

MINISTRY OF EDUCATION OF THE REPUBLIC OF AZERBAIJAN
AZERBAIJAN STATE ECONOMIC UNIVERSITY
INTERNATIONAL MAGISTRATION AND DOCTORATE CENTER

“RISK MANAGEMENT IN BANKING”

ON THE TOPIC

MASTER THESIS

Ziya Ağayev Zəfər

BAKU – 2021

**THE MINISTRY OF EDUCATION OF THE REPUBLIC OF AZERBAIJAN
AZERBAIJAN STATE UNIVERSITY of ECONOMICS
INTERNATIONAL GRADUATE AND DOCTORATE CENTER**

Head of the Center

Assoc. Prof. Dr. Ahmadov Fariz Saleh

_____ **sign**

“ _____ ” _____ **2021**

MASTER DISSERTATION

On the topic

“RISK MANAGEMENT IN BANKING”

Code and name of Programme: 060403 Finance

Specialisation: Financial Management

Group: 654

Master`s Student:

Ziya Aghayev Zafar

_____ **sign**

Scientific Supervisor:

PhD. in Econ. Elsevar Guliev Nizami

_____ **sign**

Program Manager:

PhD. In Econ. Valiyev Jabrayil Khalil

_____ **sign**

Head of the Department:

Dr.of Econ. Prof. Kalbiyev Yashar Atakishi

_____ **sign**

BAKU - 2021

Elm andı

Mən Ziya Ağayev and içirəm ki, “Risk management in banking” mövzusunda magistr dissertasiyamı elmi etika və istinad qaydalarına tam uyğun və bibliografiyada istifadə etdiyim bütün mənbələri əks etdirərək yazdım.

“BANKÇILIQDA RİSKLƏRİN İDARƏ OLUNMASI”

XÜLASƏ

Tədqiqatın aktualığı: Bankçılıqda risklərin idarə edilməsi, bankların riskə əsaslanan siyasət və təcrübələri həyata keçirməsinə imkan verən bütün risk idarəetmə prosesləri və modellərini müəyyənləşdirir. Riskləri ölçmək, izləmək və nəzarət etmək üçün lazım olan üsulları və idarəetmə vasitələrini əhatə edirlər.

Tədqiqatın məqsədi: Tədqiqatın məqsədi bank sistemində risk menecmentini öyrənməkdir.

İsdfadə olunmuş tədqiqat metodları: Tədqiqat işi keyfiyyətli tədqiqat metoduna əsaslanır və məlumatların toplanması ilkin və ikinci dərəcəli məlumatlardan ibarətdir.

Tədqiqatın informasiya bazası: Tədqiqat zamanı maliyyə hesabatları, Dünya Bankı qanunvericiliyinin normativ aktları, Bazel Komitəsinin kredit təşkilatlarında risklərin idarə olunması ilə bağlı tövsiyələri istifadə edilmişdir.

Tədqiqatın məhdudiyyətləri: ABB-nin rəsmi saytlarında yayımlanan maliyyə hesabatlarından başqa risklərin idarə olunması ilə bağlı heç bir məlumat yoxdur. Çünki bu bir bank sirridir.

Tədqiqatın elmi yeniliyi və praktiki nəticələri: Tədqiqatın nəticələri aşağıdakı elementləri müəyyənləşdirməyə imkan verir:

- iqtisadi kateqoriya kimi riskin xüsusiyyətləri nəzərə alınmaqla;
- bank sistemində risklərin idarə edilməsinə dair müəyyən yanaşmalar;
- mənfi nəticələrini azaltmaq üçün riskə məruz qalma metodlarının açıqlanması;
- bank sistemində sahibkarlıq risklərinin idarə edilməsi modelinin inkişafına imkan verən idarəetmə davranışının mürəkkəb təbiətinə əsaslanan risklərin idarə edilməsinin prinsip və istiqamətlərini aydınlaşdırdı.

Nəticələrin istifadə oluna biləcəyi sahələr: Risklərin idarə edilməsi metodologiyasının təkmilləşdirilməsinə dair dissertasiyanın əsas müddəaları, tövsiyələri və nəticələri bank təşkilatlarına risklərin idarə edilməsində istifadə olunan məlumatların etibarlılığını və səmərəliliyini artırmağa imkan verəcəkdir.

Açar sözlər: bank, risk, idarəetmə, maliyyə, müəssisə riskləri.

“RISK MANAGEMENT IN BANKING”

SUMMARY

The actuality of the subject: Risk management in banking designates the entire set of risk management processes and models allowing banks to implement risk-based policies and practices.

Purpose and tasks of the research: The purpose of the research is to study the risk management in banking system.

Used research methods: This research is based on qualitative research method and the data collection is done of primary and secondary data

The information base of the research: The study used financial statements, normative acts of the World Bank legislation, recommendations of the Basel Committee on risk management in credit institutions.

Restrictions of research: There is no information on risk management other than the financial statements published on the official websites of the IBA. Because this is a bank secret

The novelty and practical results of investigation: The main provisions, recommendations and results of the dissertation on improving the methodology of risk management will allow banking organizations to increase the reliability and efficiency of information used in risk management.

Scientific-practical significance of results: The results of the investigation allow to identify the following elements:

- given the characteristics of risk as an economic category;
- disclosure of methods of exposure to risk to reduce its negative consequences;
- clarified the principles and directions of risk management, based on the complex nature of management behavior, allowing the development of management model of entrepreneurial risks in the banking system.

Keywords: banking, management, financial, enterprise risks.

LIST OF ACRONYMS

EAD	Exposure at Default
GDP	<i>Gross Domestic Product</i>
GMO	<i>Genetically Modified Organism</i>
LGD	Loss Given Default
PD	Probability of Default
PTM	Program of Targeted Measures
RMD	Risk Management Department

CONTENT

INTRODUCTION	8
I CHAPTER. PRINCIPLES OF BANKING	11
1.1. Financial intermediation as a source of risk.....	12
1.2. Risk management and traditional bank regulation.....	24
1.3. Risk sharing approaches and alternative banking	36
II CHAPTER. TAXONOMY OF RISK	43
2.1. Philosophy of risks	43
2.2. Policies to reduce risks	55
III CHAPTER. RISK MANAGEMENT IN BANKING	63
3.1. Credit risk management	63
3.2. Interest risk management	69
CONCLUSIONS AND RECOMMENDATIONS	71
REFERENCES	75
List of Table	80
List of Figure	81

INTRODUCTION

The actuality of the subject. It is known that success in the business world, including in the banking system, decisively depends on the correctness and validity of the chosen strategy. Even in the most favorable economic conditions for any organization, there is always the possibility of a crisis. This opportunity is associated with risk. Risk is inherent in any area of human activity, which is associated with many conditions and factors that affect the positive outcome of decisions made by people.

The banking system is characterized by weak protection against multiple risks and, therefore, by low functional potential. Thus, banking activity in a market economy is subject to a significant number of risks that can not only worsen the performance of the bank, but also lead to bankruptcy. To survive in the conditions of market relations, you need to decide on the introduction of technical innovations and on bold non-trivial actions, and this increases the risk of an adverse event. Therefore, it is very important to conduct a timely risk analysis. Risk analysis can include a variety of approaches to dealing with problems caused by uncertainty, including identifying, assessing, controlling and managing risk. In other words, risk analysis must be linked to understanding what might happen.

Despite the significant amount of work on the problem of risks, scientific developments consider mainly theoretical aspects and do not always relate to the practical side of the activities of enterprises. Until now, there is no generally accepted classification of risks for banking organizations, the specifics of risk analysis have not been reflected, and methods of risk management and minimization have not been substantiated. The importance of practical developments in the formation of a risk management system in banking organizations determined the relevance of the topic of the master's study.

Problem setting and level of learning: The theoretical and methodological basis of the study is the dialectical method and the provisions of modern economic theory, the conceptual foundations of the theory of financial analysis, economic laws, methods of analysis, forecasting and modeling of economic processes. The

issues of risk management in modern conditions and the methodology of their analysis in the bank have occupied and continue to occupy a leading place in the research of Azerbaijani and foreign scientists. These issues are highlighted in the works of Azerbaijani scientists-economists: S.M. Sabzaliev, S.M. Yagubov, G.A. Jafarli, G.A. Abbasov, A.I.Dashdemirov, N.M. Ismailov, R.N. Kazymov, Ch.R. Yuzbashov, and also considered in the works of Russian and foreign scientists-economists: Kazakova N.A., Granaturov V.M., Chuev I.N., Kirieva N.E, Baldin K.V., Lavrushin O I.I., Valentseva N.I., Kavushkin S.N., Tepman L.N. and others.

The study studied the regulatory acts of the banking legislation of the Republic of Azerbaijan and the Central Bank of Azerbaijan, the recommendations of the Basel Committee on risk management in credit institutions, as well as scientific works on various aspects of the research topic under consideration.

The purpose and objectives of the study: The purpose of the master's work is to study the theoretical and methodological foundations of management and economic analysis of risks in modern conditions, the development of methodological and practical recommendations for risk management in banking organizations.

For this purpose, this study has the following objectives:

- ❖ To identify, understand and draw a chain of causality between risk management policies in practice of banks and different types of risk in banks;
- ❖ To assess the effectiveness of risk understanding within the staff of banks;
- ❖ To assess the potency of risk identification, risk assessment and analysis, risk monitoring and controlling within the banks;
- ❖ To examine the important aspects of risk management practices of banks;
- ❖ To investigate the relationship between the risk management and performance of the banks.

The object and subject of the research: The subject of the study is the identifying keys for effective risk management in banking. The object of the research is the Pasha bank.

Research methods: This research is based on qualitative research method and the data collection is done of primary and secondary data

Qualitative data collection allows collecting data that is non-numeric and helps us to explore how decisions are made and provide us with detailed insight. For reaching such conclusions the data that is collected should be holistic, rich, and nuanced and findings to emerge through careful analysis.

Statistical analysis was also used in the study.

Text analysis is a data analysis method that is distinctly different from all other qualitative research methods, where researchers analyze the social life of the participants in the research study and decode the words, actions, etc.

There are images also that are used in this research study and the researchers analyze the context in which the images are used and draw inferences from them. In the last decade, text analysis through what is shared on social media platforms has gained supreme popularity.

Observation, as the name implies, is a way of collecting data through observing. Observation data collection method is classified as a participatory study, because the researcher has to immerse herself in the setting where her respondents are, while taking notes and/or recording.

Advantages of observation data collection method include direct access to research phenomena, high levels of flexibility in terms of application and generating a permanent record of phenomena to be referred to later. At the same time, observation method is disadvantaged with longer time requirements, high levels of observer bias, and impact of observer on primary data, in a way that presence of observer may influence the behavior of sample group elements.

The information base of the study: The study used financial statements, normative acts of the World Bank legislation, recommendations of the Basel Committee on risk management in credit institutions.

The limitation of the study: There is no information on risk management other than the financial statements published on the official websites of the IBA. Because this is a bank secret.

Scientific novelty of the research: The main provisions, recommendations and results of the dissertation on improving the methodology of risk management

will allow banking organizations to increase the reliability and efficiency of information used in risk management.

The results of the investigation allow to identify the following elements:

- given the characteristics of risk as an economic category;
- defined approaches to risk management in the banking system;
- disclosure of methods of exposure to risk to reduce its negative consequences;
- clarified the principles and directions of risk management, based on the complex nature of management behavior, allowing the development of a model of management of entrepreneurial risks in the banking system;
- defined the specifics of the formation and functioning of risk management systems in the analyzed commercial bank, based on the accounting of external and internal factors that allow integrating risk management in the overall management process;
- presented methods of risk analysis;
- stress testing of the credit risk of a commercial bank.

Practical significance of the results and areas of application: The elements of stress testing proposed in the work can be used by organizations in the formation of a risk management system; when analyzing and assessing the profitability and riskiness of new types of services, their competitiveness; in the formation of the client base of enterprises in the service sector. The increased attention to the problem of risk, the need for a close study of the essence of risk and the factors that have the most significant impact on the degree of risk in modern conditions are not accidental. This is explained by the increasing degree of uncertainty of the modern socio - economic system, the insufficiently stable situation in the country. Consequently, the risk is an inevitable factor in the financial and economic activities of the organization.

I CHAPTER. PRINCIPLES OF BANKING

1.1. Financial intermediation as a source of risk

Financial intermediaries are economic agents who specialise in the activities of buying and selling (at the same time) financial contracts (loans and deposits) and securities (bonds and stocks). Note that financial securities are easily marketable, while financial contracts cannot be easily sold (marketed). Banks form the largest financial institution in our economy. They accept deposits (loans by individuals or firms to banks) and make loans (sums of money lent by banks to individuals or firms): therefore, they borrow deposits from people who have saved and in turn make loans to others. In recent years, other financial intermediaries, such as mutual funds, pension funds, insurance companies and investment banks, have been growing at the expense of banks.

The current stage in the development of financial intermediation is associated with the emergence of venture investment and the widespread use of innovative technologies using the Internet. New phenomena in the financial sphere, on the one hand, have significantly changed the activities of traditional financial intermediaries, in particular, commercial banks and brokerage houses, and on the other hand, predetermined the emergence of new subjects of intermediary activity - financial and technological companies (fintech companies); financial supermarkets, sites for the sale of receivables. At the same time, it is the widespread use of new technologies that predetermined the trend towards the development of direct contacts between the owners of financial resources and their potential users without the participation of intermediaries. Obviously, this trend can reduce the scale of intermediary operations in the modern economy.

The factors of development of financial intermediation include the effect of asymmetry of market information; minimization of operating costs; minimization of the risks of placing funds in the financial system. The asymmetric effect of market information is an important feature of the modern economy. It is expressed in the unequal availability of data on the factors of price formation for sellers and buyers (Ariccia G. 2015).

The problem of information asymmetry also exists in the relationship between the savers who form money savings and business structures that need financial resources to implement investment projects. It is obvious that specific savers experience significant difficulties in assessing future income from investments planned by business structures. For them, expensive expert assessments of planned investment projects are virtually unavailable. But such costs can be carried out by banks as intermediaries between savers and investing companies. However, even if there is a commercial bank as an intermediary, the risk does not disappear completely. This is due to the fact that the ability of banks to assess the future profitability of specific investment projects is also associated with the asymmetry of information - in this case, between the borrower and the bank. This asymmetry is determined, first, by the incompleteness of information provided to the bank by a potential borrower; secondly, the volatility of both the macroeconomic situation and the conjuncture of specific commodity markets. It is important to take into account that changes can occur not only as a result of the strengthening or weakening of factors common for such areas of the economy, but also the emergence of new factors predetermined by the creation of modern technologies, the expansion of the scope of specific products, and an increase in the capacity of sales markets.

Asymmetry of information significantly increases the likelihood of an erroneous assessment by a commercial bank of the prospects for the implementation of a specific investment project. In this case, the credit risk may materialize, and the borrowed funds will not be returned to the bank with interest payments. The increased risk associated with lending is forcing a commercial bank to raise interest rates. This method of reducing credit risk leads to a decrease in the profitability of the investment project being implemented for the loan recipient. As a result, the risk of non-payment of interest income and loan default increases.

The effect of information asymmetry also manifests itself at the stage when the borrower uses the loan he has received. The attracted credit resources can be used by their recipient insufficiently efficiently, without due diligence, as well as in a fundamentally changed market situation, for example, with significant turbulence,

which means the instability of market indicators, in particular, effective demand. In such conditions, the borrower may be temporarily insolvent and even go bankrupt with corresponding losses for the creditor bank.

