	inappropriate handling of activities and tasks	erroneous data entries, problem related to suppliers

created for operating risks, the institutions may choose between several methods of varying complexity. Which method is chosen by which institution depends on several factors such as the size, the scope of services provided, the preferences of the parent bank, etc. Logically, the more sophisticated solutions are also more risk-sensitive, i.e. they reflect the operating risks undertaken by the company more credibly, thus, they can be regarded as more accurate in defining the capital amount that is deemed necessary as well. The so-called *Advanced Measurement Approach*, i.e. *AMA*, built on the institutions' own measurement and modeling methods assumes the consistent gathering of loss data, as well as the development and application of a mathematical, statistical apparatus based on the data, through which the risk exposure of the financial institution and the extent of the capital to be put aside can be determined. In the technical literature on the subject, one may come across a high number of models

aimed at identifying and quantifying risks and built on loss data. However, the practical applicability of these is not proven in each case, besides, it should also be taken into account how far back such data are available, and how reliable these data are. This is important, among others, because the institutions that currently apply or those that mean to apply *AMA* should also focus on qualitative methods besides the quantitative tools. Such is, for example, the development of "if ..., then ..." types of *scenarios*, which are also required by law. In the context of scenario analysis, what usually happens is that an expert group that knows both the institution in question and the operating environment well enough takes into account those potential future changes (stress situations, changes of the regulatory environment, the application of a new strategy) which will affect the activities and goals of the institution, including the undertaken risks. The priority opportunities and their potential conse-

quences and impacts are analyzed in detail, either according to their probability, their weight, or any other criteria, and those “factors” which indicate if any of the tendencies outlined in the context of one of the scenarios are anticipated in the future are determined. In the course of the scenario analysis, it is not only the potential changes and the effects thereof that are assessed but also the responses that may be given to the changes, as well as some preventive and corrective types of measures are also developed. The outstanding significance of the scenarios is demonstrated on the one hand in the exploration of the potential threats, on the other hand in the efficient supporting of decision-making. It is imperative that the individual scenarios should be regularly updated and reviewed.

In the avoidance of critical situations, Business Continuity Planning, i.e. BCP, and Disaster Recovery Planning, i.e. DRP, play a key role. In these action plans, those activities through which continuous availability can be ensured are defined and summarized; i.e. what is to be done in order to avoid permanent interruption when certain events that indirectly jeopardize the banking infrastructure occur. The controlled restoration of the original applications and services can be ensured through the business continuity plans.

Since *the losses affecting execution and process management* are outstanding both with regard to their weight and their number, a *process-based approach* (the networks of organizations and processes) may contribute to the early detection of the increase in risk exposures, and through this, to more efficient risk management and control.⁷ The situation is that through the process-based approach, i.e. the definition and sorting out of processes, the activities of the institution, some business units, or organizational units will become more transparent, thus the critical points will be easier to identify. This approach, among others,

would be useful in applying the risk indicators, as, due to the criteria defined for them such as efficiency, objectivity, comparability, simple use, etc., it is important that they should be gathered and applied on the basis of a uniform system of criteria. Today's Hungarian practice suggests that in this area, it is rather fast produceability than the above-mentioned characteristics that are treated as priorities. The techniques that exclude the system approach do not make sense, as the indicators that are gathered at random (only because they are easy to produce), which do not focus on the critical risk points, do not realistically reflect the risk profile of the institution.

Responsible internal governance

As the majority of the risk events affect the internal, operational processes, the internal lines of defence, as well as the management controls built into the processes have an outstanding significance in the efficient handling of operating risks, among others. The bank's internal defence lines are made up by *responsible internal governance and internal control functions* (PSZÁF, 2006).

If one thinks of the bank and corporate scandals of the past few decades (Barings, Xerox, Enron, Worldcom, SocGen, etc.), the majority of which can be put down to internal operational problems, the lack of, and non-compliance with the rules and regulations, we may rightly claim that responsible internal governance has a critical role in preventing similar situations. Responsible internal governance assumes a transparent organizational structure, clearly defined responsibilities, decision-making competences, and authorities, as well as such corporate systems which ensure the independent, efficient and prudent fulfillment of the governance, control and supervisory functions. Ensuring the existence and obser-

vance of all these is the responsibility of senior management (directors, executive managers). Responsible internal governance and responsible corporate governance differ from each other in that the latter is a wider category, as it comprises the owners' and other partner relationships as well. Responsible internal governance is only possible through the development and operation of appropriate internal control mechanisms. The internal control functions include risk control, compliance and internal audit functions. The core of financial intermediation is risk assumption, thus it is not the avoidance or minimization of the risks that the companies should strive to but the keeping of the risks within a manageable limit, as well as the definition of the risk exposure as comprehensively and accurately as possible, and the conditions of the latter should be created. The compliance activity, besides ensuring statutory compliance, includes the monitoring and adaptation of the recommendations, guidelines, methodological guidances, market standards and ethical rules. Internal audit contains the controls built into the process, management control and the independent organization of internal audit.

