IMPLEMENTING OPERATIONAL RISK MANAGEMENT IN BANKS VIA INSURANCE POLICIES

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ÖZET

Bankacılık sektöründe otorite kabul edilen Basel Komite'nin Haziran 2004'te yayınladığı Basel II standartlarına göre, bankaların maruz kaldıkları riskleri ölçmeleri ve sermaye yeterlilik oranına dahil etmeleri öngörülmüştür. Bankalar için sermaye oldukça kıt bir kaynaktır. Bu nedenle bankalar risk yönetim süreçleri içinde kendilerine sermaye tasarrufu sağlayacak bir model arayışı içindedirler ve maruz kaldıkları risklerin ekonomik etkisini azaltabilmek için risklerini transfer etme yolunu seçebilmektedir. Bankaların maruz kaldıkları operasyonel risklerin tanımlanması ile beraber sigortacılık sektörü, bankaların risklerini transfer edebileceği yeni sigorta ürünlerini piyasaya sunmuştur. Bankalar sigortalama ile hem maruz kaldıkları operasyonel risklerinin ekonomik etkisini azaltabilmekte hem de hesapladıkları gerekli sermaye miktarında bir tasarruf sağlayabilmektedir. Bu çalışmada bankaların maruz kaldığı operasyonel riskleri için sigortacılık piyasasında sunulan sigortacılık ürünleri ve kapsadığı zarar türleri tanımlanarak, bir bankanın sigortalama ile ne şekilde sermaye tasarrufu sağlayabileceği anlatılmaktadır.

Anahtar Kelimeler: Operasyonel risk, gelişmiş ölçüm yaklaşımı, içsel ölçüm yaklaşımı, sigorta ürünleri, sermaye tasarrufu

Abstract

By the official announcement of Basel II in June 2004, banks are required to measure and manage their operational risks, calculate the sufficient amount of capital required to cover their risks and include in banks' capital adequacy computations. Since capital is a scarce source, banks are forced to figure out ways for holding less capital. In recent years the insurance industry have introduced variety of products for operational risk identification, measurement and control. Altough various insurance policies for operational risks have been launched by the insurance companies, the regulatory authority has restrictly recognized these policies for a relief from legal capital requirement. This study presents the types of insurance policies designed for covering operational risks in banks and the implementation of insurance policies as a risk management tool.

Keywords: Operational risk, advanced measurement approach, internal measurement approach, insurance tools, capital saving.

Introduction

Banks for a long time have tent to insure only low frequency-high severity risks such as natural disasters. However, changes the nature and variety of banking risks led the introduction of new insurance policises in the insurance sector. Nowadays, insurance policies are not used only for mitigating catastrophic losses but also accepted as an effective strategy for a relief in legal capital requirement. Accordingly, banks currently tend to invest in insurance contracts for minimizing their operational losses and lowering amount of legal capital held. The most recent banking capital requirement standards known as Basel II allows to transfer of operational risk via insurance tools and reduce regulatory capital. On the other hand, Basel Committee caps the reduction in legal capital up to 20% of total operational risk capital charge even if all operational risks are insured. In line with the

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application of Basel II standards, banks nowadays consider the implications of insurance in operational risk management. However, in making decision about which insurance policy fulfils the needs, banks are recommended to have a detailed operational risk database concerning types, frequency, amount of exposure, and amount of loss of operational risks. As defined by the Basel Committee, operational risk is " the loss resulting from inadequate or failed internal processses, people, systems or from external events". Briefly, the operational risk factors are classified as human, system, processes and external events. Therefore, banks are ought to figure out for which risk factors insurance tools would be the most effective strategy not only for mitigating operational risks but also for decreasing amount of required capital. Moreover, implementing a cost-benefit analysis is very helpful to compare how much insurance premium paid to amount of net risk transferred via insurance policy.

This reserach study intends initially to define operational risk factors and type of insurance policies to cover the likely operational losses. The following section presents computations on a hypothetical banking case. This part shows whether purchasing an insurance policy is worthwhile for the bank comparing the insurance premium paid to likely opational losses covered. The last part summarizes the research and emphises important points.