Commercial banks as financial intermediaries have the right to exercise control over the recipients of credit resources, in particular, to monitor the validity of payments and the scale of incoming, that is, incoming to the settlement accounts of borrowers, cash flows. The fact that banks have such opportunities provides them with significant competitive advantages over financial market participants who offer debt securities to potential investors. But the higher risks associated with investments in debt securities are taken into account in interest rates and, accordingly, provide owners with a higher profitability compared to bank deposits.

Reducing the effect of information asymmetry is an important condition for increasing the financial stability of business structures. In particular, the very fact that a particular company attracts a loan from a large commercial bank capable of studying a significant amount of data on the results and prospects of a particular company, usually entails simplifying its access to the resources of other financial intermediaries.

The effect of asymmetry of market information means that there are two groups of participants in the financial market: those who have the necessary information about the current market situation and the formation of price dynamics, and who do not have such information. Accordingly, an increase in the efficiency of the market functioning and the stability of pricing processes are predetermined by the stability of the processes of transferring market information from the first of the above groups of participants to the second.

The actions of informed participants in the financial market are reflected in the dynamics of the prices of assets traded on this market. Therefore, uninformed participants are able to obtain the necessary information from the analysis of the actions of informed participants. But it is obvious that the dynamics of exchange rates and exchange quotes contains only information about factors and trends that have manifested themselves in a specific segment of the financial market in the past

period. This data is clearly not enough to make decisions on the conclusion of market transactions in the current period. The establishment of this fact allowed S. Grossman and J. Stiglitz to conclude that the dynamics of market prices does not allow uninformed market participants to receive complete information about the state of the market situation (Grossman S., Stiglitz J. 1980).

Consequently, the availability of information and the reduction of the costs associated with its receipt increase the number of informed market participants who are able to apply effective management decisions in specific market conditions.

In addition to the effect of asymmetry of market information, a factor in the development of the financial intermediation system is the minimization of operating costs associated with financial transactions. Cost minimization is ensured, first of all, by an increase in intermediary operations. These transactions use standardized methods and procedures to reduce operating costs.

An important factor in the development of financial intermediation is the minimization by business entities of the risks of placing funds in the financial system. This direction of asset management ensures the optimization of the “risk-reward” ratio as a condition for achieving maximum profit during the business cycle, characterized by a change in trends in the economic environment. The modern features of financial intermediation are procyclical; dependence on global economic processes; exposure to regulatory arbitrage.

The procyclical nature of financial intermediation is manifested in its widespread use during periods of economic booms. The increase in demand for financial resources predetermines the intensification of the processes of their redistribution. In these conditions, in particular, the operations with debt securities on the capital market are increasing. Dependence on global economic processes as a feature of financial intermediation is associated with intercountry and interregional redistribution of financial resources. In particular, significant financial resources accumulated in countries with balance of payments surpluses flow through intermediaries to countries that lack financial resources to finance balance of payments deficits.

Exposure to regulatory arbitration as a modern feature of financial intermediation lies in the fact that the main trends in this area are significantly influenced by differences in the regulation of financial relations in specific countries. The use by specific countries of more liberal regulatory regimes for financial intermediation leads to the flow of financial resources to these countries from states with relatively strict regulatory regimes.

The theoretical and methodological difficulty of disclosing the essence of banking risk is largely due to the fact that it is either considered from a general point of view, when they talk about the presence of an intermediary risk, as such, or when the emphasis is only on the study of risk arising at the last stage - credit risk. Without denying the importance of such approaches, we note that the risk is practically not considered from the standpoint of its translation, transmission, or, as they say today, its "intermediation". This process is due to the fact that "Financial flows and risks are linked together and are simultaneously transferred from one market participant to another, that is, risk is mediated. At the same time, some actors lose their intermediary functions, while others, on the contrary, join them, transferring risk to each other." (Drozdovskaya L.P., Rozhkov Y.V. 2010: p.39).

Risk transfer is often viewed by economists not as a process consisting of a number of interrelated stages of intermediation, but only as a separate element of avoiding risk, leveling it for example, transferring risk to an insurance company. Another methodological problem is related to the fact that risk intermediation is not associated with a change in the liquidity of money that dominates the financial flows of a particular bank (other flows exist, for example, in the form of securities: bills of exchange, etc.).

Consideration of banking risk through the prism of its intermediation, moreover, when the concept of "mass of risk" is used, it makes it possible to clearly see that probability as an indicator of a measure of risk cannot be the only criterion that reveals the essence of this phenomenon. The risk cannot be just a hazard. The latter assumes complete risk uncertainty. It is no coincidence that there are expressions like "A car is a source of increased danger." The danger always exists,

but it is only a qualitative assessment. Risk, however, is already quantitative (probability, mass of risk) assessment, although such an assessment in terms of the degree of reliability does not always satisfy the investor or lender. The frequency of economic crises, when there are no longer isolated ones (this is recognized as a common phenomenon in the market space), but massive bankruptcies and defaults allows us to assert that risks have mutational properties. Mutation is an intrinsic attribute of risk.

Let us consider in detail how risks arise in relation to our idea of the existence of not two traditional, but three stages of mediation, as well as using published scientific materials on risk intermediation and the mass of risk.

The risks of mediation only on the surface of the phenomenon look like a consequence of an incorrectly made managerial decision. In fact, they are a consequence of violation of the relevant principles. Since the violation of the principles of deposit (deposit) and lending is well considered in the literature of the Soviet period and in the publications of modern authors, this problem will only be touched on fragmentarily. In addition, we introduce assumptions: a) business continuity of a commercial bank; b) passive operations of the bank are limited to attracting deposits from citizens (households); c) active operations (investment) are considered only from the point of view of lending to the economy and the population. The last assumption is related to the fact that lending dominates in active banking operations. This, incidentally, testifies to the low diversification of assets of credit institutions.

Until the stage of bank deposit, a citizen who owns a certain amount of cash is subject to numerous risks, although their number and weight can be calculated. This is a tort risk when thieves and fraudsters can take possession of money (steal from an apartment, from a safe at work). This is a natural and climatic risk - the home of a given citizen can, for example, be flooded with rain (flood) and the money will become worthless. In the event of a fire or earthquake, a citizen also risks losing his unorganized savings. These factors can be taken into account by applying, for example, the methodology of actuarial calculations, which is what insurance

organizations do in life insurance, using probability theory, demographic statistics and long-term financial calculations.

Accounting for inflationary risk is also important. In this case, and without using a cumbersome mathematical apparatus, taking into account only the forecasts of government agencies, a citizen can calculate how much he can lose over a certain period. Taking into account probable events and an accurate forecast that inflationary risk will certainly come true, it is possible to calculate the mass of risk. Let's say a citizen intends to keep 100 thousand manats out of the financial, first of all, the banking system for a year. In the simplest case, without taking into account tort and other risks, the probability of which is not so great, he will calculate, using the government's annual 10 percent inflation forecasts, that his losses will amount to 10 thousand manats.

Such a situation forces a reasonable citizen to look for a conclusion, and in most cases typical for Azerbaijan he brings money to a commercial bank, becoming a private informal investor of the deposit type, that is, a depositor.

After the conclusion of the deposit agreement, the citizen transfers (broadcasts) the indicated risks to the bank, receiving others in return. The last category, for example, includes the risk of partial non-return of the deposit if the deposit exceeds 700,000 manats (Usoskin V.M., Belousova V.Y., Kozyr I.O. 2017).

The individual continues to bear the burden of inflationary risk, although not to the extent that he kept the money at home.

Thus, at this stage, the financial flow in the amount of 100 thousand manats was linear, moving from the citizen to the cash desk of the credit institution. At the same time, the risks of a citizen were actually transmitted to the bank and also, but already as if virtually (mentally imagined or ideally, similar to the performance of the function of a measure of value by money), in a modified form, returned back to the citizen, but already in a smaller amount.

The bank, accepting this deposit, takes on most of the risks of the citizen, undertaking under the deposit agreement to fulfill a number of mandatory conditions, which for the client are essentially the principles of lending, and for the

bank the principles of deposit. The nature of the contractual relationship between the citizen and the bank can be defined as the relationship between the depositor and the debtor. The most typical and most dangerous risk at the stage of deposit is a situation for a credit institution, which abroad is called bank runs as an element of behavioral risks (Semyonova M.V. 2010).

What happens to the money at this stage? How is their liquidity changing? For this, it is necessary to consider the structure of the money supply and monetary aggregates, in relation, of course, to the risks of the intermediary process.

Money in cash is represented by the monetary aggregate M0. This money is called "absolute liquidity". They are accepted everywhere within a particular country, which is officially guaranteed by the state. The risks of their losses from bankruptcies of market actors are zero, but since the absolute liquidity of cash in the conditions of circulation of "fake" money, that is, not gold money, is conditional, they are practically not protected from country defaults and inflation.

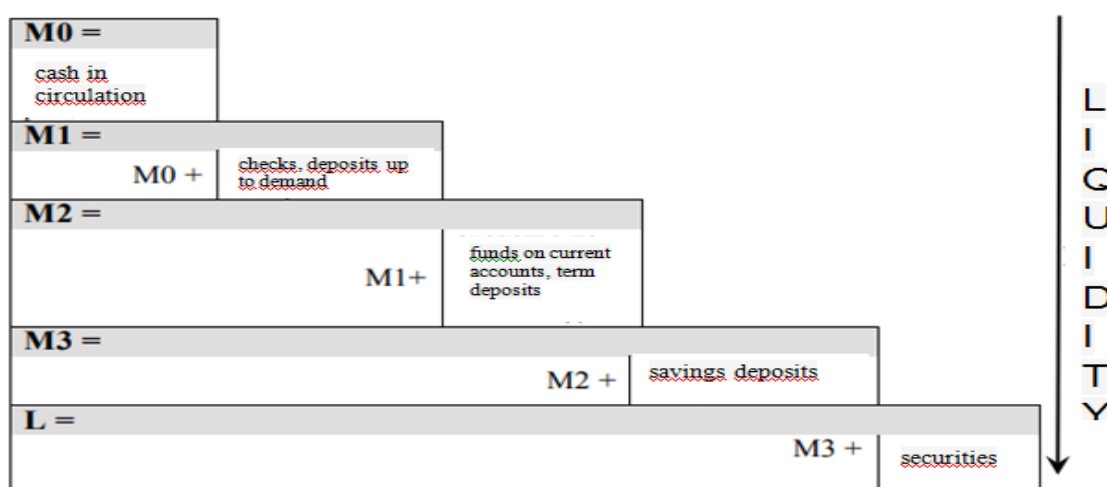
In the process of transferring cash in the form of a deposit to the bank's cash desk, an individual reduces the risks of losing money, while acquiring the opportunity to receive income in the form of a deposit interest. "In return", instead of "absolute liquidity", he receives the bank's obligation to pay the principal and interest on it. This is precisely the dialectical unity and opposition of money and risks at the initial stage of the first stage of the intermediate process - the transfer of cash to the bank's cash desk. Note that monetary aggregates are a hierarchical system - each subsequent aggregate includes the previous one, while changing its liquidity. Abroad most often.

At first glance, the transfer of money by a citizen from a salary account (account on demand) using a plastic card or in another way to a deposit account does not change the liquidity of money. A similar situation is observed with the funds of legal entities, which are obliged to keep money in accounts with credit institutions, and the liquidity of these funds is not a priori absolute. Consideration of the process of loss of liquidity of money at the initial stage of the first stage of the intermediate process in this case becomes meaningless.

Note: only at the initial stage! The final stage of the first stage is interesting for our study of mediation processes. At the final stage of the first stage of the intermediate process (bank deposit), money is in another “dimension” of liquidity, it belongs to a different monetary aggregate. After all, we are talking about non-cash funds.

Note that monetary aggregates are a hierarchical system - each subsequent aggregate includes the previous one, while changing its liquidity. The following units are most often used abroad (Figure 1).

Figure 1: Hierarchical system of monetary aggregates



Source: Usoskin V.M., Belousova V.Y., Kozyr I.O. 2017

The central bank, publishing statistics related to monetary regulation, does not highlight the M1 monetary aggregate. The bank prefers to use the M2 aggregate, which it calls “money supply”. In the composition of the money supply, there are: a) M0 and b) the indicator “non-cash funds”.

So, attracting money resources of the population, that is, by forming liabilities, a commercial bank modifies the liquidity of money, actually takes on some risks, and virtually (ideally) returns others to citizens. We foresee the objection of our position in relation to legal entities, because, according to the current rules, they have a smaller amount of funds in cash compared to non-cash.

The second objection can be formulated as follows: any non-cash funds belonging to a specific client-legal entity within the same bank, regardless of which accounts they are stored on, have the same liquidity. We do not take into account the

first objection because of, indeed, not so large amounts of funds stored in the cash desks of enterprises and organizations.

On the second, let us state the following counterargument. The money in the current account and the money in the deposit account of a particular legal entity have, in our opinion, different liquidity. In the first case, for investment purposes with a long repayment period, the bank uses these funds very carefully, making calculations of the minimum balance of such funds, since the client can claim them at any time, in the second, the bank does not experience such inconveniences. Moreover, a client-legal entity, unlike a citizen, cannot withdraw funds from a deposit account, unless otherwise provided by an agreement (Zverkov A.I., Zverkova T.N. 2014).

The conclusion about the different liquidity of funds of one client, who has different accounts within a particular bank, has a deep theoretical meaning. Not only do the risks of both the client and the bank change in the process of conducting internal postings to accounts, but we can also say that the very process of conducting such postings (Current account → Deposit account) is a process of internal intermediation.

Indeed, if at the slightest signs of loss of liquidity by the bank, the client can withdraw money from his current account to another bank, then it will be difficult or even impossible to unblock the deposit account. Doesn't this mean that the liquidity of the client's funds in different accounts is different? Our conclusion is also supported by the fact that the money of a legal entity (and a citizen!) Held in deposit accounts cannot be used directly for settlements with counterparties, the state budget, etc.

Let us make the necessary explanation. Speaking of monetary indicators, we make a certain assumption, because these aggregates are calculated at the country level, and not at the level of an enterprise or individual citizen (for M0). Therefore, we should not talk about money as an economic category, but about cash flows. After all, the cash flow carries not only qualitative, but also quantitative components, including the time of its movement through the intermediate stages. That is why we

talked about the optimal speed of mediation as a principle of mediation. However, for the sake of simplicity, we consider money and cash flows as synonyms in this perspective.

Technologically, along with the formation of liabilities, the bank forms a loan portfolio. By lending to a specific borrower, the bank again changes the liquidity of the cash flow, the risks are also modified again. Simply put, the banking risks of the deposit stage add up to the risks associated with the lending process. In addition, “All existing forms and methods of hedging in fact only mean the transformation of one type of risk into another (as a rule, into credit risk) and / or diversification of risks between a large number of participants” (Baidina O.S., Baidin E.V. 2010: p.31).

That is, both risk intermediate and risk hedging (insurance) cannot eliminate risks. According to the well-known theory describing the relationship "risk-return", the absence of credit risk leads to the implementation of the formula: "no risk - no money". This means that the elimination of risks is possible only together with a complete rejection of income from credit transactions. It is clear that the continuity of the banking business does not allow to stop the lending process and completely remove the risks.

