

Study on the Impact of Incentive Mechanisms and Internal Control Systems on Risk Management in Commercial Banks

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Received 2013

ABSTRACT

The operational risks for commercial banks could be divided into four scenarios, which are the risks caused by malicious act, rational choice, inadequacy of capability and unconscious choices. Furthermore, these "initiatives" can be reflected in financial corruption, moral hazard, bounded rationality and irrational behavioral tendencies. Operational risk has become one of the three main risks for commercial banks since The New Basel Capital Accord released in 2004, together with credit risk and market risk. This article accordingly puts forward related proposals of the commercial banks' operational risk management.

Keywords: Credit Risk; Incentive and Restraint Mechanisms; Internal Control Systems

1. Introduction

Along with a series of operational risk accidents occurred in banking system, banks have been paying more and more attention on controlling operational risk since the nineties of last century. According to a survey by British Bankers Association (BBA), more than two-thirds of the banks believe that operational risk is at least as significant as market risk and credit risk. Another risk survey by KPMG indicates that currently the ratios of risk capital to total capital required by credit risk, market risk, operational risk and other risks are 40%, 35%, 20% and 5%, which might be shifted to 30%, 25%, 40% and 5%. In recent years, with the frequent outbreak of operational risk management cases, operational risk management has been more and more important for commercial banks' management activities.

There has been no standard definition about operational risk in academicians yet. In practice, financial institutions also have different understandings on operational risk. Financial Services Authority (FSA) defined operational risk as all the risks other than market risk and credit risk. Basle Committee (2001) gives an definition on operational risk as well: the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. Meanwhile, The Basel II definition of operational risk excludes strategic risk and reputation risk. Among all these definitions, the risk derived by "people" is seen as an important part of opera-

tional risk. The generation of operational risk always relates to the factor of "people". From the practical view, it is very important to minimize risk caused by human factors. Admittedly speaking, the sudden accident (such as natural disasters, computer system crash) might also lead to significant loss. However, the management tools such as insurance and backup are relatively mature [1].

2. The Analysis on Causes of Operational Risk

2.1. Operational Risk Arising from Financial Corruption

Financial corruption includes the internal corruption of bank employees and the corruption of financial regulation authorities. Bank's internal corruption refers to the rent-seeking behaviors by bank employees who hold the configuration privileges of credit funds. The corruption of financial supervision and regulation means that the regulatory authorities seek rent from financial entities. The operational risk due to the corruption of bank employees is obvious. The bank employees often loosen the review of borrower's potential risk after accepting bribery [2]. They might approve "relationship loans" to borrowers even knowing it is very risky. The risk arising from such loans is not due to "information asymmetry", since most banks have a clear understanding on borrower's financial transaction history, profits and other key financial information. The risk caused by corruption

is mainly operational risk rather than credit risk.

Financial supervision corruption seems less direct and obvious than internal corruption. Financial supervision is generally believed as the means of controlling operational risk instead of causing it. However, the supervision authority corruption would change the bank's risk preference and encourage banks to undertake high-risk even illegal businesses, since they believe the corrupted supervision authorities would have mercy on high-risk behavior. If there is a serious corruption in a country's financial regulation system, the operational risk of financial institutions also must be quite high.

2.2. Operational Risk Arising from Moral Hazard

Moral hazard refers that because of information asymmetry, the agents with information superiority may make use of system vulnerabilities and information advantages to maximize their own interests while damaging the interests of clients who take the information disadvantages [3]. In commercial banks, operational risk of moral hazard includes the employee's moral hazard and the bank's moral hazard. Strictly speaking, financial corruption can also be incorporated into "agency problem". Nevertheless, financial corruption of bank employees is an extreme case of moral hazard, the core of which is "conspiracy". It will not facilitate the clear identification of the causes of operational risk, also is not conducive to the operational risk control to analysis in agency model. This article then separates financial corruption as an independent cause of operational risk.