1. Operational risk factors

Basel II classifies the factors resulting operational risks as human, system, processes and external factors. Each factor is orderly defined as below:

1.1. Human

Human factor causing operational risk is subcategorised as the employee's error, employee's fraud, conflicting to Employment Law and loss or lack of qualified personnel. Employee's error may be caused by losses resulting from incorrect actions of the staff. Fraud includes collusion, embezzlement and money laundering. Wrongful termination, discrimination, harassment, non-adherence to Health and Safety Regulations could lead to operational losses. Another sub-factor for human category is loss or lack of key personnel. If qualified employees are not available internally, then a bank may loose clients because of poor service quality. In order to lower the impacts of operational risk by human factor, internal control and auditing could be an effective strategy. Furthermore, banks could avoid human errors by adequately training staff about new products and services [6].

1.2. System

System risk is defined as the loss that banks incur due to virus attacks, system breakdowns, capacity problems and lack of security. With the new trends in financial markets in recent years, the systems of banks have looked insufficient to handle the complex high volume operations. Therefore, banks have aimed to restructure their operational systems. Banks may loose significant amount of data during restructuring process. Operational losses occuring by deficient systems are classified into four subgroups; technology and investment risk, system development and orientation risk, lack of capacity problems and system security problems. Technology and investment risk is defined as the loss banks may incur because of investing in unqualified softwares. System development and orientation risk is defined as the loss resulting from human error because of improper design of softwares. Lack of capacity problems is grouped as network errors, insufficient memory and database problems. If there occurs capacity problems, the transaction processes may breakdown and hence banks incur operational losses. System security is another type of operational risks resulting from the banks' system. If a bank's system is not guarded properly against unauthorized external or internal access, banking data in the system may be manipulated or the system and the network may be hacked. A good example for this could be that a group of Russian computer hackers made $10 million of illegal transfers out of Citibank in 1994. All, but only $400,000 was ultimately recovered by Citibank. After this crises, Citibank lost 20 of its top clients claiming the need for more stringent security. This also cost Citibank to incur a large indirect loss [7]. Banks generally opt to delay investing for restructuring or developing their systems. However, weaknesses of the systems may oblige banks to compensate much larger amounts of losses than banks pay for investing in their operational systems.

1.3. Processes

Banks constitute internal control units in order to prevent risks. However, in the case of insufficient internal control or faulty implementation, banks incur operational risks. Operational risk occuring in result of processes are classified as documentation risk, contract risk, modeling risk, lack of internal or external reporting. Documentation risk is explained by documents not completed properly. Contract risk indicates wrong or inadequate contract terms. Modeling risk is explained as misleading customers with improper consultancy. Lack of internal or external reporting indicates inadequate exception reporting, accounting failures, inadequate risk management reporting and inadequate

regulatory reporting . Processes are the central focus for the diognosis of operational risk. However, it is impossible to check all banking procedures in detail in the quick-scan phase, so that a quick scan should be limited to the important procedures.

1.4. External factors

External factors causing operational risk is grouped in four as legal and political risk, criminal activities, outsourcing risk and losses from disasters [5]. Legal and political risk is explained as breach of environmental management, regulatory changes in law and war risk. Criminal activities include external fraud, fraudulent account opened by the client, blackmail, robberies, money laundering, terrorism and physical damage to property. Outsourcing risk occurs because of bankruptcy of the supplier or breach of service level aggrement. Disasters as the last external factor causing operational risk indicates fire, flood, civil disasters, energy failure, earthquke, volcano and hurricane.

2. Measuring and allocating capital for operational risk

In 1988 Basel Committee issued the first Capital Accord known as Basel I. Basel I included only credit risk in the computation of banks'capital adequacy ratio. Although Basel I targeted the application only on international banks, it was overly accepted by almost all countries and all local banks. However, Basel I standards were deeply critisized for its deficiencies for not discriminating less and more risky banks, not considering portfolio effects and not assigning flexible risk weights to risky assets. For a reply to these critics, Basel Committee in 1999 first proposed new banking capital standards known as Basel II. Since then, the proposal was revised a number of times based on the comments of parties in interest. Finally the new standards are released in June 2004. The capital allocation for operational risk is first required in the new standards. The Basel Committee umder Basel II standards recommends banks to implement "advanced measurement approach (AMA)" to measure and manage their operational risks effectively. Under AMA approach three different models are considered; Internal Measurement Approach (IMA), Loss Distribution Approach (LDA) and Scorecard Approach. All of these three models provide discretion to individual banks on the use of internal loss data. In implementing AMA banks are required to prove the regulators that bank follows the qualitative and quantitative standards set by the Basel Committee which ensures the integrity of measurement, data quality and adequacy of the internal control unit. The most generally accepted model among these three is the internal measurment approach (IMA). In AMA application, banks build up an operational