There are many definitions of the nature of credit risk. For example: “The credit risk of a bank includes the risk of a specific borrower and portfolio risk: - Credit risk - the risk of non-payment by the borrower (issuer) of the principal debt and interest due to the lender (investor) within the period established by the terms of the security issue (bonds, certificates of deposit and savings certificates, promissory notes, government obligations, etc.), as well as on preferred shares (in terms of fixed obligations to pay dividends). The source of credit risk under this definition is an individual, specific borrower.

- Credit risk is the likelihood of a decrease in the value of a part of a bank's assets, represented by the amount of loans issued and acquired debt obligations, or that the actual return on this part of assets will be significantly lower than the expected calculated level. In this case, the source of credit risk is the bank's loan portfolio as an aggregate of credit investments. The Central Bank stipulates that

credit risk refers to typical banking risks and considers it as" the risk of a credit institution incurring losses due to default, untimely or incomplete performance by the debtor of financial obligations to by a credit institution in accordance with the terms of the agreement" (Gomes T., & Khan N. 2018).

Simultaneously with the issuance of a loan and the emergence of credit risk, the liquidity of the financial flow for the bank is radically changing. Let us emphasize that it changes for a specific credit institution, and not for the banking system as a whole. For the banking system, funds have been and remain included in the category of "funds", even if the loan is transferred to the client's account with another bank. 162 But for this credit institution, the loan is of no interest in terms of liquidity. The bank, like the depositor at the stage of deposit, instead of money receives the obligation of the borrower to repay the loan. The money itself leaves the bank, being included in the national economic circulation.

It is for the above reason that massive loan defaults are so terrible in their consequences. Known principles of lending are violated. Risks from potential (ideal) turn into real ones, that is, into losses. Their real reverse movement arises. This is a kind of "negative" cash flow. Borrowers do not return to the bank, the bank does not return to depositors. The very purpose of the intermediation is perverted.

If we talk about the second stage of intermediate (translational), which is fleeting under normal conditions, then here violations of the principles we have identified are also reflected in the liquidity of money. The impossibility of "unfolding" this stage does not allow banks to start lending. This does not allow the credit institution to receive income, which leads to a violation of the principles of deposit and, therefore, the inability to timely pay off creditors on deposits and deposits. This usually occurs in a situation that bankers explain as "no one to lend"; it is a crisis of banks' confidence in economic entities. But it is trust that we put at the heart of the bank's intermediary function.

Violation of the principles of the translation stage is one of the reasons for the growth of money on correspondent accounts of commercial banks. This is a signal for the Bank to take measures to withdraw, in its terminology, "excess liquidity".

With regard to our reasoning, at the level of a particular bank, it is possible, by calculating the dynamics of the transformation ratio, to see how successfully this credit institution performs an intermediary function.

1.2. Risk management and traditional bank regulation

Risk - the likelihood, or rather the threat of the bank losing part of its resources, losing income or making additional expenses as a result of certain financial transactions. Banking risk is a situational characteristic of a bank's activities, reflecting the uncertainty of its outcome and characterizing the likelihood of a negative deviation of reality from the expected.

Since risk is only the possibility of getting a loss, i.e. there is always a greater or lesser likelihood that there will be no loss, but only profit (risk of gain), insofar as many banks cannot afford not to strive to get more and more profits, and, therefore, become more competitive in the market and more attractive to clients.

The possibility of obtaining high profits in the future is an incentive to carry out risky operations and, at the same time, an instrument of market competition, which "does" things in the market. The pursuit of high profits ultimately turns into strengthening and consolidation of some banks and weakening, absorption and bankruptcy of other banks. The market would not be a market if its participants did not take risks. The scale of bank capital is such that if one risky operation is successful, the profit from it can be so significant that for a long time it overlaps the size of losses from other small risky operations.

Banks strive to get the most profit. But this desire is limited by the possibility of incurring losses. The higher the expected return, the higher the risk. The relationship between the profitability of a bank's operations and its risk in a very simplified version can be expressed as a straight-line relationship. Risk taking is one of the main areas of banking. Banks succeed when the risks they take are reasonable, controllable and within the limits of their financial capabilities and competence.

An important organizational task is the creation in banks of a service for analyzing the economic situation on the market and economic examination of

commercial loans, which will allow assessing the real feasibility of conducting specific operations and coordinating the activities of all banking divisions. For an effective analysis of banking risks and the development of methods to reduce them, it is first necessary to subdivide risks by types and types, and then develop ways to reduce or eliminate specific risks.

The effectiveness of the organization of risk management largely depends on the classification. Risk classification should be understood as the distribution of risk into specific groups according to certain criteria in order to achieve the set goals. Scientifically grounded risk classification makes it possible to clearly define the place of each of them in the overall system. It creates opportunities for the effective use of appropriate methods, techniques for managing them (Aliiev B.Kh., Alikberova A.M. 2013).

According to the sphere of influence, risks are divided into external and internal, since the sphere of activity of a commercial bank itself is formed under the influence of both external conditions of the macro-environment and internal conditions of the micro-environment of a banking institution. Accordingly, external risks can be grouped by the width of the coverage area and the impact factor, while internal risks are grouped by the nature of banking operations, by the composition of the bank's customers and by the types of commercial banks.

Table 1: Classification of banking risks by main types

Group	Risk class	Risk category
External risks	Operating environment risks	Regulatory risks Competition risks Economic risks Country risk
Internal risks	Management risks	Fraud risk The risk of an ineffective organization; The risk of inability of the bank's management to make firm, reasonable decisions The risk that the banking reward system does not provide the appropriate incentive
	Financial services supply risks	Technological risk Operational risk The risk of introducing new financial instruments Strategic risk
	Financial risks	Interest rate risk

		Credit risk Liquidity risk Currency risk The risk of using borrowed capital
--	--	--

Mənbə: Aliev B.K., Alikberova A.M. 2013

External risks include risks that are not directly related to the activities of the bank or its contact audience. Depending on the impact factor, it is advisable to single out political and legal risks, economic risks and natural and natural risks among external risks.

Internal risks arise from the activities of the banks themselves and their clients. In turn, they are divided into risks in the main and auxiliary activities of the bank. The first ones represent the most common group of risks: credit, interest rate, foreign exchange and market risks. The latter include losses in the formation of deposits, risks of new types of activities, risks of bank abuse, risk of rating downgrades.

According to the time of occurrence, risks are divided into retrospective, current and prospective. The distribution of risks over time is of great importance for predicting the losses to be faced by the bank.

According to the degree (level), banking risks can be divided into low, moderate and full. The degree of banking risk is characterized by the likelihood of an event leading to the loss of funds by the bank for this operation, and is expressed as a percentage or coefficients (Aliev B.K., Idrisova S.K., Rabadanova D.A. 2014).

By the type of bank, the risks of commercial banks are divided into specialized, sectoral and universal. Each of them contains all types of risks, but the likelihood of their frequency and specificity depend on the type of the banking institution itself.

The activities of universal commercial banks are also universal. They are engaged in almost all types of banking services (credit, settlement and financial). Therefore, they have the entire scope of risks, but these risks are weighed. Universal banks are considered less risky.

Specialized commercial banks focus their activities on the provision of mainly some specific services, i.e. have a clearly expressed product orientation.

Risks by the composition of clients (small, medium and large) determine the degree of the risk itself. Thus, a small borrower is more susceptible to the

contingencies of the market economy than a large one. At the same time, significant loans issued to one large client are often the reason for bank bankruptcies.

According to the main factors of occurrence, banking risks are divided into economic and political. Political risks are risks caused by changes in the political environment that negatively affect the results of enterprises' activities. Economic risks are risks caused by unfavorable changes in the country's economy or in the economy of the bank itself or the country as a whole.

By the nature of accounting for transactions, banking risks are divided into risks on balance sheet and off-balance sheet operations; both those and others are divided into risks of active and risks of passive operations. The risks of active operations include interest rate and portfolio risks, inflation risks, credit, transport, leasing, factoring, etc. Risks related to passive operations include risks associated with an increase in the authorized capital at the expense of profit, loans received from other legal entities, deposit operations, etc.

Inflation risk is a risk that is determined by the life cycle of industries (Burlachkov V.K. 2012).

Leasing and factoring risks arise in the implementation of leasing and factoring operations.

Interest rate risk is the risk of a bank's losses due to an excess of interest rates on deposits over rates on loans (or a significant decrease in margin), as well as due to an increase in market interest rates on securities, which leads to their depreciation.

Portfolio risk - is the probability of loss for certain types of securities, as well as for the entire category of loans. Portfolio risks are divided into financial, liquidity, systematic and non-systematic.

Foreign exchange risk - or the risk of exchange rate losses, is associated with the internationalization of the banking market, the creation of transnational (joint) enterprises and banking institutions and the diversification of their activities and represents the possibility of monetary losses as a result of fluctuations in exchange rates.

Credit risk is the risk of the borrower's non-repayment of principal and interest (in a broader sense, this includes any bank risks associated with the failure of other market participants to fulfill their obligations to the bank). An expression of the degree of risk of credit operations is the highest interest rate on operations that have a credit nature (loans proper, factoring, accounting of bills, provision of guarantees) in comparison with other assets. Loan rates should compensate the bank for the cost of funds provided for the term, the risk of changes in the value of collateral and the risk of default by the borrower. The risk of default by the borrower is determined by a large number of factors combined into the concept of the client's creditworthiness: legal standing, financial position, client's reputation, quality of the offered collateral, forecast of the company's development, market risk, and so on. The correctness of the assessment depends on the validity of the choice of the assessment methodology, the timely response to changes in the client's financial condition.

Liquidity risk is the ability of financial assets to quickly turn into cash. The priority task - maintaining instant liquidity - is associated with the need to make customer payments on a day to day basis. The consequences of a loss of instant liquidity can be significant; there will be problems with clients and counterparty banks.

The risk of the capital structure - is that with a capital structure with a large share of items of revaluation of fixed assets, a bank that has invested significant funds of customers in credit operations with a maturity that exceeds the terms of raising funds when the market situation changes may incur additional costs (in case of rise in the cost of resources), and be bankrupt due to recognition.

Off-balance sheet risks mean that the bank will not be able to respond on issued guarantees, concluded transactions with securities, credit obligations, concluded foreign exchange transactions.

According to the possibilities of regulation, open and closed risks are distinguished. The bank is unable to localize open risks. Closed risks are regulated by pursuing a diversification policy, that is, through a wide redistribution of loans in small amounts provided to a large number of clients while maintaining the total

volume of the bank's operations; introduction of certificates of deposit; insurance of loans and deposits, etc.

Some authors distinguish, in addition to those considered, the following categories of banking risks (Aliev B.K., Idrisova S.K., Rabadanova D.A. 2011).

Market risk - closely related to interest rate and foreign exchange risks. It means possible losses, unforeseen expenses from changes in the market value of assets or liabilities, changes in the degree of their liquidity. Investments in securities are especially exposed to this kind of risk.

The risk of forming deposits (resource base) is closely related to market, interest rate and currency risks. When forming the resource base, the bank should take into account the likelihood of an increase in the costs of attracting resources in the event of a change in the situation on the financial market.

The risk of falling general market prices is the risk of losing income on any financial assets. Most often, it is associated with a fall in prices for all securities traded on the market at the same time. In countries with developed market economies, there are observer firms that constantly analyze the level of portfolio risk of various securities.

The risk of lost profits is the loss due to the failure to carry out any operation.

The bank assumes the risks of the operating environment as a regulated firm, which is a key link in the payment system. They combine the risks that guard the interests of the bank, but through which control is exercised over the bank, as well as those that are generated by the environment of a commercial bank: legislative risk, legal and regulatory risks, competition risks, country risk.

Governance risks include the risk of fraud by the bank's staff, the risk of ineffective organization, the risk of the bank's inability to make sound, sound decisions, and the risk that the bank's remuneration system does not provide adequate incentives. That is, the risks of this category are caused by insufficient qualifications of bank personnel, selfish goals pursued by bank employees.

Risks associated with the supply of financial services arise in the process of providing banking services and products and are divided into technological, operational, strategic and new product introduction risks.

Financial risks can be defined as follows: the more borrowed funds banks, joint-stock companies, enterprises, including joint banks, have, the higher the risk for their shareholders and founders. At the same time, borrowed funds are an important and profitable source of financing, since most often they are cheaper than issuing and selling additional circulations of securities. According to the accepted norms for borrowers, the ratio between own and borrowed funds - the debt ratio (D_r) - fluctuates within 0.2-0.3. This risk is closely related to the risk of leverage (leverage), which depends on the ratio of capital invested in securities with a fixed income level, with a non-fixed income level and the volume of the bank's entire fixed and working capital. The level of this risk is measured using the following formula (Laeven L., Valencia F. 2010).

$$ROE=ROA \times EM$$

where: ROA - return on assets, i.e. the level of efficiency of using all the bank's funds;

ROE - the level of efficiency in the use of equity capital;

EM - bank ownership ratio.

The above classification is complex and the criteria underlying the economic classification are aimed not so much at enumerating all types of banking risks, as demonstrating the existence of a certain system that allows banks not to miss certain types of banking risks when determining the aggregate amount of risks in the commercial and industrial spheres (Shtyrova I.A. 2004).

At the same time, one should not forget about the high degree of abstractness of any classification, and, consequently, about the close interconnection and interdependence of absolutely all types of risk.

Capital investment is always accompanied by a choice of options and an assessment of the degree of risk. To do this, it is necessary to quantify the amount of financial risk under alternative options and compare it. Financial risk, like any

other, is determined by the mathematically expressed probability of a loss, which is based on statistical data and can be calculated with a fairly high accuracy. To quantify the amount of financial risk, it is necessary to know all the possible consequences of any particular action (operation) and the likelihood of the consequences themselves. As applied to economic problems, the methods of probability theory are reduced to determining the values of the probability of occurrence of events and to choosing the most preferable from possible events, based on the largest value of the mathematical expectation. In other words, the mathematical expectation of an event is equal to the absolute value of this event, multiplied by the probability of its occurrence.

Strictly speaking, with a comprehensive risk assessment, one should establish for each absolute or relative value of the magnitude of possible losses the corresponding probability of occurrence of such a magnitude. In this case, the initial stage of the assessment should be the construction of a curve (table) of the probabilities of obtaining a certain level of profit (loss). But in relation to the activities of commercial banks, this is most often an extremely difficult task. Therefore, in practice, they are limited to simplified approaches, assessing the risk by one or several indicators representing generalized characteristics that are most important for the conclusion about the acceptability of the risk.

Risk management as a management technology is going through a period of its formation in Azerbaijan: professional associations and organizations are created, focused on solving specific problems in the field of risk management, conferences are regularly held in this area; large Azerbaijani companies representing various sectors of the domestic economy are initiating the creation of corporate risk management systems. Western consulting companies are actively involved in this process, offering models from the "best" foreign practice. In these conditions, the problem of forming a unified understanding of the goal of risk management, the terminology used, the organizational structure and the process of risk management itself, adapted to modern Azerbaijani conditions, becomes especially important.

World practice offers one of the approaches to solving this problem - standardization in the field of risk management.

Risk management standards provide for the unification of the terminology used in this area; components of the risk management process; approaches to building the organizational structure of risk management.

