Operational Risks in the Banking Industry

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Abstract
The goal of this paper is to point out the current situation in the banking sector related to its risks (credit risk, market risk, liquidity risk, concentration risk) with a special emphasis on today's one of the major types of banking risk, the operational risk. This phrase contains the risks of losses which could happen due to the inadequacy of internal processes, human errors, poor implementation of information systems or possible risky external events, so legal risks are also often included in the definition of operational risks. In this paper the tools to identify and evaluate those risks, capital requirements for operational risk and finally the role of supervisors in managing these types of risks will be given.

Keywords: banks, economy, operational risks, risk management, quality
JEL classification: G21, G32

Introduction
Credit institution is an institution, generally incorporated, authorised to receive deposits of money, to lend money, and to issue promissory notes, usually known by the name of bank notes[1]. In Croatia, any credit institution can be founded as a bank, savings bank or a building society (Javor et al., 2010). Requirements for founding, managing and the cessation of its business as well as supervision over them are regulated by the Credit Institutions Act (National Gazette 159/13).

Credit Institutions Act (Article 8) listed the basic and additional financial services that can be performed by credit institutions. The basic financial services are acceptance of deposits and other repayable funds, lending and forfeiting, factoring, leasing, issuance of guarantees, trading for its own account or on behalf of clients with money market instruments, dealing with transferable securities and foreign currencies, exchange operations, payment services at home and abroad, services related to the business of lending(such as data collection, analysis and collecting information on the creditworthiness of legal and natural persons), safe custody, electronic money issuing, mediation in closing deals in the money market, participation in the issuance of financial instruments and the provision of services related to the issuance of financial instruments in accordance with the law governing the capital market, asset management, custodian of financial instruments and providing services related to the custody of financial instruments in accordance with the law governing the capital market, giving advice on capital structure, business strategy and related issues and the provision of services related to mergers and the acquisition of shares and stakes in other companies, investment and ancillary services and activities.

In addition to basic financial services Credit Institutions Act (Article 56) states additional financial services such as activities related to the sale of insurance policies, provision of management services to payment systems and any other

[1] Legal Dictionary. The Free Dictionary. Available at: http://legal-dictionary.thefreedictionary.com/Credit+institution (11/4/2016)

services similar to the financial services of which are listed as basic financial services. Credit institutions must not perform any other activities than banking and financial services for which it has obtained the approval of the authorities.

This paper will be split into three parts: the concepts of risks in banking, then the definition of operational risks with several ways of measuring it will be given, and before the conclusion the role of supervisors in operational risk management will be explained.

The concept of risk and its importance in banking

A great number of authors, in foreign as well as in domestic literature, differently define the concept of risk. Yet in all of the definitions we can find the general idea that the risk is a kind of uncertainty associated with future outcomes or events. Risk is a probability or threat of damage, injury, liability, loss or any other negative occurrence that is caused by external or internal vulnerabilities that may be avoided with pre-emptive action. In finance that is the probability that the actual return on an investment will be lower than the expected return.[2]

In the banking business just one type of risk cannot appear because the bank is at all times faced with several risks, and a further problem in itself is risk quantification or how to exactly measure some risks that may affect the bank's operations. That is why it is important to define the bank risk management as "a set of procedures, methods and policies for identifying, measuring, assessing, controlling, monitoring and eliminating risks, including reporting on the risks that the bank is exposed or might be exposed in its operation." (Vukičević et al., 2012)

Every time a financial institution approves credit loan to a client, it performs its fundamental function and thus accepts the credit risk, and the overall success of the bank's administration depends on its ability to predict and quantify the total risk (Šarlija, 2008).This raises the question of what is actually hiding under the phrase of total bank risk. Bank management (Javor et al., 2010)in their everyday business faces seven most common types of risk that will be explained in more detail in the following subsections.

Credit Risk

Credit risk is, in terms of the Credit Institutions Act, the risk of loss due to non-fulfilment of the debtor's financial obligations to the credit institution (Javor et al., 2010). Elements of credit risk can be found in any situation when a person or a company takes a product or service without immediate payment and there is consequently likely that the client will not be able to repay that loan and meet their obligations (Šarlija, 2008). Of all the risks that bank faces, credit risk has the most impact on its operations and profitability (Vukičević et al., 2012).

Before entering into any agreement which is the basis for the emergence of exposure to credit risk, the bank must assess the debtor's creditworthiness and the quality, marketability, availability and value of collateral of their claims (Javor et al., 2010).