risk matrix with 56 cells including eight predefined business lines and seven operational risk factors proposed by the Committee. Each cell in the matrix represents the capital required for business line / risk type of a bank. The required capital for each business line / risk factor combination is simply the total of expected and unexpected losses of the bank. The underlying matrix is illustrated in table 1.

Table 1: Operational risk matrix

Risk Factor (i) / Business Lines (j)	Internal Fraud	External Fraud	Employment Practices and Workplace Safety	Clients, Products & Business Practices	Damage to Physical Assets	Business Disruption and System Failures	Execution Delivery & Process Management
Corporate Finance	EL +UL	EL +UL	EL +UL	EL +UL	EL +UL	EL +UL	EL +UL
Trading and Sales	EL +UL	EL +UL	EL +UL	EL +UL	EL +UL	EL +UL	EL +UL
Retail Banking	EL +UL	EL +UL	EL +UL	EL +UL	EL +UL	EL +UL	EL +UL
Commercial Banking	EL +UL	EL +UL	EL +UL	EL +UL	EL +UL	EL +UL	EL +UL
Payments and Settlements	EL +UL	EL +UL	EL +UL	EL +UL	EL +UL	EL +UL	EL +UL
Agency Services	EL +UL	EL +UL	EL +UL	EL +UL	EL +UL	EL +UL	EL +UL
Asset Management	EL +UL	EL +UL	EL +UL	EL +UL	EL +UL	EL +UL	EL +UL
Retail Brokerage	EL +UL	EL +UL	EL +UL	EL +UL	EL +UL	EL +UL	EL +UL

All banking activities are divided into eight different business lines, namely; corporate finance, trading and sales, retail banking, commercial banking, payments and settlements, agency services, asset management and retail brokerage.

Corporate finance includes the operations related with mergers and acquisitions, underwriting, securitisation, IPO and financing municipal or government. All trading and sales of securities (T-Bonds, T-Bills, repos, equities, foreign exchanges, commodities, derivatives) are operated in trading and sales business line. Retail banking indicates retail lending, deposits and credit card sales to retail customers while as all of these services to commercial customers takes place under commercial banking business line. Payments and settlements business line covers salary payments of various businesses, EFT and all kinds of fund transfers and clearing and settlement operations. Escrows, securities lending and depository receipts belongs to agency services business line, discretionary and non-discretionary fund management is operated in asset management business line. Finally all kinds of sales of equity securities, execution and asisitance takes place under retail brokerage line (Basel, 2001).

Operational risk factors are classified under seven areas, namely; internal fraud; external fraud; employment proctices and workplace safety; clients, products and business practices; damage to physical assets; business idruption and system failures; execution delivery and process management. Internal fraud is the unauthorised activities, theft and fraud of the employees while as external fraud is defined as unauthorised activities and theft and fraud of third parties. Employment practices and workplace safety is acts against safe environment regulations, diversity and discrimination actions. Clients, products and business practices is defined as improper business or market practices, product flaws, wrongful modelling, uncorrect asistance to customers. Damage to physical assets occur because of all kinds of disasters and fire. Business disruption and system failures results of break-downs due to hardware and software problems. Execution, delivery and process management is classified as transaction capture and maintenance, wrongful or inadequate monitoring and reporting of transactions, not keeping documents or loosing them and unsecured relations with vendors and suppliers (Basel, 2001).