Moral Hazard of bank employees is closely related to asymmetric information. What's more the deeper reason is that the inconsistency of interests between agents and clients. Bank employees have options to be lazy or hard working in maximizing personal interest. A hard working employee will actively manage the credit risk and pay close attention to the borrower's risk profile; while a lazy employee who lacks of initiative will not strive to collect borrower's information, and will not seriously analyze the hidden risk, leading to operational risk consequently. It seems that rational employees should work hard to maximize self-interest since lazy employees may be dismissed. However, banks often can not directly observe whether an employee is "lazy" or not unless absenteeism or refuse to work. Besides, banks often determine the efforts of employees by the security of the credit funds, which means the return situation of loans. Employees can then attribute the loss to adverse external effects, such as the so-called systemic risk, to avoid accusations from banks. This kind of operational risk is usually shown in the forms of market risk or credit risk forms.

Moral hazard from banks is closely related with the

two systems: one is that government (central bank) as the lender of last resort, and second is the deposit insurance system. The government "share the risk" to reduce the risk of bank losses and costs, further increases the value of risk decisions, which brings the incentives for banks to take more risky projects. The phenomenon of "too big to fail" caused by this system make banks have "never bankrupt" expectations, which cause the relaxation of operational risk control, or induce greater operational risk. Especially in a crisis, the banks would choose to gamble in higher risk business, because the outcome could not be worse while the potential interest will be great if succeed finally.

2.3. Operational Risk Arising from Bounded Rationality

Bounded rationality is the notion that in decision making, rationality of individuals is limited by the information they have, the cognitive limitations of their minds, and the finite amount of time they have to make decisions. The factors affect the banking operations are complex, multi-faceted, and with great uncertainty. Bank employees often have difficulty to accurately identify and measure the accuracy and importance of information. This could generate errors in operations easily and result in operational risk. What's more, employees have limited computing capacity and cognitive ability on various business activities [4]. The collection, screening, analysis and processing of information are subject to personal qualities and capacity. They might reach an optimal program by choosing a program which make them feel satisfied, but not necessarily the most effective one. If the bank employee's self-satisfaction standards, which are closely related to the quality and ability of employees, are lower than the risk control standards, operational risk arises. The errors in analyzing and judging information will also cause a variety of operational risk.

Except for the wrong judgments and decisions in ordinary businesses, another important form of bounded rationality is the model risk. With the deepening of financial innovation, bank risk management tools become more and more complex and the financial models are becoming widely used in commercial banks. The accuracy of the models not only directly affects the risk management quality, but also directly reflects the size of operational risk. However, the accuracy of models is closely related to the quality of designers. On one hand, because of the limitations of model designers and users' abilities, the models may have their own defections. On the other hand, model application error, which means the inappropriate use of the model, will lead to disaster. In many cases banks gamble in the model parameters (such as volatility, correlation coefficient) unconsciously, which

also increases operational risk.

2.4. Operational Risk Arising from Tendencies of Irrational Behavior

The "tendencies of irrational behavior" are the habits or preferences in making decisions, or a common tendency (which is not an absolute tendency) in understanding problems, making decisions and adjusting judgments. These habits, preferences and tendencies do not meet the "rational" requirement, but still play an important role in people's behavior and decision-making process in real. These tendencies always cause wrong judgments and bring risks. In behavioral economics, bounded rationality and the tendency of irrational behavior is not completely separated. This article emphasizes on personal limitations such as knowledge and ability and external condition limitations such as insufficient information when referring to "bounded rationality"; and focuses on the "irrational" activities even under sufficient information when referring to "irrational behavior tendency", which leads to decision-making bias. Irrational behavior tendencies include cognitive bias, "irrational" in deciding prospect value, and "irrational" in adjusting confidence. The tendencies might lead to bank operational risk include similar bias, availability bias, anchoring bias, group effect, fuzzy aversion, regret aversion and cognitive disorders.

3. Views on Controlling Operational Risk for Commercial Banks

3.1. To Establish Sound Internal Control Systems

The importance of the internal control system is indisputable. First, strict internal control system can effectively prevent the bank employees from financial corruption and illegal activities, such as independent internal audit, crossing control of assets, double signatures, approval system if exceeding a standard loan amount and so on. Second, banks could avoid the operational risk brought by "bounded rationality" to a certain extent. Sound internal control system would develop a stylized, standardized process. Good training and communication mechanism also could alleviate personal knowledge limitations and inadequate information problems. Third, a sound internal control system is essential to the prevention of "irrational behavior tendency".