The process of deregulating the economy is one of the most important aspects of the transition to a market-oriented economy. Deregulation reduces the negative impact of excessive government interference while strengthening market mechanisms. The deregulation process in the European Union is currently characterized by the following factors (Oet M.V., Bianco T., Gramlich D., Ong S.J. 2013).

1) Using the so-called "new global approach", ensuring compliance with technical standards (regulations);

2) Selection by the EU countries of an appropriate conformity assessment procedure with the calculation of possible risks and, accordingly, possible protection methods.

3) EU regulation on options for technical standards for various trading partners to provide the required conditions for free trade.

4) Harmonization of conformity assessment procedures prescribed by various EU Directives.

5) Implementation of the professional certification and accreditation system.

6) Formation of a technical regulation system.

7) Selection of examples of best practice among EU states on the assessment of various risks and application of common methods in the areas of professional civil liability, risk assessment and consumer protection.

The traditional approach to banking regulation and supervision has changed over the past decade. Banking supervisors are increasingly moving away from monitoring compliance with banking laws and replacing it with monitoring the risk management process carried out by the banks themselves. Another significant innovation was the tightening of requirements for public disclosure of information, aimed at delegating the functions of this monitoring to the general public.

The mechanisms for regulating the risks of the banking system are very diverse and act, as a rule, in a complex, mutually complementing each other. At the banking system level, the main regulators are government agencies (usually central banks) and professional self-regulatory organizations (Suprunovich E. 2004).

In the context of financial globalization, the role of supranational (international) regulation is increasing, the main task of which is to ensure sustainable development of the world financial system. At the level of the banking system, the main mechanisms for regulating banking risks are: the minimum amount of capital for newly created banks; requirements for the composition and standards of capital adequacy; standards of organization and operation of internal control and risk management services; requirements for the disclosure of information on the financial condition and overall risk of the bank; regulatory requirements for methods of quantitative risk assessment, etc.

At the level of commercial banks, in addition to external ones, internal risk management mechanisms are used, which include internal assessment models and risk management methods (limiting, hedging, internal control, etc.)

Typically, regulators follow either a prescriptive or a market-based approach in their activities. The prescriptive approach, as a rule, imposes restrictions on the activities of banks and regulates all known risks. However, in modern conditions, regulations are rapidly losing their adequacy, and as a result of financial innovations, new, unregulated risks appear (Sultanov G.S., Sultanova E.A. 2011).

The increasing complexity of banking and the emergence of new banking risks have stimulated the realization that a prescriptive approach to banking supervision is not up to date with today's dynamic market conditions. The operations of modern banks are sometimes extremely complex and quite difficult to track and control. Since the late 1980s. Intensive consultations have begun between regulators in several countries with the aim of developing a new market-oriented, risk-based approach. In a market-oriented approach, the focus of regulators is on promoting better risk management. Banking supervisors are increasingly moving away from the traditional monitoring of compliance with banking laws and established

standards and are moving to monitoring, evaluating and, if necessary, strengthening the risk management process in banks. In practice, in most developed countries, banking regulation combines both approaches. In addition, it became clear that in today's dynamic conditions, banking supervisors cannot independently ensure the stability of the banking system, and a number of other participants help them in this. A core component of the new risk-based approach to regulation and supervision is the bank's senior management. Based on this, a partnership approach to risk management was developed.

Within the framework of this approach, the tasks of each participant in the risk management process are distributed as follows (Weift N.F., Bostandzic D., Neumann S. 2014).

1. Banking regulators and supervisors, in shaping the regulatory and legal environment, should stimulate the risk management process.

2. The top management of the bank should be fully responsible for the sustainability of the bank.

3. External auditors should complement the traditional analysis with an analysis of banking risks.

4. The public represented by numerous investors, creditors, clients of the bank - legal entities and individuals.

If a bank goes bankrupt, they will suffer financial losses and must understand that efforts by regulators and bank management to ensure bank soundness cannot protect them from risks. Bank customers themselves must manage risk and be responsible for the decisions they make. The basis for making informed decisions can be monitoring of banking risks carried out by another part of the public (financial media, financial analysts, brokers, rating agencies) on the basis of public banking information.

Another significant innovation was the tightening of requirements for public disclosure of information about a bank's financial position and risk management system, aimed at delegating monitoring functions to the general public.

In addition, the new approach to banking regulation and supervision is in its core elements consistent with the regulation of non-bank financial institutions, which contributes to the formation of a more uniform operating environment.

International experience shows that the basic regulatory tool for ensuring the stability of the banking system is the requirements for the amount of the bank's equity capital, which are put forward by the regulatory authorities in order to create a reserve to compensate for unexpected losses. Continuous risk analysis of a bank's capital level is an essential element of the risk management process (Sazykin B. 2006).

In order to stimulate risk management, regulators in many countries have introduced certain capital adequacy requirements. A problem arose in the development of general criteria for capital adequacy, applied for different banks and independent of their country and range of operations.

In the course of their activities, banks are faced with a set of different types of risks, differing in the place and time of occurrence, external and internal factors affecting their level, and, consequently, on the methods of their analysis and methods of their description. All types of risks are interrelated and have an impact on the bank's activities.

The modern banking market is unthinkable without risk. The risk is present in any operation, only it can be of different scales and be compensated in different ways. Consequently, it is important for banking not to avoid risk in general, but to anticipate and reduce it to a minimum level.

In each area of government activity, for effective risk management, attention should be paid to five general questions: What can happen (identification of potential risk). Each area requires a regular study of the real situation, including a rigorous scientific assessment of current trends, opportunities, hazards, the likelihood of their occurrence and the expected impact. In most cases, such research needs to be entrusted to people with no personal interest in a particular field of activity in order to ensure objectivity. Wherever possible, you should use not only official but also unofficial channels of information.

What's important (evaluation). Having established what might happen, the government must form value judgments about the desirability or undesirability of different outcomes, taking into account, for example, the importance of ensuring the reliable operation of the service, the benefits that an innovation will bring, or the location of the activity in question within the framework of the social contract between the state and its citizens.

What can be done (actions). Having established what is important, the government should draw up a plan of how to avoid, mitigate, anticipate or otherwise control the potential risk, taking into account the uncertainty factor. In some cases, it is important to have a contingency plan in case of unforeseen events. In others, resources and capacity should be allocated to deal with possible unforeseen problems.

What happened (analysis). After taking any action at the initial stage, the state should analyze whether the expected effect has been achieved, whether the existing risk assessment should be amended and whether further action should be taken. All of this must be accompanied by effective communication with both those who may be affected by the risk in question and those who can help manage the risk.

Risk management includes all processes associated with identifying, assessing and forming a judgment about risks, taking measures to mitigate or anticipate risk, as well as monitoring and analyzing procedures. Or it is organizing a cost-effective process in relation to a particular risk. For risk management, there should be in place: a procedure for monitoring risks; access to reliable and up-to-date information about the risk; the optimal level of state control for managing these risks and the procedure for making decisions based on analysis and risk assessment.

1.3. Risk sharing approaches and alternative banking

The unique characteristics of the financial instruments offered by IIFSs have a diverse impact on financial outcomes for stakeholders. Islamic financial products are essentially based on particular principles that are used in varying combinations.

While Islamic finance shares the merits of conventional finance, it has some distinct features that differentiate it from its counterpart.

IIFSs have developed a wide range of instruments based on Shari’ah principles. In contrast to a conventional financial institution, an IIFS may extend its scope beyond the traditional role of financial intermediation by acting as a property developer, providing funding via equity injections for customers, or by trading in tangible assets (see Table 1).

The financial intermediation role of an IIFS involves mobilising funds from depositors/investors via Shari’ah-compliant contracts and providing these funds to firms or individuals to finance assets or business activities. The key distinguishing characteristic of an IIFS is its underlying contractual relationship with its customers. These contractual relationships underline the risk-return profile of the products and services offered by an IIFS, including its own risk profile (see Table 2).

Generally, the financial risks faced by IIFSs are similar to those of their conventional counterparts. But IIFSs have an additional element that requires consideration when managing their financial risk. Table 2 presents a brief explanation of the relevant risks and the measures that can be used to mitigate them (IFSB, 2005).

Table 2: Examples of Islamic financial contracts and their underlying characteristics

Contract	Type	Underlying contract type	Inherent risk	Type of product
Ijarah	Debt-based	Lease		
Murabahah	Debt-based	Cost-plus mark up	Credit risk	
Salam	Debt-based	Future contract	Market risk Operational risk	Financing
Istisna’	Debt-based	Manufacturing contract		
Musharakah	Equity-based	Profit and loss sharing	Credit risk Operational risk	
Mudarabah	Equity-based	Profit-sharing and loss-bearing	Displaced commercial risk Operational risk	Deposit
Wadiah	Trust Contract	Safe custody of assets	Credit risk	
Qard	Debt-based	Interest free financing	Displaced commercial risk	

Sources: Islamic banks, KFH Research.

Under Islamic finance, credit risk refers to the probability that a third party or counterparty fails to meet its obligations in accordance with the terms agreed, e.g. a customer fails to meet monthly repayments. As a result, loss of revenue and principal due to default on the part of customers may arise from financing, dealing and investment activities. The risk management techniques used by conventional banks can be used to mitigate this risk (for example, by using good-quality data on the past performance of the counterparty to gauge this risk and by determining the probability of default). Collateral and pledges can be used as security against credit risk, as well as personal and institutional guarantees.

Market risk for an IIFS arises in the form of unfavourable price movements, such as regarding equity and commodity prices (price risk), benchmark rates (interest rate risk), foreign exchange rates (FX risk), yields (rate of return risk) and volatility in the value of tradable or leasable assets.

Table 3: Types of profit-sharing investment accounts offered by Islamic Banks

General/unrestricted investment	The IIFS has full discretion regarding the use of funds. Investors provide funds specifying any restrictions on where, how or what purpose the funds should be
Specific/restricted investment	The mandate of the IIFS is confined to the activities agreed upon with the holders of profit-sharing investment

Sources: Islamic banks and KFH Research.

For example, under an ijarah operating lease contract, an IIFS might be exposed to market risk due to a reduction in the residual value of the leased asset at the expiry of the lease term or, in the case of early termination, due to default. Another example would be the price risk involved when the price of a commodity fluctuates during the period between the date of delivery and the date on which it is sold at the prevailing market price. In order to mitigate this risk, an IIFS must have in place an appropriate framework for managing the market risk (and related reporting) of all assets held, including those that do not have a ready market and/or are exposed to high price volatility.

Table 4: A comparison of the financial risks facing conventional and Islamic banks

Type of financial risk	Items of concern	
	Conventional banks	Islamic banks
1. Credit risk	Default value at risk	Default value at risk Income expectation for sharing-based assets
2. Market risk	Volatility of market variables	A lower degree of market volatility
3. Liquidity risk	Maturity mismatches and alternative funding sources	Maturity mismatches and alternative funding sources
4. Operational risk	Hardware/system problems and fraud	Hardware/system problems and fraud, Compliance with Shari'ah rules, fiduciary risk
5. Legal risk	Compliance with local legal framework	Compliance with local legal framework Compliance with Shari'ah rules
6. Capital structure	Level of capitalisation	Level of capitalization Composition of capital instruments issued by IIFS

Source: Hawaldara I. T., Rahimanb H. U., Rajesha T M., Naveen r K.R. 2017: p.106

Similar to conventional institutions, IIFSs also face the challenge of managing their asset and liability mismatches. Typically, liquidity risk can occur under two scenarios. In the first, due to a lack of liquidity, the IIFS is constrained in its ability to meet liabilities and financial obligations by illiquid assets. In the second, the IIFS is unable to borrow or raise funds at a reasonable cost when required. Therefore, it is paramount to ensure that sufficient Shari'ah-compatible money market instruments and interbank facilities are available to support IIFSs in their liquidity risk management.

Operational risk is the risk of loss resulting from external risks or from the inadequacy or failure of internal processes related to people or systems. Operational risks also include the risk of failure of technology, systems and analytical models. It is argued that operational risks for IIFSs can be significant due to specific contractual features (e.g. the cancellation risks related to non-binding murabahah contracts) and the issue of the enforceability of Islamic contracts in a wider legal context. Therefore, having an end-to-end Shari'ah-compliant process is crucial with regard to mitigating operational risk. This would include having systems that recognise the specificities of Islamic contracts, talent that understands and executes Islamic contracts in the correct manner, and internal processes that mitigate the risks associated with any potential non-compliance. Legal risk (which can also be categorised as part of operational risk) refers to the potential loss that may be

incurred by an IIFS as a result of insufficient, improperly applied, or simply unfavourable legal proceedings in the country in which it operates. The lack of a legal framework to support the products and services that IIFSs offer may stunt the growth of the Islamic finance industry and reduce stakeholders' confidence in the viability of Islamic financial solutions. Specific measures that can be undertaken to mitigate this risk would include amending existing laws or guidelines in favour of the industry, appointing Shari'ah experts to provide advice on IIFS's operations, preparing legal documentation that is enforceable and which conforms with existing laws and the Shari'ah, and ensuring that the talent behind Islamic finance operations is well-versed in Islamic contracts.

Both an IIFS and its conventional counterpart face capital structure risk, which refers to how a firm finances its overall operations and growth by using different sources of funds. Both types of institutions use a combination of debt (short and long-term) and equity (common equity and preferred equity) for funding. Nevertheless, the instruments issued by IIFSs, as mentioned in IFSB Exposure Draft 15 that will make up an IIFS's additional capital, would be required to meet the necessary requirements in order to ensure Shari'ah compliance. The risks associated with such instruments would therefore be assessed differently than those of conventional instruments (IFSB, 2005).

The portfolios of conventional financial institutions consist mainly of loans, advances, financial leases and other similar credit/term facilities. Exposure to real economic sectors, such as real estate, is not direct, but follows from impairments on bad loans (provided that these have not been securitised and sold on to investors). Such portfolios are also managed with due consideration of the future impact of interest rate changes on operating efficiency and institutional profitability. Credit risk and market risk (more specifically, the rate of return) are therefore two of the most important components of the risk management framework of a conventional financial institution. In contrast, Islamic banks mostly purchase real assets and sell these on condition of a deferred payment that includes a stipulated mark-up (profit), thereby creating an asset-based financial transaction. This ensures that Islamic banks

assume appropriate risks in order to discourage any malpractice in financing. As for the management of interest rate risk, IIFSs do not deal with interest-based instruments as such, but are not entirely immune from interest rate risks. Exposure to this type of risk occurs indirectly via the price mark-ups used for deferred sale and lease-based transactions, which are determined according to market conditions and risk exposure. To this effect, Islamic banks use a benchmark rate for pricing their financial instruments, for example, the London Interbank Offered Rate (LIBOR). In this case, the LIBOR is representative of the greater scale of financial assets, of which Islamic finance is one part. Therefore, the assets of Islamic banks are equally exposed to the risk of changes in the LIBOR. Consequently, changes in the interest rates paid to depositors in conventional banks will influence the conditions offered to those depositing funds with Islamic banks. If there is a difference between conventional and Islamic banks operating in the same environment, this implies some displaced commercial risk as depositors may flee to the type of institution that is considered more attractive. Hence the need for Islamic banks to pay close attention to interest rate risks.