The total capital required for operational risk is the summation of capital calculated for each cell. However, Basel Committee encourages all banks using IMA by preparing their own operational risk matrices since operational risk factors could largely vary among banks. Beyond its complexity in implementation, IMA is a more risk sensitive and effective model in measuring operational risk. Basel Committe provides incentives to banks using IMA as the claim of discounting insured amount of risks in legal capital calculations. If a bank employing IMA purchases an insurance policy for protection against operational losses, some of the policy coverage is allowed to inject a relief in legal capital held. However, Basel II standards place a cap on the discount up to 20%. In other words, banks are allowed to have a maximum amount of capital saving of 20% even if they quarantee that all of their operational risks are insured by various insurance policies. In the next sections, the insurance policies designed for operational risks are defined and the usefulness of these policies in capital saving is explained by a hypothetical bank's internal data.

3. Insurance policies for operational risk management

For long time banks have tent to use insurance policies for natural disasters such as eartquakes, fire etc. However, in recent years banks faces number of low frequency-high severity risk types other than natural disasters. Fraud of employees or third parties, employees' error, indemnity for improper business and market practices, system problems

may expose a bank to high severity of losses. The insurance contracts and their coverages are defined below:

- Bankers blanket bond
- Computer crime policy
- Unauthorised trading policy
- Property insurance policy
- Commercial general liability policy
- Employment practices liability policy
- Directors & officers liability policy
- Professional indemnity policy

Bankers Blanket Bond insures banks against dishonesty or default by an employee or a third party as well as fraud and forgery (Young and Ashby 2003). Computer crime policy covers the losses against computer failure, viruses, data transmission problems, forged electronic fund transactions. Unauthorised trading policy includes the losses resulting from unauthorised activities of employees like transactions not reported or mismarking of position and insider trading. Property insurance policy covers the usual property risks such as loss or damage to physical assets from natural disasters or human losses of employees or external bodies like terror attacks or vandalism. Commercial general liability policy compansates losses and payments due to inconsistency with employee health and safety rules and payments of personal injury claims. Employment practices liability policy covers losses or legal payments arising from employees' breaches in employment or safety law or acts like organised labour activities or diversity and discrimination events. Directors' and officers' liability policy covers losses arising from top management's unauthorised trading or errors. A directors' and officers' policy protects the individuals' personal assets against the event of expenses that might be incurred due to legal actions arising from the performance of their duties. Professional indemnity policy compansates liabilities to third parties for claims arising from employee negligence while providing professional service to clients.

When deciding which type of insurance policy would best fit the needs, banks are recommended to first identify their operational risk factors.

Table 2: Insurance policies and coverages

Insurance Policy	**Operational Risks Covered**
Banker Blanket Bond	Fraud, credit fraud Money laundering Theft, extortion, embezzlement, robbery Malicious destruction of assets Check or document kiting Forgery Smuggling Account take-over Bribes, kickbacks Insider trading Hacking damage Theft of information Breach of privacy Market manipulation Unlicensed activity
Computer Crime Policy	Hacking damage Theft of information Insider trading
Unauthorised trading policy	Transactions not reported Unauthorised transactions Mismarking of position Insider trading Unlicensed activity
Property insurance policy	Software, hardware or telecommunication failures Utility outage Natural disasters System failures Virus problems Capacity failures of system Terror attacks
Commercial general liability policy	Employee injuries
Employment practices liability policy	Organised employee acts Discrimination events Breach of Law
Directors & officers liability policy	Misuse of confidential information Breach of privacy Modelling errors Failed mandatory reporting obligation Failure to investigate client per guidelines
Professional indemnity policy	Not keeping documents or records Accounting failures Modelling errors Exceeding client exposure limits

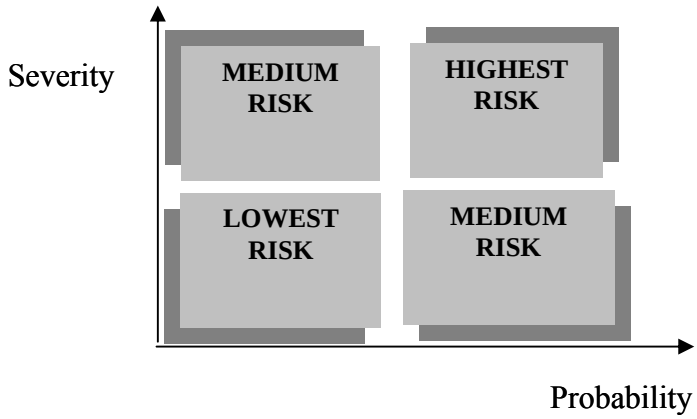
4. Savings in capital using insurance policies