Market Risk

Market risks are the combination of position risk, currency risk and commodity risk (Javor et al., 2010).

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[2]Definition of risk. The Business Dictionary. Available at: http://www.businessdictionary.com/definition/risk.html (11/04/2016)

Position risk is the risk of loss arising from changes in the prices of financial instruments or, in case of a derivative financial instrument, in its underlying variables. Position risk is divided into general and specific risk. General risk is the risk of loss arising from changes in the prices of financial instruments due to changes in the level of interest rates or major changes in the capital markets related to any specific characteristic of this financial instrument. On the other hand, the specific risk is essentially the risk of loss arising from changes in prices of individual financial instrument due to factors related to its issuer, or in the case of a derivative financial instrument with the issuer's primary financial instrument. **Currency risk** is the risk of loss arising from changes in exchange rate and/or changes in gold prices, while **commodity risk** is the risk of loss arising from changes in commodity prices.

Liquidity Risk

This type of risk is determined by the bank's difficulties to gain cash from the sale of assets or from a new loan. Liquidity risk is most easily described as the risk of loss arising from existing or expected inability of the bank to meet its financial obligations (Vukičević et al., 2012).

For the effective liquidity risk management each bank should prescribe appropriate policies and procedures, regularly review the validity and justification of the assumptions that underpin liquidity risk management system, establish systems for ongoing management of current and expected future cash inflows and outflows, and consider possible legal, supervisory and operational limitations to potential transfers of liquidity and free funds within and outside the Croatia, and make appropriate plans for crisis management which will define the actions to resolve liquidity crises and regularly conduct analyses of different scenarios and examine the assumptions on which is the analysis based (Javor et al., 2010).

Operational Risk

Operational risk is the risk of loss due to inadequate or inappropriate internal processes, people and system (poor IT background), and external events (Javor et al., 2010).

Operational risk also includes legal risk, which is defined as the risk of losses due to lawsuits or fines arising from legal, administrative and other proceedings, and from the violation of contractual or legal obligations. Includes compliance risk in the part referring to the risk of losses that will be in the future due to the imposition of measures and penalties, the risk of losses due to failure of operations in accordance with the regulations, standards, codes and internal rules, and the risks associated with anti-money laundering and terrorist financing. Operational risk is the risk of actual loss or incorrect presentation of profit due to errors in data entry, data processing, evaluation and posting data.

Concentration Risk

Concentration risk is each individually, direct or indirect, exposure to a single person or group of related people or even group of exposures connected by common risk factors, such as the same economic sector or geographical area, equivalent jobs or goods, or the application of credit risk mitigation techniques, which can lead to losses that could jeopardize the business continuation of the credit institution (Javor et al., 2010).

Residual and dilution risk

Residual risk is the risk of losses arising when recognized credit risk techniques used by credit institutions less effective than expected, while dilution risk is the risk of losses due to reduced amount of purchased receivables generated for cash or non-cash receivables of the debtor arising out of legal relationships with previous creditor (Javor et al., 2010).

Operational risk and the ways of measuring it

Increasing globalization of financial services, together with increasing levels of financial technology make the activities of banks, and therefore the level of risk itself, all the more complex. So in the modern development of banking operations more importance, besides market and/or credit risk, is given to other types of risks, especially operational risk. Although this type of risk is present from the very beginnings of the banking business, it was not always considered as one of a great importance, nor were there requirements for the corresponding measurement of this type of risk by the banks themselves. However, certain characteristics of the modern way of doing business caused the serious study of these types of banking risks. The importance of managing this risk and its impact on the amount of losses has been recognized by the Basel Committee for Banking Supervision which has published "Best practices for operational risk management and control of it." (Šarlija, 2008)

The banking business is primarily a service industry, which means that its employees must have contacts with customers to carry out banking operations. It should be noted that business with customers cannot be automated and is not possible that all the bank operations can be transferred to completely automated machinery. Part of the business that bear the employees themselves is very much subject to human mistake, even the most common ones in data entry related to the transaction fields that must be entered, e.g. the name ofa client. Faulty data entry is trying to be prevented as much as possible with the use of control of the entered data. Thus, for example, someone cannot enter a payment order without first accurately indicated the name of the depositor and the bank which must make the payment. If it is determined that one of these fields is not correctly entered, the computer programme will require re-entry of data. It is believed that today operational risk is the second major risk of bank operations.