Through various financing mechanisms and instruments, the balance sheets of Islamic banks hold both financial assets as well as tangible and intangible non-financial assets. Therefore, it becomes necessary to consider the risk of inflation, both in terms of the risk to the balance sheets of Islamic banks and to the mechanisms by which Islamic transactions are priced. In addition, particular transactions in Islamic banks need to be considered in relation to risk exposure, given their unique characteristics. For example, institutions following the AAOIFI standards on accounting will be engaged in transactions such as operational leases. In cases such as these, tangible assets will have to appear in the balance sheets of Islamic banks as non-current assets together with depreciation and amortisation costs, thereby resulting in direct exposure to inflationary risk. Such accounting requires sufficient risk management to ensure that the risk of inflation is anticipated and reported accordingly.

Similar accounting/risk management practices may be necessary for other products offered by Islamic banks. Despite the evolution of products in this area that conform with the existing frameworks used for conventional finance, these modes of finance may naturally give rise to unique, albeit relatively inconsequential, risks. However, the asset-based nature of Islamic finance means that Islamic banks will always be exposed to a certain inflationary pressure when trading in real assets. Nevertheless, Islamic banks have incorporated ways of managing inflation risk by using parallel contracts executed in sequence, which mitigate fluctuations in asset prices and provide fixed cash flows from assets in a similar fashion to conventional loan agreements. Traditionally, however, Islamic banks have had significant exposure linked to real estate assets, as this asset class provides a natural hedge against inflationary pressure. As such, Islamic banks have had to monitor their inflation risk closely due to the possible consequences for asset price valuation.

In summary, Islamic banks face a unique risk exposure that includes both interest rate and inflation risks. Interest rate risks arise through deferred payment sales, leasing arrangements benchmarked to interest rates and displaced commercial risk. Meanwhile, inflationary pressures may negatively impact the performance of Islamic banks via their investment in real economic sectors and through financial products that involve the buying and selling of real assets.

Alternatively banks can hold their reserve accounts indirectly through another intermediary. This possibility is confined to credit institutions that entrust part of their management (e.g. treasury management) to another intermediary, for example, an association of small saving banks or cooperative banks. If it is held that Islamic banks must comply with reserve requirements, they could rely on the indirect management of their reserves by other intermediaries. This is actually the preferred solution of several smaller banks. This reliance could also create room for a Shari'ah-compliant management of the reserve account remuneration. Otherwise, the only other possibility left to Islamic banks would be to directly comply with the minimum reserve requirements and to somehow give up the remuneration associated with the reserve account.

II CHAPTER. TAXONOMY OF RISK

2.1. Philosophy of risks

The concept of risk has acquired a fundamental and interdisciplinary character, covering areas such as philosophy, politics, management, ecology, epidemiology, sociology, demography, technology, economics and others. The topic of risk is now one of the most intense, and research in this direction is expanding in all developed countries. After the first risk studies in the 1960s and 1970s the development of this issue underwent rapid growth in the 1980s and continues with increasing dynamics to this day.

Philosophical, sociological and methodological problems of risk were investigated by W. Beck, J. Bradbury, A.A. Bykov and N.V. Murzin, A. Vildowski, E. Giddens, M. Douglas, I. Luhmann, L. Laudan, C. Perrow, I. Slovik, K. Schreider-Frechett, O. N. Yanitskiy and many other authors.

The Italian philosopher E. Agazzi notes that risk is a fundamental attribute of human nature. Only a person is able to take risks, choose and make decisions. Entering a risk situation is inextricably linked to the moral issues of freedom and responsibility: we are all responsible for the consequences of our actions, even if those consequences were unintended. The category of responsibility is decisive here, since it both presupposes freedom and internally calls for its limitation. Thus, with the participation of individuals and social groups in risky activities, they have certain

moral obligations, including the anticipation of risk, its assessment and prevention or significant reduction.

A significant role in the fact that the topic of risk was recognized as a primary general scientific and philosophical problem was played by the works of the German sociologist Ulrich Beck, and above all - his famous book "The Society of Risk (Agazzi E. 2014: p.177).

In his broad analysis, Beck shows that the systemic and irrepressible increase in risks has become an essential characteristic of the modern world. The massive process of modernization in all spheres of life has led society to a state that can be described as a society of risk.

The modern developed society is no longer concerned with the distribution of benefits - a classic issue of social thought of the past - but, on the contrary, with the placement of risks among different regions. We can say that this is the "negative currency" of modernization. Many side effects of modernization (hazardous waste, by-products, environmental pollution) can no longer be spatially removed somewhere, so they simply accumulate in this closed global system.

Complex processes of modernization and economic growth are steadily leading to the production of more and more risks, and, as Beck shows, modern social institutions (legal norms, market mechanisms, etc.) are for the most part powerless against the generation of more and more new threats; on the contrary, they themselves contribute to their legalized production. Thus, the global situation of increasing risks looks like a kind of self-sustaining process.

Due to the frequent use of the concept of "risk" in connection with a variety of problems, this concept today is given a fairly broad meaning. Synonyms for "risk" can be "danger", "threat", "trouble", etc. However, in many definitions of risk, this term is used in a certain special sense, in which risk is related primarily to the concept of uncertainty. In this regard, under "risk" it is customary to understand uncertainty, the outcome of which may be one or another adverse event.

For the discussion of the philosophical problems of technology and technology, it is important that risk is a concept that connects the fields of scientific, technical

and humanitarian thinking. After all, risk, on the one hand, can be understood and studied as a certain objective structure with its own causal relationships. At the same time, the concept of risk also has a value sense in connection with the fact that risk is always a threat to what we assess as something essentially valuable (a threat to man, society, nature, material values, etc.).

In engineering and technical activities, the problems of risk assessment and management are of great importance. What is the specificity of a purely technical approach to risk? This approach assumes that the risk is of a physical nature, is created by technical reasons and is subject to control by technical means. Quantitative approaches based primarily on statistical and probabilistic methodology are applicable to it.

Of course, the risk can also be created directly by human action, but the very influence of the "human factor" in technical systems is also transferred to the technical plane (expressed in technical terms, etc.) and they seek to neutralize it with special systems of technical counterweights. For example, in systems engineering, when planning technical safety, they calculate possible erroneous actions of users and introduce measures such as signaling, duplication, backup systems, emergency blockers, etc.

There are various ways to measure risk. The general method for quantifying the degree of risk associated with decision-making problems is to assign a certain quantitative weight to one or another possible unfavorable outcome associated with the considered solution.

It is customary to express the value of the risk of an event X as the product of the amount of harm created by this event $A(X)$ by the probability of its occurrence $P(X)$. This is the so-called classic risk formula:

$$R(X) = A(X) \cdot P(X).$$

This formula can be used to obtain estimates with varying degrees of precision. Thus, the quantitative data inserted into it can be empirically justified: for example, information about the probability of an event can be gleaned from reporting

statistics, and the amount of harm can be measured as the cost of economic damage, also obtained on the basis of available factual information. This formula can also be used and only as a refinement of intuitive judgments.

Numerical risk scores associated with the available alternatives can be further embedded in decision-making procedures. For example, they can be used in such standard formal decision-making techniques as the score matrix and decision tree.

In practice, the assessment of existing risks often requires separate studies. For example, this is a systematic collection of data on the number of incidents (railways, vehicles, aviation, etc.), environmental monitoring (measurements of radioactive background, harmful impurities in the soil, etc.), environmental studies of the effect of environmental factors on the health of populations (assessment intensity of impacts and magnitude of pathogenic effects). For particularly complex, extensive risks, advanced methods such as scenario development and analysis, simulation games, computer modeling, etc. are also used.

In addition, expert judgment plays a significant role in technical risk assessment. This in itself is a problem. On the one hand, expert judgments can be very useful as a reflection of the valuable experience of professionals, but on the other hand, they cannot be compared in reliability with the data obtained by formal methods in targeted research.

Nevertheless, in many situations, if there is no possibility of a scientific substantiation of a particular judgment, one has to be content with expert assessments, when a team of experts, using special methods of reaching consensus, comes to a certain agreement on the problem under discussion. For this today, a whole family of formal methods for extracting and refining expert opinions has been developed. With expert consensus, it is usually possible to form a more advanced view of the problem under study in the face of a lack or absence of reliable research data.

Difficulties in the technical approach to risk. Despite the fact that the methodology of research and risk assessment continues to evolve, in practice, many

issues of risk assessment face great difficulties. There are many difficulties in assessing risk in different specific situations; we list just a few of them:

1) the difficulty of expressing the risk itself in a quantitative way (for example, to assess the extent of harm due to major accidents, disasters, the introduction of risky technology);

2) the difficulty of assessing the risk of rare (but extremely undesirable) events, since there is no sufficient empirical material;

3) the complex nature of risks (multifactorial risks), when the risk depends on many different components, including non-technical ones (actions of individuals, organizational, political, institutional and other factors);

4) the impossibility of a direct assessment and the forced use of approximate methods - by historical examples, by analogy, by indirect indicators (for example, the reliability of the anti-emergency safety system is assessed only indirectly, and not by direct "absence" of incidents);

5) difficulties in transition from "average" to individual - for example, pharmacological assessments of the safety of drugs give only the average expected effect, but this does not take into account the range of significant individual variations in the human body;

6) dependence on initial assumptions - in situations that are difficult to assess, different introduced initial assumptions (equally convincing) lead to a large difference in the resulting risk assessment;

7) impossibility to foresee all possible scenarios for the development of events.

The purely technical difficulties in obtaining reliable data also include all sorts of systematic errors, ethical restrictions, inaccessibility of the necessary information, distortions introduced into the information by various participants, etc. In addition, a quantitative approach to risk assessment is itself a one-sided view, and risk control tasks require a broader context, which is where we turn.

From about the 1960s to the 1970 there is an increase in distrust of the general public towards expert groups. This is caused by frequent incidents (accidents at nuclear power plants, chemical plants, industrial effluent discharges, air crashes,

collapses of large engineering structures, etc.), concerns about the safety of new products (for example, genetically modified products), environmental degradation, etc.

All this led to the development of an expanded view of the problem of risk, taking into account the socio-cultural context. An interesting point of view is developed by A. Wildavsky, M. Douglas and other researchers, who believe that the very idea of risk is deeply rooted in social ideas (Douglas M., Wildavsky A., 1982). In this sense, there is no “correct” or the most “objective” perception of risk, and expert opinion itself is only one of the possible points of view.

In modern conditions, risk is increasingly emerging as a subject of complex political "bargaining" (for example, on the construction of a nuclear power plant), when the interests and points of view of the authorities, business, environmentalists, political parties (for example, the "green" against the “liberals”), Etc. Expansion of risks also expands the areas of political discussion of decision-making.

Public political demands such as transparency, the right to information, the right to a safe environment, democratic participation in important social issues, etc., have led to widespread criticism of expert control and expert rationality in general, and to the intensification of movements for public participation.

The very right of expert groups to fully regulate socially important areas is increasingly challenged. In the last decades of the XX century began a significant revision of the prevailing ideas (including illusions) about the activities of expert communities (W. Beck, A. Rip, B. Wyne, S. Fuitovich and J. Ravets and others).

Thus, in a number of publications it was argued that, having more professional knowledge of some components of knowledge, specialists, due to their expert position, ignore other components in which “non-professionals” are more competent. The expert knowledge itself, as it turned out, is not at all an integral and reliable structure, but is composed of completely heterogeneous fragments, including those from areas of ignorance and fundamental uncertainty.

Thus, the concept of expert knowledge, which not so long ago had a high social status and level of trust, was questioned in its rights. In foreign literature, among

other approaches, the concept of postnormal science, which was introduced by S. Funtovich and J. Ravetz, is vividly discussed. The authors argue that with the growth of systemic uncertainty and the scale of threats (or "risk rates"), the characteristics of science itself change.

In the past, in situations of comparatively low uncertainty of the systems under study and small values of risk, in general, the “usual” model of applied science was sufficient. But as uncertainty and risk increase, there is a need for professional advice that uses a combination of both quantitative and qualitative approaches. At the present stage of highly complex systems and global risks, a special form of organization of science is required, which includes negotiation processes with the general public and value discussions (Table 5) (Funtowicz S.O., Ravetz J.R. 2019: p.739-756).

From an institutional point of view, the problems of risk assessment and control require new forms in which the interaction of different points of view and participation of the general public would be ensured. In other words, the time is ripe for a transition from more traditional “closed” institutions (distinguished by expert autonomy, difficult public control, etc.) to new forms - institutions of the future.

Table 5: Stages of science organization - from applied to post-normal

Uncertainty level	Risk level	Organization of science
Low	Low	applied Science
Middle	Middle	Professional advice, expert assessments
high	high	Public participation

Source: Stages of science organization - from applied to post-normal, http://www.un.org/ru/documents/decl_conv/declarations/riodecl, 245 p.

An ethical approach to risk. Risk issues always contain ethical aspects. From a moral point of view, in itself, exposure to risk, the creation of dangers for humans, society, the natural environment - there is an exit to some edge of what is permitted. In this regard, a lot of questions arise: about the ethical legality of creating dangerous situations, about the levels of permissible risk, rules and norms of behavior in conditions of risk, etc.

Nevertheless, risk has only recently become a topic of moral philosophy (from about the last decades of the 20th century). Prior to that, moral philosophy mainly discussed such more traditional concepts as duty, duty, guilt, harm, responsibility, consequences, etc. - in other words, moral philosophy was aimed at evaluations in the specific and explicit context of human actions and their results, rather than situations where there is only the likelihood or possibility of negative consequences.

One of the first works, which considered the ethical aspects of risk and actions that put a person at risk, was the book of the famous American philosopher R. Nozick "Anarchy, State and Utopia" (1974). In this work, he raises questions about what moral rights people who are at risk have, and what morally acceptable measures should be taken against actions that create risk (for example, when complete bans are appropriate, and when - permissions, but this providing compensation for risk, etc.).

Issues such as assessing the reasonableness of risk and accepting risk play a huge role in the discussion of risk. For example, such a problem as the acceptance of risk out of necessity or because of the high value of the expected benefit - in itself goes beyond the purely technical and quantitative assessment and also affects the ethical plane. Risk-taking (in specific situations) should be an act that is morally justified.

Risk taking includes an in-depth assessment of the situation, justification and reasoning, commitment and responsibility. Taking a risk means taking a risk consciously, with compelling reasons to act in that particular way (for example, not being able to do otherwise; or avoiding even greater risk, etc.).

An ethical approach to risk involves reconciling different aspects of a problem. As a rule, in situations of risk there are different and irreducible perspectives. This is due not just to different political or personal interests, but to different positions in relation to the risk itself.