Banks usually tend to insure low frequency-high severity risks. However, with the recent developments in insurance sector, new policies have been designed to cover the losses of various operational risk factors. Accordingly, insurance has become a valid way as an effective operational risk transfer strategy and a way to gain a capital relief for banks. For instance, banks are required to measure their operational risk and allocate adequate amount of capital by the announcement of Basel II. Since capital is a scarce resource, it would be in advantage of banks to hedge operational risks by investing insurance policies. Therefore, banks can use capital more efficiently. The main aim in purchasing insurance policies is to transfer operational risk to insurance companies for a premium and prevent from allocating capital for operational risks incurred. However, Basel Committee as the international banking regulatory authority put a cap on the maximum discount amount of 20% of total operational risk capital charge (Basel, 2004). If a bank hedges the whole of its operational risks by insurance policies, it is not allowed to discount all amount insured from total capital required but gains only a maximum amount of 20% savings in capital allocation. In other words, if a bank computes its required capital of $10 million ($125 million of operational risk amount) and decides to insure itself against fraud risks by a bankers' blanket bond of $30 million total coverage, it is not allowed to discount the all insured amount from total capital charge ($30 million/12.5=$2.4 million). Since the cap for capital savings is 20% ($10 million * 20% = $2 million), hence the bank's total discount will only be $2 million, instead of $2.4 million. If this bank does not purchase an insurance policy for fraud risks, it needs to allocate $10 million for its operational risk. However, fraud risk is transferred to insurance company by a bankers blanket bond while the bank gains a capital savings of $2 million. In making decision about the most convenient insurance type, the bank is recommended to analyse its operational risks, calculate the required capital after the allowable capital savings and compare with the amount of risk insured.

4.1. Mapping operational risks on the probability-severity matrix

It is a strategic decision for a bank to define its risks and invest on the required insurance tool. In this decision process, banks are recommended to make a cost-benefit analysis to determine whether it is worth to transfer operational risks through insurance policies for a premium paid and a loss coverage amount. The first step in risk transfering with insurance policy is the mapping of exposed operational risks probability-severity matrix as below.