Also, we must examine the fact that a bank has in cash or on different accounts large amounts of money. A bank can be protected from the potential theft both with controlling internal and external communication and the use of money. Access to vaults must always be limited, and the money transfer accompanied by licensed security guards. Also, each of the bank branches must have security guards who should serve as a method to prevent potential robberies.

But the threat to the security banks lies not only in the external, but also internal factors, so bank’s security must be set through physical security, byrestricting access to the bank’s Intranet to unauthorized personnel and by using methods of IT protection (in the modern business, the correct IT protection is often a more important than the role of physical protection of the bank's operations) (Vukičević et al., 2012).

Potential fraud and criminal activity resulting from identity theft and misuse of debit or credit cards are also facts that fall under banking exposure. Identity theft is common when submitting fraudulent loan applications and loans that are granted to people with false identity and therefore cannot be charged for their debts. Misuse

of the cards includes the use of stolen or fraudulent cards used at ATMs by unauthorized people.

Another important aspect of operational risk is controlling business processes. Business processes can be described as "a series of logically related activities that use the resources of the company and whose ultimate goal is customer satisfaction for consuming products or services of satisfactory quality and price, in adequate time" (Bosilj-Vukšić et al., 2004). In the banking business, controlling business processes makes clear definition of duties and powers that are related to each individual workplace. With a clearly defined work tasks, the employees can do decision making for themselves with lower amounts of risk.

Almost all the banks today have clearly defined boundaries for loan approvals. One of the foundations of control and separation of credit analysis of the business units, and this adds another level of quality control placement and reduces the possibility of any manipulation with placements.

Under the operational risk are also included judiciary risks. All the losses that may arise from lawsuits that have been filed against the bank fall into the domain of operational risk. If the justice system of a country is not functioning well, the bank may be exposed to losses and that possibility must also be recorded (Vukičević et al., 2012).

Tools for identifying and assessing operational risk

The Basel Committee for Banking Supervision in 2003 announced possible tools for identifying and assessing operational risk. Among them are (Basel Committee for Banking Supervision, 2003):

- **Self-assessment or risk assessment**

Using this tool, each individual bank assesses its operations and activities with respect to the catalogue of potential vulnerability to operational risk. This process is carried out internally and often includes checklists and/or workshops to identify the strengths and weaknesses of the environment with regard to operational risk. For example, scorecards are a great way that qualitative assessments could translate into quantitative metrics that give a relative rating of the different types of exposure to operational risk. Some scores may relate to risks inherent in a particular business activity, while others may rank risks that arise in various business activities. Scores refer to the inherent risks and the control in order to reduce them.

- **Risk mapping**

In this process, various business units, organisational functions and business flows are classified according to the type of risk. This task can reveal areas of weaknesses and help the administration in determining priorities for any type of further activities.

- **Risk indicators**

Risk indicators are statistic and/or metric data, often financial, which can provide insight into the risk position of the bank. These indicators are usually reviewed regularly (monthly or quarterly) to the bank pointed to the changes that may be indicative of a problem associated with the risk. Such indicators, for example are the number of failed transactions, turnover rates per employee and the frequency of errors and omissions.

- **Measurement**

Some banks have begun to quantify their exposure to operational risk using different approaches. For example, data on the experience of the bank related to historical loss can provide important information for assessing the bank's exposure to operational risk and developing a policy to reduce or control the risk. Some banks

also combine internal data on losses with external data losses, scenario analysis and factors for risk assessment.

Capital requirements for operational risk

Credit institutions should calculate the capital requirement for operational risk by using a simple approach, standardised approach or an advanced approach. Exceptionally, a credit institution can be simultaneously used by multiple accesses with prior approval of the Croatian National Bank.

Simple approach

This is the simplest method of calculating capital requirements. The three-year average net operational income of the bank should be multiplied by a fixed percentage of alpha (15%). The capital requirement is calculated by scaling one indicator –the net operating income:

Capital requirement = [Σ (GI1 ... n x α)] / n

GI = net operating income (net interest income + net non-interest income) during the past 3 years; **n** = 3; **α** = 15%

This method gives only a general estimate of exposure to operational risk and this is at least precise method and should not be used in large international banks (Šarlija, 2008).