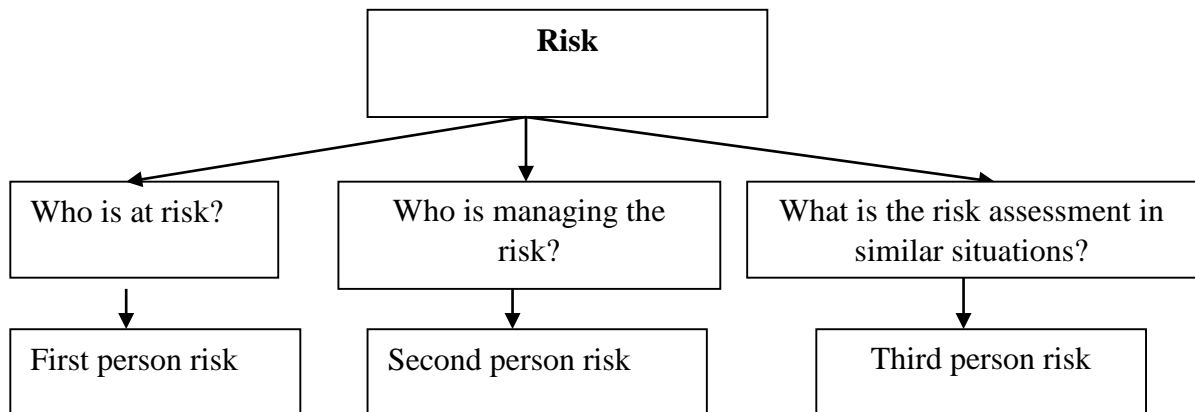
So, the risk can be considered (Figure 2):

1) from the perspective of the one who is directly at risk (it can be considered a "first-person risk");

2) from the point of view of the one who creates the risk and bears certain moral and other obligations ("risk from the second person");

3) in the perspective of a neutral (ie, usually expert-objectivist) risk assessment arising from the study of objective data, measurement results, etc., which forms a neutral, scientifically grounded and impersonal view ("third party risk").

Figure 2: Different positions in relation to risk



Source: Different Types of Risk Jobs, <https://www.careersinrisk.com/article/different-types-of-risk-jobs/>, 2019

In other words, when discussing risks, the positions of the subject "at risk", the subject "conducting risky activities", as well as "risk in general" arise. The presence of these differing perspectives creates a barrier to the interpretation of risk in some "only correct", objectivist perspective and gives rise to the need for ethically grounded settlement of these differences.

Hence, a further ethical consequence arises: a full-fledged combination of different points of view is possible only in a dialogue, a communicative process, which requires the creation of conditions for such a dialogue.

The notion of trust should be placed at the center of the ethical discussion of risk, while the highly technical approach is primarily concerned with the notion of governance. The moral problem of risk is, first of all, the problem of achieving mutual trust in conditions of risk. After all, the risk entails general tension and disunity (experts and the public, various social groups, etc.). The more risks modern society produces, the greater the mutual alienation. The fundamental problem of risk ethics is to find the moral foundations on which to develop partnership and

solidarity. In other words, it is a question of how a community of trust can be formed in a modern “risk society”.

A convincing concept of the conditions for a rational ethical dialogue has not yet been created, although the grounds for this are being developed from different sides.

Discussing and resolving ethical issues related to risk requires, first of all, good expression and clarification of the values affected by a particular issue. Those stakeholders whose points of view are relevant to the discussion of the problem (and are clearly expressed by the participants themselves) should be adequately represented. The risk must be considered from different perspectives (first person, etc.). At the same time, it is necessary to determine what moral obligations arise in this situation and to whom.

Ethical risk issues are now widely discussed in the literature. However, the full formation of risk ethics is still a field for future research. It can be assumed that the main directions of development of risk ethics will be associated with the following interacting tasks:

- 1) study of the basic, theoretical aspects of risk. Further analysis of value, socio-cultural, political and other issues of risk is required, clarification of their own problematic and methodology of risk ethics;

- 2) the development of various ethical theories as applied to risk problems - for example, such already established, fairly traditional ethical approaches such as utilitarianism, ethics of duty (dating back to I. Kant), ethics of virtues (dating back to Aristotle), etc.;

- 3) creating links with specific sciences studying risk and activities in hazardous conditions. First of all, this concerns links with decision-making theories. Integration of ethical and technical aspects of decision making acts as one of the strategic tasks, however, it remains a poorly developed area;

- 4) research of special issues of risk ethics in applied fields (nanotechnology, energy, etc.). So, general ethical principles should be specified to the level of ethical recommendations, professional ethical codes, etc.;

5) one more of the most difficult ethical problems of risk should be noted. Such an important moral and legal concept as responsibility traditionally has a personal character. However, at the present stage, given the complex, systemic organization of modern activities (including in large socio-technical systems, corporations, etc.), the concept of collective responsibility (organizations, institutions, etc.) is playing an increasing role. At the same time, this concept has not yet been sufficiently developed.

One of the internationally recognized principles on which a strategy to counter global risks should be based is the precautionary principle. Its background dates back to German environmental legislation in the 1970s, where it appeared under the name Vorsorgeprinzip (German: Vorsorge - foresight, care). Today it is used in legislation (mainly European) in the field of ecology, food safety, technological development, health and other areas.

It is represented in a number of international documents, including: World Charter for Nature Rio Declaration on Environment and Development (1992); United Nations Framework Convention on Climate Change (1992); Maastricht Treaty (1992); Cartagena Protocol on Biological Safety (2000) and others.

The precautionary principle has many versions, from stricter to milder, which immediately gave rise to a lot of uncertainty in its interpretation.

In the broadest sense, the essence of the RR can be characterized as follows. In situations where there are assumptions about possible serious harm that a given development will bring (technology, new product, etc.), measures should be taken in advance to prevent such harm - even if reliable scientific data on its probability are not (yet) available.

Thus - it is worth paying attention - this principle initially recognizes the inadequacy of purely scientific and technical risk assessments and imposes obligations of increased responsibility in relation to ensuring the safety of man, society, and the environment.

One of the most famous RR formulations is enshrined in the Rio Declaration on Environment and Development (adopted by the UN Conference on Environment

and Development, 1992). It looks like this. “In order to protect the environment, states, in accordance with their capabilities, widely apply the precautionary principle. Where there is a threat of serious or irreversible damage, lack of full scientific confidence is not used as a reason to delay cost-effective measures to prevent environmental degradation” (principle 15 of the Declaration) (http://www.un.org/ru/documents/decl_conv/declarations/riodecl).

The Precautionary Principle is widely regarded not only as the principle on which sound safety and preventive decision-making policies should be based (i.e., as a political and legal principle), but also as an ethical guideline on which responsible public information and communication behavior should be based. Policymakers, risk assessment and control. In particular, it is understood as a moral obligation towards future generations.

The precautionary principle has generated a lot of discussion, and a huge amount of literature is devoted to it. Among the main criticisms against him are the following:

- it creates a tendency to pay too much attention to unrealistic, far-fetched, and unlikely threats. Pushed to the limit, he can prohibit any activity at all;
- its use can cause the paradoxical effect of increasing risks instead of reducing them. For example, the costs of countermeasures can create new risks of even greater magnitude (for example, measures against global warming may themselves be even more dangerous);
- it can be used as an attack on the basic values of the civilized world (such as freedom of the market and freedom of scientific research), in particular as a tool for excessive, excessive regulation of the free market or for unfair competition (for example, in the struggle of producers of "natural" food products against manufacturers of GMO products);
- it represents political intervention in purely scientific problems: instead of rigorously examining the problem with scientific methods, it initially outweighs political considerations (for example, under the influence of unfounded public concerns) that can block promising research and development.

However, there are many defenders of this principle who generally argue that extreme, exaggerated interpretations of the RR should be avoided and understood from a common sense point of view. Including his merit is that he has sufficient flexibility and sensitivity to various situations. Therefore, until very recently, attempts have been made to create a coherent concept that explains and justifies the precautionary principle (Steel D. 2015: p.456).

2.2. Policies to reduce risks

The successful functioning of a commercial bank in accordance with the laws of the market predetermined the need to constantly maintain its competitiveness and attractiveness to customers. This is possible due to the effective management system of the bank and its risks.

Risk management in PashaBank OJSC is carried out in accordance with the Rules for the Implementation of Corporate Governance Standards in Banks, Risk Management Standards of the Central Bank of the Republic of Azerbaijan, Recommendations of the Basel Committee on Risk Management in Credit Institutions, the Bank's Charter, the Strategic Plan, this legislation, "Risk Management Policy", "Risk Management Methodology" of the Bank and internal Rules and Procedures of the Bank in this area. The main principles of risk management are to ensure profitability and increase bank capital. The main goal of risk management is to minimize risks in order to avoid jeopardizing the Bank's profitability.

In order to manage liquidity, "PashaBank" OJSC has developed a "Liquidity Management Policy", which regulates the management of intraday, current and structural liquidity.

Liquidity management procedures are based on the following principles:

- conflict of interest between profitability and liquidity (due to low profitability of liquid assets or high cost of resources);
- the forecast of the liquidity state is carried out taking into account the scenarios of the negative development of events for the Bank related to the market

state, the position of debtors, creditors and other factors affecting the state of the Bank's liquidity;

- the forecast of the liquidity state is carried out taking into account the possibility of transferring the Bank's claims that have a market quotation into the trading portfolio and subsequent implementation within 3-5 working days with a discount to the current market value;

- for assessing liquidity, the following currencies are allocated: Azerbaijani manat, "US dollar", "Euro" and "Other currencies", which include the Bank's financial instruments denominated in other currencies.

Based on the combination of external and internal factors, liquidity management procedures are distinguished: excessive liquidity, normal liquidity, the threat of a crisis and a liquidity crisis. The criterion for assessing the Bank's liquidity management is the duration of the Bank's stay in the "Normal liquidity" state. In order to assess the quality of liquidity management, the facts of the Bank's entry into the conditions of "Excessive liquidity", "Threat of liquidity crisis", "Liquidity crisis" are interpreted as negative.

Regular liquidity control is carried out by the Risk Management Department through a monthly gap analysis of the Bank's assets and liabilities in terms of the terms remaining to maturity.

The Bank manages the risk of liquidity loss by assessing and analyzing the Bank's payment position, imitating the Bank's active operations in investment areas depending on the funding sources, analyzing the actual values and dynamics of liquidity indicators and the size of risks assumed by the bank, as well as by analyzing gaps in the maturity of claims and the Bank's liabilities.

Control over the state of liquidity by the Bank's Supervisory Board is carried out by quarterly provision of data in accordance with the Appendices to this Policy, promptly informing the Bank's Supervisory Board in situations of "Threat of liquidity crisis" and "Liquidity crisis".

Operational risk management is part of the Bank's risk management system. The need to manage operational risk is determined by the significant amount of

potential operational losses that may threaten the financial stability of the Bank. In order to increase the level of business reputation, PASHA Bank OJSC considers it necessary to bring to the participants (shareholders), creditors, depositors and other clients, external auditors, rating agencies and other interested parties information (including as part of the annual report) on operational risk management while ensuring that the level of detail of the information disclosed is consistent with the nature and scope of its activities.

The operational risk management system in PashaBank OJSC is organized for the following purposes:

- ensuring full, timely and effective achievement of the strategic objectives set for the Bank in accordance with the nature and scale of its activities;
- optimization of technological processes;
- compliance with the requirements of legislation, rules and customs of business turnover, the terms of contracts and transactions concluded, and increasing the level of confidence in the Bank (business reputation) on the part of its customers and depositors.

The Bank establishes the principles of operational risk management in the relevant internal regulatory documents for each area of its activities. Taking into account the basic basic principles, the Bank applies the following methods (methods) to minimize the level of operational risk:

- standardization of banking operations and other transactions (procedures, procedures, technologies for carrying out operations and transactions, concluding contracts);
- organization of a system of additional and subsequent control, systems of current verification of ongoing transactions and operations;
- establishment of an internal procedure for the development and approval (approval) of internal regulatory documents;
- formation of a centralized database of operating losses;

- analysis of the impact of operational risk factors on the Bank's performance indicators broken down by business areas in accordance with the recommendations of the Basel Committee on Banking Supervision;

- ensuring the required level of personnel qualifications, improving the qualifications of personnel;

- automation of banking processes and technologies, especially in areas related to standard operations and large volumes of work.

In order to control risks in the process of ensuring the most efficient allocation of credit resources in its activities, PashaBank OJSC adheres to a specially developed Credit Policy. The provision and maintenance of loans in the Bank is carried out in accordance with uniform standards established by internal banking regulations. The main goal of the Bank's lending policy is a rational and efficient allocation of funds, which allows obtaining maximum income with minimal risk, while maintaining the required level of the Bank's liquidity.

The determining factor of the Bank's credit policy is the focus on meeting the needs of customers for borrowed funds with the widest choice of forms and methods of providing credit products, while reducing the risks of non-repayment of the principal amount of debt and interest on it. The Bank's particular attention is focused on defining the following risk control priorities: quality assets, profitable relationships; reasonable growth of the loan portfolio.

To achieve the goal of the best allocation of resources, the Bank follows the following criteria:

- the requirements of the Central Bank of the Republic of Azerbaijan, - the mission and the Corporate strategy of the Bank (including maintaining high ethical standards);

- for security reasons and reasonable care, which means participating only in transactions that are lawful and reasonable in terms of risk.

To achieve these goals, the Bank sets medium and long-term strategic requirements for the loan portfolio. These requirements correspond to the strategic focus and the level of risk acceptable for the Bank. In defining these strategic

requirements, a thorough analysis is carried out, and then their level of return and risk is taken into account. The strategic requirements are periodically reviewed and, as necessary, amended and supplemented.

In order to minimize the credit risks accepted by the Bank, taking into account the requirements of the Central Bank of the Republic of Azerbaijan, as well as internationally recognized principles and standards for credit risk management in banking and the recommendations of the Basel Committee on Banking Supervision, the Bank manages credit risks in accordance with the following basic principles:

- powers in the field of lending activities;
- diversification of the loan portfolio;
- monitoring of the loan portfolio;
- creation of reserves to cover possible losses.

The Bank has also developed an internal rating system as a standard means of assessing borrowers. The information on client ratings is used by the Bank at various management levels to better understand the asset quality and segmentation of the Bank's loan portfolio. In the course of its business, the Bank regularly evaluates its assets in order to determine potential losses. If objective indicators of asset impairment are identified, the Bank creates appropriate reserves for impairment in accordance with the requirements of international standards, the rules of the Central Bank of the Republic of Azerbaijan and internal standards for lending activities.

In case of revealing negative trends in the structure of the portfolio on credit operations, the Bank takes prompt measures to correct credit activities within the framework of the current basic principles of credit policy and risk management policy. When determining the fair value of loans provided, the Bank proceeds from the need to fully cover the costs of attracting appropriate resources, as well as to include a premium and appropriate commissions to compensate for the Bank's costs of studying, processing, maintaining a loan, to obtain an acceptable yield, taking into account the risk potential of a lending operation.

The Bank manages the risk of portfolio concentration by limiting lending operations by regions, types of loans, and individual borrowers. The Bank actively

uses such methods of ensuring the fulfillment of obligations by borrowers such as property pledges, guarantees and sureties of third parties. As a significant factor in minimizing credit risks, the Bank considers insurance of the property interests of borrowers against losses as a result of natural disasters, damage and theft of fixed and circulating assets that are the subject of loans or pledges (with the approval of the list of pledged items subject to compulsory insurance).

Credit risk in terms of interbank transactions and transactions with securities is regulated by setting individual limits for each borrower (counterparty, issuer, drawer). The establishment of limits is based on the assessment of the financial condition and dynamics of the borrower's business development, its credit history, assessment of other non-financial information. To avoid losses during transactions in the interbank and stock markets, control over the level of credit risk of counterparty banks / issuers of securities is ensured. Banks and issuers with high credit ratings are selected to act as counterparties.

Market risk management in the Bank is based on the principles of differentiation of market risk sources, responsibility for assumed risk, limitation of potential losses and centralization of market risk management.