Figure 1: Probability- severity matrix for operational risks

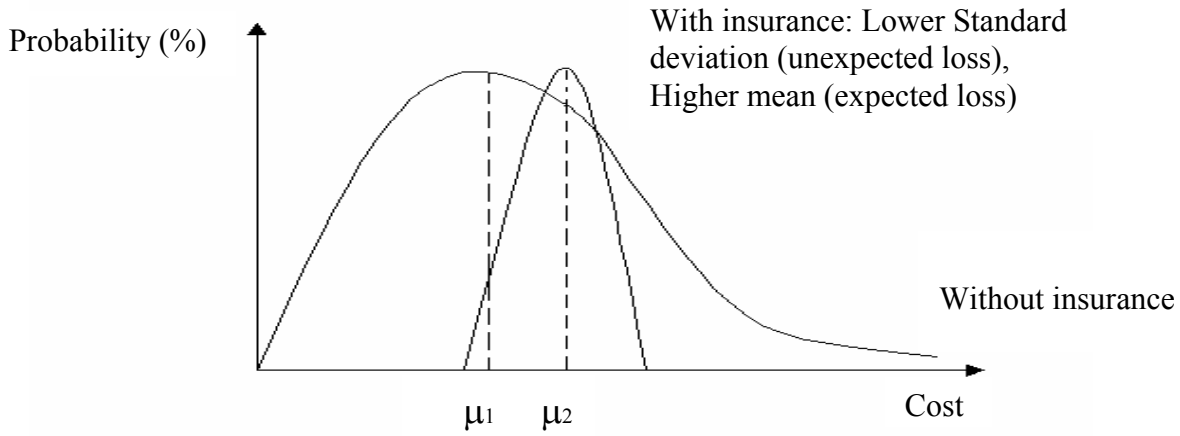


The "low probability-low severity" events are mapped in lowest risk area and accepted as daily operational events. Banks usually do not tend to insure these type of events. "High severity-low probability" and "low severity-high probability" events are mapped in the medium risk area. Banks generally takes these type of events as a part of their daily operations. Few events fall in the highest risk area category "high severity-high probability" simply because banks move away from taking on such risks in their operations by changing business processes (Marshall)???. These events are non-acceptable by banks. It is the two medium risk quadrants that take up most management attention. Events with high probability but low severity are closely related with lack of efficiency-oriented management culture. In contrast, events that are less likely but expose a bank a high impact – such as fraud, counterparty withdrawals, system breakdowns – are the main source of operational risk and these tpyes need to be focused. After mapping operational risks on the matrix, banks should work on what risks are worthwhile to insure and what types of insurance policies.

4.2. Computing capital saving by insurance

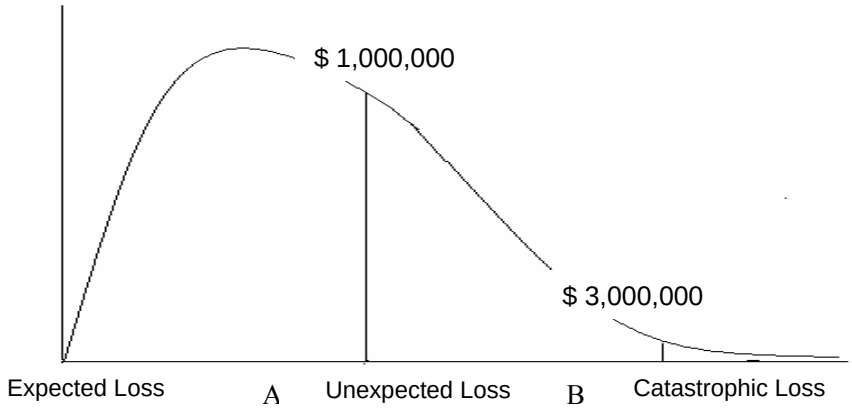
Insurance tools don't reduce the probability of risk but only decreases the economic impact of the risk for an exchange of the premium paid for the policy. Figure 2 indicates the effect of purchasing insurance on the bank's total loss distribution.

Figure 2: Effects of insurance on the loss distribution



Insurance has an effect of decreasing the standard deviation of the loss distribution, which signifies unexpected loss amount of the bank. Premium of the policy is determined as the sum of expected loss and administrative expenses including the profit of the insurer (Scott H., ve Jackson, H., 2002). When figure 2 is analysed, it is viewed that the expected losses insrease because of the insurance loading on the premium including all administrative expenses – distribution costs, underwriting costs and the premium paid. Besides, the risk level is reduced in contrast to the increase in cost of insurance to bank. Basel II requires banks calculate an amount of economic capital for covering expected and unexpected losses. Figure 3 indicates a bank's amount of capital required for internal fraud losses, if not insured.