Standardised approach

The standardised approach is more advanced than the previous method and represents the minimum criterion that should be used in the international banks for the calculation of capital requirements for operational risk. Capital requirements are calculated in the way that the total activity of the bank is divided in eight business areas (e.g. retail lending, corporate finance, payment, etc.). Then the net operating income of each business line is multiplied by the beta factor prescribed for each business line. The total capital requirement for a bank is calculated as the sum of the individual capital requests for eight business areas:

Capital requirement = Σyear1-3max = {[Σ (x GI1-8 β1-8), 0]}/3

GI = annual net operating income; **β** = a fixed percentage of the areas of business (according to pre-set parameters by supervisors)

This division into eight business areas are commonly called mapping. The process of mapping must be documented, and any new business area is mapped to the appropriate area. If an area cannot be mapped, it is classified in the area with the highest beta.

In order banks could apply the standardised approach; they must meet the minimum quality requirements set by the Basel Committee for Banking Supervision:

- establish an independent organisational unit responsible for operational risk management,
- ensure regular monitoring data on operational risk, including significant losses by each business line,
- bank management should receive regular reports on the exposure to operational risk,
- management system must be well documented, and there must be a mechanism of control treatment of documented procedures, and
- Include internal and/or external auditors to conduct the audit of system's operational risk.

The supervisor has the right to a certain period of observation before it approves the use of the standardized approach (Šarlija, 2008).

Advanced measuring approach

This method allows banks to calculate the capital requirement for operational risk according to the internal methodology. The approach is based on internal database of losses caused by operational risk. To use progressive methods of measuring, bank must request and obtain the consent of the supervisor. The transition to calculating capital requirements of this method is gradual. It is necessary and provided that they met certain quantitative and qualitative standards.

Banks are encouraged to progress in the application of advanced methods and large international banks should not use basic indicators.

The role of supervisors in operational risk management

Banking supervisors should require that all banks, regardless of size, have an effective system for identifying, assessing, monitoring and controlling, and finally reducing significant operational risks as part of its overall approach to risk management. Given that operational risks are threat for banks safety, supervisors are responsible to encourage banks to develop and use better techniques of risk management. In addition, supervisors should conduct, directly or indirectly, regular assessment of policies, procedures and practices related to the bank's operational risk. Supervisors should ensure that there are appropriate mechanisms which allow them to be informed about developments in the banks. In fields of their work, supervisors should use independent assessing of operational risk such as the effectiveness of the process of bank risk management and overall control environment related to operational risk, bank methods to control the profile of operational risk and in its reports include data on operational losses and other indicators of potential operational risk, bank procedures for the timely and effective resolution in the cases of operative risk and sensitivity to this risk, processes of internal control, review and audit to ensure the integrity of the entire process of operational risk management, the effectiveness of the bank's efforts aimed at reducing operational risk, such as the use of insurance, quality and comprehensiveness of the bank's plans for disaster recovery in order to preserve business continuity and bank process for assessing overall capital adequacy for operational risk due to its risk profile and, where appropriate, its internal capital goals.

The flaws which are possibly identified during the supervisory review may be addressed to different types of measures. Supervisors should use the tools that are best suited to the particular circumstances of the bank and its business environment. To receive current information on operational risk, supervisors may wish to establish reporting mechanisms directly with banks and external auditors (for example, internal management reports on operational risk can be routinely made available to supervisors, etc.).

Given the general understanding that many banks still develop processes for operational risk management, supervisors should take an active role in promoting the work on continuous internal development in order to monitor and evaluate the latest enhancements and plans of banks in connection with future developments. This work can be compared to those which are taking other banks in order to obtain useful feedback on the status of their own business. In addition, supervisors should focus on how the bank has integrated the process of operational risk management in the organisation to ensure effective operational risk management deployed by business activities, a clear hierarchy of communication and competence, and encourage active self-assessment of existing practices and consideration of possible improvements in reducing risk (Basel Committee for Banking Supervision, 2003).

Conclusion

In this paper, definitions of credit institutions and different forms of bank risks were given with great detail towards operational risks. Operational risks are those types of risks which bring loss to a bank due to inadequate or inappropriate internal processes, people or poor IT systems as well as those which arise from certain external events. Its importance grows by each day. In the process of writing this paper numerous secondary sources, books and papers, from Croatian and foreign authors were used and it is expected that in the future the number of papers on this matter will surely rise. This also makes the limitations of this paper and in further studies a concrete examples and data sets of Croatian financial industry could be researched and explained.

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