The Bank organizes a market risk management system for the following purposes:

- avoidance of possible losses due to fluctuations in market prices;
- compliance with the requirements of the Central Bank of the Republic of Azerbaijan to ensure the financial stability of the Bank;
- obtaining an optimal financial result, taking into account the ratio of factors "profitability-risk";
- ensuring the observance of the legitimate interests of the Bank and its clients when working with market instruments.

Market risk management methods depend on the nature of emerging risks and are divided into: general, i.e. applied to all types of risks included in the concept of market (currency, interest, stock) and special, i.e. applied only to any specific type of risk or financial instrument (trading portfolio). The Bank manages foreign

exchange risk by assessing and analyzing the structure of claims and liabilities in foreign currencies, conducting hedging transactions, as well as by setting limits on certain transactions involving foreign exchange risk. The Bank controls the net position in foreign currency based on the limitation of the currency position in accordance with the requirements of the Central Bank of the Republic of Azerbaijan.

Due to the fact that the Bank attracts foreign exchange resources in order to fund loan operations denominated in Azerbaijani manats, the bank hedges foreign exchange risk by conducting resource exchange operations - placing funds in foreign currency with the simultaneous attraction of resources in Azerbaijani manats in equivalent volumes for the same period.

The main tool for managing stock risk is the system of limits. The Bank accepts the following system of limits on the stock market: limit on the issuer of securities; limit on the share of securities in the trading and (or) investment portfolio; limit on homogeneous financial instruments; stop-loss limits. The system of limits is an integral part of the risk management system and is secured by the relevant internal regulatory documents that determine the procedure for setting limits, their types for specific instruments, as well as the powers and responsibilities of the departments involved. Stock risk assessment and control is carried out both for the portfolio as a whole and in the context of certain types of securities. In order to minimize possible losses, the Bank, if necessary, hedges stock risk.

The difference between strategic risk and other types of banking risks (for example, credit, currency or legal risk, risk of loss of business reputation, etc.) is the potential for the bank to incur financial losses due to imperfect management of the Bank or incorrectly defined strategic goals and objectives. Strategic risk management at PashaBank OJSC is organized for the following purposes:

- minimizing the likelihood of the Bank choosing the wrong, ineffective, insufficiently balanced strategy (both the general development strategy and individual strategic decisions), which can lead to the loss of the bank's business reputation, its position in the market, and, as a consequence, financial losses;

- reducing potential losses, preserving and maintaining the Bank's business reputation with customers and counterparties, founders, financial market participants, government and local authorities;

- improving the efficiency of operations by improving the quality of their management;

- ensuring the observance of the legitimate interests of its clients, shareholders and depositors entering into financial relations with the Bank.

When building a strategic risk management system, the Bank uses the following main approaches:

- constant control over the observance of the legislation, including the legislation on bank secrecy and the organization of internal control;

- ensuring the timeliness of settlements on behalf of clients and counterparties, payment of deposits, interest on accounts (deposits), as well as settlements for other transactions;

- monitoring the effectiveness of the operations and the quality of their management;

- control over the reliability of financial statements and other published information provided to founders (participants), clients and contractors, regulatory and supervisory authorities and other interested parties, including for advertising purposes;

- development of a general banking information support system, which ensures timely, complete and reliable receipt of information by persons who need such information for making decisions;

- observance of the principle of collegiality when making decisions on the most important issues of the Bank's life and regulatory support of this principle;

- observance of the principle of establishing and delineating responsibility between the divisions involved in the processes of the Bank's management;

- observance of the principle of delineation of functional responsibilities of the Bank's divisions within the framework of a clear division into front-, middle and back-offices.

In order to conduct an effective analysis and take measures to minimize strategic risk, the Bank, in accordance with the directions of its activities, enters information on losses from strategic risk into the analytical database of losses, reflecting information on the amount of losses, the reasons for their occurrence and methods of compensation, as well as information on factors increased risk.

The Bank monitors all information that appears about the Bank and its managers in order to assess its impact on its business reputation, and also makes a legal assessment of this information.

Bank liquidity is closely related to balance sheet liquidity. In order to maintain the liquidity of the balance sheet, the bank is obliged to constantly maintain the necessary and sufficient level of funds in correspondent accounts, cash on hand, quick assets, i.e. manage liquidity.

Liquidity is the ability to satisfy the bank/company's short-term obligations using assets that can be most readily converted into cash.

Liquidity risks are monitored and managed through the following ratios:

1. Ability to satisfy current liabilities using current assets.
2. Ability to satisfy current liabilities using the most liquid of current assets.
3. Ability to satisfy current liabilities using only cash and cash equivalents.

Assessing a bank's liquidity is one of the most difficult tasks to get an answer to the most important question: is the bank capable of meeting its obligations. The ability of a bank to meet its obligations is influenced by the characteristics of the state and changes in the resource base, asset recovery, financial performance, the size of the bank's own funds (capital), as well as the quality of bank management, management, which at certain times can play and play a decisive role.

III CHAPTER. RISK MANAGEMENT IN BANKING

3.1. Credit risk management

Lending activities require certain judgments regarding the creditworthiness of the borrower. These judgments are not always accurate and correct, and the

borrower's creditworthiness can deteriorate over time for a variety of reasons. The main risk that the bank faces in its activities is the credit risk, consisting in the inability or unwillingness of the partner to act in accordance with the terms of the agreement. This risk is related not only to lending, but also to other operations that are reflected in the bank's balance sheet or off-balance sheet accounting (investments in securities, guarantees, acceptances, etc.). This underlines the special role of credit risk.

Before starting to analyze the credit risk, it is necessary to analyze the bank's loan portfolio. This must be done because the assessment of credit risk is always carried out on the basis of a number of indicators, the calculation of which includes the absolute values of the loan portfolio.

The loan portfolio of the studied bank consists of two main segments (Table 6): loans to corporate clients and loans to individuals. In this case, the initial sign of the classification of the loan portfolio is the term of placement of loans by the type of borrower. This classification is necessary to determine the importance of the bank in the regional economy (the longer the loans, the more the bank fulfills its role as a financial donor). This analysis makes it possible to form a preliminary judgment on the temporal structure of liabilities, since the “longer” the loans, the more long-term attracted resources the bank has in its liabilities (otherwise, the bank will not be able to meet the liquidity standards).

Based on the data in Table 6, it can be seen that long-term debt on loans in the bank occupies the largest share in the total volume of loans, which positively characterizes the bank's activities in the regional market.

Table 6: The structure of the loan portfolio of the Pasha bank

Indicators	2018		2019		2020	
	amount (man.)	specific gravity (%)	amount (man.)	specific gravity (%)	amount (man.)	specific gravity (%)
1. Short-term debt on loans (L _s)	2698927,0	9,7	3451822,0	9,7	3744 531,0	5,3
1.1. Loans to individuals	23 795,0	0,4	12 816,0	0,2	34 435,0	0,3

1.2. Loans to legal entities	2675232,0	29,6	3439106,0	29,8	3 708 996	25,1
2. Long-term debt on loans (L _i)	6373 929,0	70,1	8144505,0	70,1	10996 382	74,7
2.1. Loans to individuals	2321126,0	25,7	2217868,0	51,2	3 221 328	21,8
2.2. Loans to legal entities	4052 903,0	44,5	5927637,0	19,0	7 775 154	52,8
3. Total (L _s + L _i)	9067 956,0	100	11595327,0	100	14 749 713	100

Source: Paşabank: https://www.pashabank.az/about_us/lang,en/#!/financial_reports/, 2020

The stable growth of the bank's loan portfolio testifies to the bank's competent lending policy aimed at expanding the supply of loan resources to various categories of borrowers. The main share in the bank's loan portfolio is made up of loans to legal entities (44.6%). All this allows us to judge that lending to legal entities is the most demanded banking service by clients, and income from it remains one of the main sources of the bank's profit formation. Consider the structure of the loan portfolio of individuals by types of loans placed (Table 7).

Table 7: The structure of the loan portfolio of individuals

Loan type	2018		2019		2020	
	Manat	%	Manat	%	Manat	%
Mortgage	1153 878	49,1	1 069 886	47,6	1 079 444	47,5
Consumer	990 271	42,4	998 368	44,7	1 051 301	46,5
Car loan	154 821	6,5	132 984	5,8	106 105	4,6
Credit cards	19 567	0,9	18 101	0,7	16 651	0,8
Others	26 573	1,1	21 520	1,1	14 290	0,7
Total	2 344800	100	2 239 559	100	2 265 591	100

Source: Paşabank: https://www.pashabank.az/about_us/lang,en/#!/financial_reports/, 2020

According to Table 7, mortgage loans and consumer loans for urgent needs prevail in the structure of the loan portfolio of individuals, and the share of the latter in the total loan portfolio increases from year to year and becomes almost equal to the share of mortgage lending by 2020. This is due to the growing need of the population to finance their running costs.

We will begin the analysis with the dynamics of the volume and structure of overdue debts of borrowers. One of the important indicators of the quality of the loan portfolio is the indicator of overdue debt, therefore, let us consider the structure of overdue debt for the bank's loan portfolio as a whole (Table 8).

Table 8: The structure of overdue debt in the total volume of the bank's loan debt

Indicator	2018		2019		2020	
	Manat	% of LR	Manat	% of LR	Manat	% of LR
Overdue debt of individuals persons	132 854	1,6	257 671	2,3	457019	3,2
Overdue debt of legal entities persons	301 855	3,2	261 994	2,2	322 406	2,3
Total arrears	434 699	4,9	519 565	4,6	778 425	5,2
Total loans receivable (LR)	9 067 966		12594 327		14 749 723	

Source: Paşabank: https://www.pashabank.az/about_us/lang,en/#!/financial_reports/, 2020

As can be seen from the data in Table 8, the amount of overdue debt is increasing and has reached 457,019 man., It has grown by 79%, which worsens the quality of the loan portfolio. In this case, it is necessary to find out the reasons for the growth of overdue debt, since it can occur either as a result of an increase in the volume of the loan portfolio, or as a result of a deterioration in the level of solvency of clients.

Revealing the reason for the growth allows the leading coefficient (To), which is calculated as the ratio of the growth rate of the loan portfolio to the growth rate of overdue debt. In the event that the result is more than one, then it can be concluded that the volume of overdue debt increases as a result of the growth of the loan portfolio, which does not pose a threat to the financial stability of the bank. In the case when the obtained result is less than one, it can be said that the growth of overdue debt is associated with the deterioration of the financial situation of the borrowers, which threatens the bank with a loss of liquidity.

$$\text{Lead coefficient (2018 – 2020)} = 64\%/78\% = 0,82$$

The obtained result is less than one, which indicates a sharp decrease in the clients' solvency. Considering the structure of overdue debt by type of borrower, over the period under review, the share of overdue debt of individuals increased by more than 2 times in 2018 compared to 2016, and the overdue debt of corporate clients decreased. In general, the existing amount of overdue loan debt is not critical, since it is no more than 5%, and indicates the effective work of the bank's credit departments. Next, you need to calculate the coefficients that allow you to determine how risky the bank's activities are (table 9). These include: the reserve ratio; risk coefficient; problem ratio of loans.

Table 9: Bank credit risk ratios

Coefficient	Formula	Role	Value				Compliance with the optimal
			The actual			Optimal	
			2018	2019	2020		
Reserve ratio	$R_{reserve} = \frac{RPLA_a}{CI} \times 100\%$ <i>R_{reserve}</i> – reserve ratio,%; <i>RPLA_a</i> – the amount of actually created reserve for possible losses of man.; <i>CI</i> – credit investments, man.	Allows you to determine the degree of bank protection against loan defaults	10,8	12,1	9,7	Not higher than 15	Compliant
Risk ratio	$R_{risk} = \frac{CI - RPLA_a}{CI}$ <i>R_{risk}</i> – risk ratio; <i>RPLA_a</i> – the amount of actually created reserve for possible losses of man.; <i>CI</i> – credit investments, man.	Allows you to assess the quality of the loan portfolio in terms of credit risk.	0,88	0,86	0,8	Should aim for 1	Compliant
Problem ratio	$R_p = \frac{OD}{CI} \times 100\%$ <i>R_p</i> – problem ratio,%; <i>OD</i> - balance of overdue debt as of an even date, man.; <i>CI</i> – credit investments as of the reporting date, man.	Shows the share of problem loans in the total amount of debt	4,9	4,6	5,2	Not higher than 10	Compliant

Source: Paşabank: https://www.pashabank.az/about_us/lang,en/#!/financial_reports/, 2020

The smallest coefficient indicates that the largest gates of loans are observed; the problem of loans is observed, which indicates an increase in debt, however, the acceptable level of the Central Bank is:

- the maximum amount of risk per borrower or a group of related borrowers (H6);
- the maximum size of large credit risks (H7);
- the maximum amount of credit risk per shareholder (N9.1);

- the maximum amount of credits, loans provided to its insiders, as well as guarantees and sureties issued in their favor (H10.1) (Table 10).

Table 10: Bank credit risk ratios as of the reporting period

Indicator	Value		Corresponds / does not correspond to optimal
	The actual	Optimal	
Bank credit requirements to the borrower, man.	206 257		
Own funds, man.	147 571		
H6,%	9,7	no more than 25%	Compliant
Large credit risk, man.	8 276 228		
Own funds, man.	2 148 571		
H7,%	385,4	no more than 800%	Compliant
Credit requirements for participants, man.	0		
Own funds, man.	2 157 571		
H9.1,%	0	no more than 50%	Compliant
Credit requirements for insiders, man.	41 173		
Own funds, man.	2 157 571		
H10.1,%	1,8	no more than 3%	Compliant

Source: Paşabank: https://www.pashabank.az/about_us/lang,en/#!/financial_reports/, 2020

As the data in Table 10 show, all credit risk ratios are within the limits allowed by the Central Bank of the Republic, which indicates a low level of existing credit risk. The standard for the maximum amount of loans, bank guarantees and sureties provided by the bank to its participants (N9.1) is equal to 0, since the bank does not provide loans, bank guarantees and sureties to its shareholders, respectively, the credit risk does not apply to the bank's shareholders. The most significant in relation to the optimal value is the H10.1 ratio, equal to 1.9%, which means that the total credit risk of the bank in relation to all insiders, which include individuals who are able to influence the decision to issue a loan by the bank, is quite high. but does not exceed the permissible limit.

3.2. Interest risk management

Interest rate risk refers to those types of risk that the bank cannot avoid in its activities.

Moreover, the responsibility for measuring, analyzing and managing it lies entirely with the management of the credit institution. The impact of changes in interest rates on the profitability of a credit institution occurs as a result of changes in net interest income, as well as in the amount of other income that depends on the interest rate and operating expenses. Changes in interest rates also affect the present value of assets, liabilities and off-balance sheet positions of a credit institution, since the present value of future cash flows depends on changes in interest rates.

The interest rate risk management system is a set of blocks of elements, which include:

- subjects of management, identification of interest rate risk;
- analysis and assessment of interest rate risk;
- ways to regulate and monitor risk; control of the system, the ultimate goal of which is to minimize the interest rate risk arising in the course of the bank's activities.

The task of managing interest rate risk is to find the optimal balance between profitability and risk, provided that liquidity is maintained.