Figure 3: Required capital for internal fraud without insurance coverage

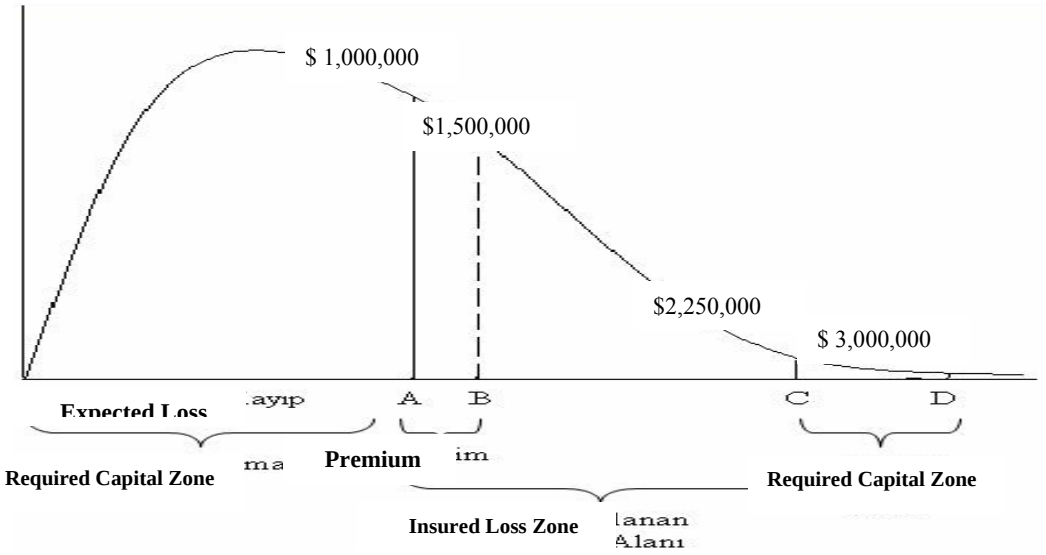


Required Capital = Expected Loss + Unexpected Loss
= $ 1,000,000 + $ 2,000,000
= $ 3,000,000

The bank needs a required capital of $3,000,000 for its total of expected and unexpected losses. Figure 4 depicts the situation where insurance is obtained covering losses between

points B and C if the bank purchases bankers blanket bond to transfer some of its internal fraud risks. The policy agrees to cover the losses between $1,000,000 – $2,250,000. The bank pays a premium of $500,000 for the policy.

Figure 4: Required capital after insuring losses for internal fraud



The insurance policy covers the internal fraud losses in the range of $1,000,000 – $2,250,000. The A-C area in Figure 4 indicates the insured loss range of the bank. Since the bank pays a premium of $500,000, this amount is deducted from the coverage amount and included in the required capital amount. Under the light of this information, the required capital is calculated as $2,250,000 shown below.

Required Capital = Expected Loss + Premium + Uncovered Unexpected Loss
= $1,000,000 + $500,000 + $750,000
= $ 2,250,000

The operational risk matrix in Table 3 could be prepared by using the internal data of a hypothetical bank. Each cell of the matrix indicates the operational loss amount incurred. The effects of insurance on capital required can be explained over this data. Basel Committee recommends all banks to constitute risk matrices considering their own operational risk factors. Thus, Table 3 exhibits an operational risk matrix with 80 cells consisting of 8 business lines and 10 operational risk factors. Human factor is grouped into two as human error (HI) and human fraud (H2); system factor is grouped in two as system development and application risk (S1) and system security risk (S2); processes are grouped in four as internal or external reporting risk (P1), project risk and change management risk (P2), lack of control for physical assets (P3), unidentification of responsibilities and authorities (P4); and finally external factors are grouped in two as political risk (E1) and external fraud and criminal activities (E2).

Table 3: Operational risk matrix of the bank (operational losses in dolar amount)

Risk Factor / Business Line	H1	H2	P1	P2	P3	P4	S1	S2	E1	E2
Corporate Finance	-	-	-	-	-	-	-	-	-	-
Trading and Sales	256,000	435,000	50,000	110,000	1,200,000	-	180,000	262,000	108,000	250,000
Retail Banking	1,000,000	250,000	145,000	515,000	470,000	248,000	145,000	198,000	100,000	428,000
Commercial Banking	694,000	-	220,000	147,000	2,885,000	422,000	255,000	105,000	--	-
Payments and Settlements	300,000	420,000	345,000	78,000	397,000	185,000	245,000	222,000	204,000	442,000
Agency Services	250,000	250,000	100,000	404,000	-	222,000	50,000	255,000	24,000	128,000
Asset Management	200,000	500,000	75,000	246,000	-	176,000	125,000	200,000	64,000	500,000
Retail Brokerage	300,000	145,000	65,000	-	48,000	247,000	-	258,000	-	252,000
Risk Factor Total	3,000,000	2,000,000	1,000,000	1,500,000	5,000,000	1,500,000	1,000,000	1,500,000	500,000	2,000,000
Total Risk	$ 19,000,000									

As an option, the bank considers to use the risk mitigating effect of insurance and purchases three policies. The first policy is a bankers blanket bond policy with a limit of $4 million and deductable $1 million. The net coverage of this policy is $3 million. The policy covers all internal and external frauds. The second policy is the directors' and officers' liability policy with a limit of $3 million, deductable $0.75 million and a net coverage of $2.25 million. The third policy is the property insurance policy with a limit of $5 million, deductable $1 million and a net coverage of $4 million.