"Irrational behavior tendency" is the habits when making decisions, which is quite difficult for individual to effectively control such risks. For example, it is especially inefficient to eliminate regret aversion tendency for decision-makers. Therefore, the external forces to limit the behavior tendencies of bank employees are necessary to effectively control operational risk. This coercive

power is the bank's internal control system. For example, the separation of decision-making process to a certain extent could weaken the group effect then making the bank more neutral on decision-making (decision-making process is not simply to avoid the intervention of powers and the interference of human). Finance committee which makes collective decisions can undermine the anchoring effect as well. Each of decision-makers has different "anchor" thus increased the decision-making "anchor" of objectivity. Another example is that credit approval authority could limit the maximum amount of loss which could control the concentration of credit risk to some extent though passively. When facing the blind confidence of decision-makers, internal control system must plank down the case under which banks could intervene (similar to a compulsory liquidation the securities dealer system), and the risk index level which the top officials should handle. These measures can prevent the delay of rectifying decisions caused by "irrational" regret aversion [5].

A sound internal control system should include at least the following five elements: management oversight and control culture; risk identification and assessment; segregation of control activities and duties; information and communication; behavior monitoring and correction. The internal control system needs to be strictly implemented. Often the poor implementation of bank's internal control is a kind of operational risk [6]. The most common causes of operational risk are not the absence of good internal control system, but the poor implementation of the system. The implementation process of internal control system should adhere to the "rigid" principle: any authority expansion or the change of the risk warning value should be implemented after careful discussion. This measure is necessary because the agents often have "100 percent" reasonability that should change those "conservative" and "rigid" system constraints once the deviations occurred. What's even worse, the availability bias may also occur in many people at the same time[7]. Therefore, the internal control system should be carefully considered even before it is set. Once the system is developed, everyone must comply with it. All kinds of obstruction should be ruled out to assure the implementation of the system.

3.2. To Establish Effective Incentive and Restraint Mechanisms

Effective incentive and restraint mechanisms are helpful to prevent moral hazard. For the moral hazard of employees, it is crucial to design effective incentive mechanism to assure the bank profits while maximizing personal interests. The incentive methods include remuneration, reputation, promotion, etc. The empirical study of

agent incentives found that remuneration can improve the motivation of agents, and because compensation is measurable, in reality this method is quite feasible. One thing in designing incentive compensation system is that both the profit and revenue targets and the risk indicators should be considered [8]. As to the moral hazard for banks, government should improve the lender of last resort and deposit insurance system. First, the "lender of last resort" must distinguish and separate the insolvent banks from the banks lack of liquidity. Second, the officials should take appropriate punishment to those imprudent operators and shareholders. Crockett said: "The moral hazards will be greatly reduced if the management team realizes that they will lose their jobs, and shareholders realize that they will lose their capital once the bank fails"[9]. Third, on the basis of compulsory deposit insurance of all banks, government should collect risk-related premium according to the different risk situations of banks. Fourth, banks should insist that insurance companies and depositors should engage in co-insurance, which means that the bank restrain the maximum deposit insurance amount according to the different deposit insurance rates. This measure could guarantee the insurance company and bank depositors share the risk. As to the moral hazard of employees, an effective compensation, reputation and promotion incentive system is necessary [10]. In addition, banks should improve recruitment and training system; financial supervision and regulation authorities should create a favorable financial environment, implement strict financial risk supervision.

4. Acknowledgements

This paper is sponsored by Beijing Philosophy and Social Science Planning Project--Beijing Land Transportation and Port Development Research (Project Number: 09A Bjj298) and Beijing Municipal Commission of Education 2011 Project for Developing Advanced Hu-

man Resources for Higher Education -- academic innovation team on exploring the mode for trade and economy development in Jing-Jin-Ji Region (Project Number: PHR201106139).

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