The profitable operations of the financial institutions greatly depend on the efficiency of their governance systems. The truth is that no efficient governance exists without a well-functioning internal control system. *The functioning of the internal control system on an appropriate standard directly affects the operation of the institution in question, it is an important factor in its competitiveness.* In an up-to-date system of controls, besides its comprising risk management, the risk factors are regularly assessed and an ever increasing weight is given to preliminary risk analysis and ensuing planning (Vigvári, 2001).

In the recommendation published by the Basel Committee on the prudent practices of the management of operating risks, attention is called to

the importance of the commitment of senior management, emphasizing, among others, that *the creation of an appropriate risk management environment is a fundamental condition to efficient risk management.* The point of this is that the executive managers should be aware (have good understanding) of the operating risks undertaken by the institution, i.e. of the nature, extent of these risks, the actions to be taken and already taken for their prevention and correction, as well as the related threats and opportunities. It is also the responsibility of the management to ensure that the tasks and objectives are clear to each staff member (training, further training courses). Senior management should take responsibility for the consistent extension of the operating risk management system to the whole institution (BIS, 2001).

Several relevant requirements and recommendations emphasize the importance of responsible corporate and internal governance. Such are, among others, the Sarbanes–Oxley Act (SOX, 2002) that took effect after the breakout of the Enron scandal, the CRD, the Markets in Financial Instruments Directive, i.e. MiFID, the guidelines developed by CEBS (the Committee of European Banking Supervisors, GL03) but the recommendations of the BSE on responsible corporate governance (FAT) can also be quoted (Marsi, 2007). These basically summarize those guidelines whose aim is to make the institutions more transparent both from the accounting and financial aspects and with regard to their structures, and to ensure that their managers are more controllable. Parallel to this, the creation and preservation of the management's commitment to reliable operations and their professional competences, as well as those of trust between the institution and its clients and partners are also key aspects of responsible governance, accordingly, they receive attention in the above-mentioned recommendations and requirements.

Taking the characteristics of operating risks (correlations of weight and frequency, the role of the human factor as the most subjective chain, factors that affect the course of business, etc.) into account, we may point out that the adaptation of the above-mentioned guidelines

and approaches (managerial responsibility, risk-oriented control system, independent auditing, etc.) into the banking practices may greatly contribute to the reduction of the risk exposure and the related capital requirement, to efficient risk management and reliable operations.

NOTES

¹ The guidelines developed by the Basel Committee are merely recommendations, thus it is to the discretion of the individual countries how they adapt them to their own legislations and legal practices. The recommendations mentioned in the article have at least partially been adopted by each country in the world, including the EU countries, Japan, Canada and the USA.

² The bases for the changes in the Hungarian regulation are made up by two directives: Directive 2006/48/EC of the European Parliament and the Council (June 14, 2006) on the taking up and pursuit of the business by credit institutions, and Directive 2006/49/EC of the European Parliament and the Council (June 14, 2006) on the capital adequacy of investment firms and credit institutions.

³ During the crisis, it turned out that CRD had quite a number of weaknesses, whose elimination is in progress. The Basel Committee said that one of the most critical area was the inappropriate accounting and coverage of risks related to the items of the trading book, practically those of the market risks, to which it greatly contributed that such complex financial instruments had become increasingly common which were less transparent and assessable, qualifiable, which increased the risks of the financial system. Basel II failed to deal, for example, with the securitization, which appeared in the activities per-

formed by the banks to a high extent, and which played a key role in the deepening of the crisis.

⁴ Among the impacts, it is primarily financial losses, missed income and yields, fines and penalties, costs of legal proceedings, as well as the costs of replacing physical assets that can be highlighted.

⁵ The reasons that contribute to the risk event may be very diverse. Just to mention a few examples, deficiencies of control, inappropriate recruiting or selection processes may result in the “embedding” of professionally incompetent, unreliable persons in the organization (in this case, the risk event in question may be embezzlement, inappropriate handling of client data, negligence, etc.). Any breakdowns in the banking infrastructure, deficiencies in maintenance, the inaccessibility of external databases may also cause interruptions in the normal daily business operations.

⁶ Among others, it was BCBS (2002), the Bank of Japan (2006), the Federal Reserve (2004) that conducted surveys and analyses on the losses that can be put down to operating risks. On these and the experience gained in Hungary based on the HunOR database, see Homolya – Szabolcs (2008).

⁷ Be it risk-related monitoring (tracking of planned and actual risk levels), or internal auditing.

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