Table 4 indicates the insurance policies that the bank purchases and the coverages.

Table 4: Coverages of the insurance policies

Insurance Policy	Operational Risks Covered	Risk Exposure	Deductable	Net Coverage
Banker Blanket Bond	Internal Fraud (H2)	$ 2,000,000	$ 500,000	$ 1,500,000
	External Fraud (E2)	$ 2,000,000	$ 500,000	$ 1,500,000
Directors & Officers'Liability Policy	Human Error (H1)	$ 3,000,000	$ 750,000	$ 2,250,000
Property Insurance	Lack of Control for Physical Assets (P3)	$ 5,000,000	$ 1,000,000	$ 4,000,000

The firm reflects the possibility of failure to realise claims or delays in payment by discounting the effect of insurance with the haircuts. The bank applies a haircut of 50% for banker blanket bond and directors' and officers' liability policy and 20% discount to its property coverage. Table 5 summarizes the bank's net risk exposure after insurance.

Table 5: Net risk exposure after insurance

Risk Factor	Risk Exposure	Effective Insurance Coverage	Haircut	Adjusted Insurance Coıverage	Net Risk Exposure
H1	3,000,000	2,250,000	50%	1,125,000	1,875,000
H2	2,000,000	1,500,000	50%	750,000	1,250,000
P3	1,000,000	0	-	-	1,000,000
P4	1,500,000	0	-	-	1,500,000
P5	5,000,000	4,000,000	20%	800,000	4,200,000
P6	1,500,000	0	-	-	1,500,000
S1	1,000,000	0	-	-	1,000,000
S2	1,500,000	0	-	-	1,500,000
E1	500,000	0	-	-	500,000
E2	2,000,000	1,500,000	50%	750,000	1,250,000
Total	**19,000,000**				**15,575,000**

If the bank purchases the insurance policies, it benefits from the declining effect of risk exposure and the reduced amount of capital required. Before purchasing insurance, the bank is incurred a risk exposure of $19 million while its exposure declines to $15.575 million after insuring. Basel Committee puts a cap of 20% on the discount from capital. Thus, banks are allowed to have a maximum discount amount of 20% of their total capital required for operational risk. Out of $19,000,000 of required capital, the bank has a claim to discount $3,800,000 ($19,000,000*0.20). Therefore, the capital need is calculated as $15,200,000. Overall, the insurance policies allow the bank to reduce its risk exposure as well as the economic capital needed for its operational risks.

Concluding Remarks

Banks used to incur a few types of risks in the times when their main operations were limited to only accepting deposits and providing loans. However, with the recent developments in banking sector, the banking operations have widened and more complex products have been introduced. Therefore, banks have exposed to number of new types of risks. The fundamental banking risks have been known as credit and market risks for a long time. The occurance of deep financial crises in the last two decades uncoverd operational risks that are mainly charged to technological developments and complexity of new financial products and services. The apperant intension of banks was to minimize the negative effects of these fast developments in the financial sector. Basel Committee

announced its new capital regulatory standards allocating adequate amount of capital to cover operational risks in June of 2004. However, capital is a limited resource for banks. Morover, Basel Committee recommended banks to use insurance policies to hedge their operational risks by allowing a maximum of 20% discount from capital required if and only if the bank uses one of the advanced operational risk measurement models. For long time the insurance policies covered only risks on natural disasters and fire. However, these rapid developments in banking sector encouraged insurance sector to launch various insurance policies to hedge banking risks such as fraud, employee error, property insurance, system problems etc. Banks agree to use insurance policies for both a protection from risks exposed and a reduction in regulatory capital. Beyond these, banks are recommended a cost-benefit analysis to make an effective decision on what types of insurance to be purchased. The analysis should include a comparison between insurance premium paid and deductable amount and net coverage of the policy. Banks should decide which insurance policy fits best its operational risk by critically analysing their historical loss data.

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