To build an effective interest rate risk management system, it is necessary to solve the following more specific tasks:

- 1) formulate at the conceptual level the vision, strategy and objectives of the bank's interest rate risk management and clarify them in terms of interconnection and internal logic;
- 2) establish the principles for determining, assessing and diagnosing risk as a basis for setting priority strategies and objectives and ensure balanced protection of the interests of all persons related to the bank;
- 3) use these principles as a basis for creating the most important management control procedures, including when creating a diagram of the organizational structure, preparing documents on the delegation of powers, as well as terms of reference;

4) determine procedures for ensuring responsibility, self-assessment and performance assessment in accordance with the principles of risk management and control system, use these procedures as factors for improving the management process;

5) develop a monitoring and feedback mechanism in order to ensure high quality of assessment procedures and verification of their observance, focusing on the above principles and procedures.

The interest rate risk management system consists of a number of subsystems:

- strategic management (the level of defining management principles within which instructions and procedures are developed);
- analytical subsystem (decision-making process for managing interest rate risk);
- executive subsystem (collection of information, direct implementation of operations in order to fulfill decisions on measures to manage interest rate risk).

The process of building a system for managing interest rate risk for a bank should be implemented by adopting the following methods for managing interest rate risk:

- method of duration;
- neutralization of claims and obligations;
- hedging of interest rate risk;
- effective frontier method.

The most famous complex methods are:

- gap analysis and control;
- analysis and control of durations.

The main method of analysis is modeling.

The listed methods make it possible to implement various techniques of strategies. The risk avoidance technique is implemented by neutralization methods. Full and partial transfer of risk is realized by hedging. The risk limitation technique can be implemented by the methods of gap, effective frontier and optimization of the portfolio structure.

Thus, the negative impact of interest rate risk on the financial condition of a credit institution, its income and capital base necessitates special attention of management to this problem. The impact of interest rate risk may turn out to be both negative and positive for the bank, therefore, the credit institution can receive both significant losses and significant income.

The main source of interest rate risk for the Bank is the mismatch in the maturity of the Bank's liabilities and claims, which are sensitive to changes in interest rates, as well as off-balance sheet positions. Interest rate risk can arise for both active and passive balance sheet items.

The Bank's implementation of a unified interest rate policy is carried out taking into account internal and external factors. External factors include the value of interest rates in the market for a certain type of instrument. Internal factors include the correlation of the Bank's assets and liabilities by rates and maturities and the determination of GAP gaps.

CONCLUSIONS AND RECOMMENDATIONS

Based on the research conducted, the following conclusion can be drawn:

1. The theoretical and methodological difficulty of disclosing the essence of banking risk is largely due to the fact that it is either considered from a general point of view, when they talk about the presence of an intermediary risk, as such, or when the emphasis is only on the study of risk arising at the last stage - credit risk. Without denying the importance of such approaches, we note that the risk is practically not

considered from the standpoint of its translation, transmission, or, as they say today, its "intermediation". This process is due to the fact that financial flows and risks are linked together and transferred simultaneously from one market participant to another, that is, risk is mediated. At the same time, some actors lose their intermediary functions, while others, on the contrary, connect to them, passing the risk to each other. Consideration of banking risk through the prism of its intermediation. Risk transfer economists often consider not as a process consisting of a number of interrelated stages of intermediation, but only as a separate element of avoiding risk, leveling it, for example, transferring risk to an insurance company. Another methodological problem is related to the fact that risk intermediation is not associated with a change in the liquidity of money that dominates the financial flows of a particular bank (other flows exist, for example, in the form of securities: bills of exchange, etc.).

2. Risk management is one of the most dynamically developing areas of management. In the activities of a commercial bank, the risk management system (or risk management) plays a huge role. All industry participants - credit institutions, clients and the state - are interested in minimizing possible losses. Risk management abroad has long been recognized as an effective tool of modern management, in our country the practice of risk management has not yet become widespread, but this is a matter of tomorrow. The lack of guidelines and risk management standards that adequately reflect the specifics of the Azerbaijani economic situation increases the importance of research, development and use of risk management systems.

3. The classification of risks in Islamic banks is the same as in traditional banks, with the exception of interest rate risk. The risks of Islamic banks cover more investment and market risks, and risk management procedures are more complex because the financing principle is based on partnership and trade, compared to the same procedures used in traditional banks.

4. The world economic and financial crisis has shown that global and local systems of risk management and development at the macro and micro levels were not ready for modern challenges. The theoretical foundations of riskology and risk

management, anti-crisis management in corporate governance begin to describe the new economic reality and summarize, they try to suggest testing new management tools. Many of the risk management tools are used in insurance and reinsurance. Historians say that risk has always existed, for example, even ancient people gambling, in particular dice, assessed risks. Scenes from this game have been found in both Egyptian tombs and antique Greek vases. Later, the risk was observed in navigation, entrepreneurship in banking. Many scientists agree on what they call modern society - a society of risk.

5. There are several ways to reduce the risks of the bank, namely: insurance - security against loss or damage, the risks are transferred to the insurer. This method is more suitable for reducing credit risks; reservation - compensation for possible losses, the bank forms its own funds, as well as mandatory reserves for possible losses on loans and other assets; hedging - the risk is transferred not to the insurer or guarantor, but to financial market participants by concluding transactions using derivative financial instruments. This method is more suitable for reducing market risks; distribution - the distribution of risk between the parties to the transaction in the form of the inclusion of risk in the cost of services: in the interest rate, commissions, etc. This method is more applicable to reduce credit risks; diversification - the process of distributing the invested funds between various objects of capital investment, which are not directly related to each other, in order to reduce the degree of risk; minimization - the implementation of a set of measures aimed at reducing the likelihood of occurrence of events or circumstances leading to losses and to reduce the amount of potential losses; limiting - setting a limit, i.e. the maximum amount of expenses for various banking operations

6. The process of credit risk management presents certain difficulties for banks. Government control, internal and external political pressure, production difficulties, financial constraints, market disruptions, disruptions to production schedules and plans, and frequent business and manufacturing instabilities undermine the financial position of borrowers.

Among the most common disadvantages are:

- poor analysis of the credited industry;
- superficial financial analysis of borrowers;
- overpriced collateral;
- insufficiently frequent contacts with the client;
- lack of control over loans;
- excessive use of borrowed funds;
- incomplete loan documentation;
- inability to effectively control the credit process.

7. When carrying out measures to assess interest rate risk, one should take into account both the risk itself that may arise in the future due to the untimely repayment of both short-term and long-term resources issued. The following criteria should be taken into account in the risk assessment process:

- size and stability of net interest margin;
- levels of private and general interest rate risks;
- sensitivity of interest income, borrowed and borrowed capital to the impact of changes in the level of interest rates; compliance of the scenarios of the situation development developed during stress testing;
- the nature of the risk (sensitivity of the volume and cost of provided banking services to changes in market conditions);
- the complex nature of interest rate and credit risk.

We can make the following suggestions on the research topic:

- If a risky situation arises, the bank increases the likelihood of losing not only its own, but also borrowed funds of individuals and legal entities. This can entail large financial losses for participants, which are linked by monetary obligations. Therefore, in order to minimize risks, a bank must develop a management system in relation to any specific risk, determine its scope (business, operations, instruments, currencies, terms), determine the levels of accepted risk, its impact on profitability, asset quality and capital.

- The presence of a large number of risk factors reduces the stability of not only one particular bank, but the entire banking system. In this regard, it becomes

necessary to develop a certain algorithm (scheme), with the help of which the effective management of banking risks will take place. In its most general form, it can be represented as follows:

1. An objective assessment of the current situation.
2. Identification of internal and external causes of risks.
3. Determination of the degree of risk.
4. Coordination of the risk management process.
5. Comparison of each risk with the available capabilities and resources of the bank.
6. Analysis of risk factors.
7. Identification of risks.
8. Assessment of banking risks.
9. Implementation of measures to reduce the negative consequences arising from the onset of risk.

- Banks should be more inclined to increase their capital and reduce borrowing to a certain level so that the bank's liquidity risk level is always in line with international financial standards.

- PASHA BANK should make extensive use of the risk insurance practices used by Islamic Banks in financing investment projects.

REFERENCES

In English

1. Acharya V., Almeida H., and Campello M. "Aggregate Risk and the Choice Between Cash and Credit Lines, *Journal of Finance*", 2013, 68 (5), p.2059-2116.
2. Agazzi E. (2014), "Moral measurement of science and technology". M., 285 p.
3. Aliev B.K., Alikberova A.M. "Assessment of factors regulating the profit of a commercial bank" // *Finance and Credit*. 2013, №20, p.11-19.
4. Aliev B.K., Idrisova S.K., Rabadanova D.A. (2014), "Money, credit, banks: textbook. Manual". M.: University textbook: INFRA-M, 288 p.

5. Aliev B.K., Idrisova S.K., Rabadanova D.A. "Assessment of the loan portfolio in order to ensure the stability of the banking sector in the region" // Finance and Credit, 2017, №25. p.2-8.

6. Ariccia G. "Asymmetric information and the structure of the banking industry". European Economic Review, 2015, 45(10), p.1957-1980.

7. Aveny B.R., Brevoort P.K. & Canner B.G. "Credit Scoring and Its Effects on the Availability and Affordability of Credit. Journal of Consumer affairs, 2009. Vol. 43, №3, p.41-42

8. Baidina O.S., Baidin E.V. Financial risks: nature and relationship // Money and credit. 2017, №7, p.31-35

9. Beck W. (2014), "Risk Society. On the way to another modernity", M.: Progress-Tradition, 123 p.

10. Bobil V.V. (2013), "Creative" banks are an alternative product to banking. Recent trends in economics and management: a new look: collection of materials of the international scientific and practical conference (April 26-27). Donetsk: GO "SIEU", 245 p.

11. Bobil V.V. (2013), Associativity in the establishment of team hours of mercantile banks in the banking sector of Ukraine. Economics of the day: current nutrition and innovation aspects: collection of materials of the international scientific - practical conference (26-27 April). K .: GO "Kiev Economic Science Center", - Part 1. p.51-54.

12. Bondarenko T.N., Alekhina V.I. The liquidity of a commercial bank: problems and improvement of management methods // Modern scientific research and innovations. 2014, №5-2 (37). p.9-12

13. Burlachkov V.K. Reform of the world monetary system and the use of economic invariant // Economic Issues, 2012, №1. 563 p.

14. Chernova G.V., Kudryavtsev A.A. (2016), "Risk management: textbook. Allowance". Moscow: TK Welby, Prospect Publishing House, 160 p.

15. Danilovskikh T.E., Makovskaya T.V. “Adequacy of equity capital of commercial banks in the context of the transition to Basel III recommendations: a regional aspect” // *Fundamental research*, 2014, №8-3 p.662-670.
16. Douglas M., Wildavsky A. (2015), “Risk and culture: an essay on the selection of technical and environmental dangers”. Berkeley, California: University of California Press, 456 p.
17. Drozdovskaya L.P., Rozhkov Y.V. (2017), “Intermediation of risk in the information and credit market: monograph”. Khabarovsk: RITs KSAEP, 439 p.
18. Focardi C. “The Mortgage Crisis: How are credit risk managers responding?” 2009, Vol 70, issue 3,
19. Funtowicz S.O., Ravetz J.R. Science for post normal age // *Futures*, №25. 2019, p.739-756.
20. Funtowicz S.O., Ravetz J.R. (2015), “Three types of risk assessment and the emergence of postnormal science // *Social theories of risk*”. Westport, Connecticut: Praeger, 369 p.
21. Gaffney M. Money, “Credit and Crisis, *American Journal of Economics and Sociology*”, 2009, Vol. 68, №4. p.142-145
22. Gerasimova E.B. “Credit risk analysis: rating assessment of clients. *Finance and credit*”, 2008, №17, p.30-44.
23. Gomes T., & Khan N. (2018), “Strengthening bank management of liquidity risk: The Basel III liquidity standards”. Bank of Canada Financial, 544 p.
24. Grossman S., Stiglitz J. (2014), “On the impossibility of informationally efficient markets *The American Economic Review*”. 456 p.
25. Hartmann P “Interaction of market and credit risk.” *Journal of banking and Finance*, 2009, Vol 34, Issue 4, p.12-17
26. Inozemtsev V. Purpose and structure of the corporation as the basis of its competitiveness [Electronic resource]. Access mode: http://www.cfin.ru/management/targets_as_basis.shtml.
27. Kachaeva M.I. “Credit risk assessment in a commercial bank”. *Bank lending*, 2008, №9. p.10-17

28. Kusserg S. "New approaches to the theory of financial intermediation and banking strategy" // Bulletin of the Financial Academy, 2015, №1. p.25-28.
29. Laeven L., Valencia F. (2010), "Resolution of banking crises: The good, the bad, and the ugly." IMF Working Paper WP/10/146. June, <https://www.imf.org/external/pubs/ft/wp/2010/wpl0146>. Pdf.
30. Lantukh A.V., Kuzmicheva I.A. "Liquidity risk of commercial banks of the Russian Federation" // International Journal of Applied and Fundamental Research. 2015, №3. p.63-67.
31. Minat V.N. (2016), "The financial environment of entrepreneurship and entrepreneurial risks: a textbook for universities". S.: Exam Publishing House, 189 p.
32. Oet M.V., Bianco T., Gramlich D., Ong S.J. "SAFE: An early warning system for systemic banking risk." Journal of Banking & Finance, 2013, 37 (11). p.510-453.
33. Sazykin B. "Organizational management of the bank's operational risks" // Bankauski vesnik. 2016, №24. p.17-24.
34. Semyonova M.V. (2010), "Asymmetry of information on the market of bank deposits of individuals: raids of depositors, transparency and the system of deposit insurance": diss. ... Cand. econom. Sciences: 08.00.01. M., 162 p.
35. Shapkin A.S. (2014), "Economic and financial risks. Valuation, management, investment portfolio". 3rd ed. M.: Publishing and trade corporation "Dashkov and K", 544 p.
36. Shtyrova I.A. "The current state of credit risk management". // Business and banks. November 2014, №46. p.1-7.
37. Steel D. (2015), "Philosophy of the precautionary principle". Cambridge University Press, 456 p.
38. Stoyanov E.S. (2016), "Financial management: theory and practice": textbook. Moscow: Perspektiva, 656 p.
39. Sukhov A.V. Credit "Risk Management in Russia and Europe: A Comparative Analysis. Management in a credit institution", 2008, №6. p.32-39.

40. Sultanov G.S., Sultanova E.A. (2018), "Features of credit and investment services of commercial banks // Actual problems of economic development: collection of articles. Materials". Belgorod: Belgorod State Technological University named after V.I. V.G. Shukhova, p.158-162.

41. Suprunovich E. "Credit risk management", 2014, №25. p.25-31.

42. Tapman L.N. (2012), "Risks in the economy: Textbook. manual for universities". M.: UNITI-DANA, 380 p.

43. Totskiy M.N. (2008), "Methodological foundations of credit risk management in a commercial bank". Finance. 417 p.

44. Usoskin V.M., Belousova V.Y., Kozyr I.O. "Financial intermediation in the context of the development of new technologies" // Money and Credit, №5. 2017, 265 p.

45. Varkulevich T.V. "Internal audit in the organization's financial stability management system. Territory of new opportunities" // Bulletin of the Vladivostok State University of Economics and Service. 2012, №2. p.86-93.

46. Weift N.F., Bostandzic D., Neumann S. "What factors drive systemic risk during international financial crises?" Journal of Banking & Finance. 2014, Vol. 41. p.78-96.

47. Wynne B. (2018), "Risk management and hazardous waste: implementation and dialectics of credibility". N. Y.: Springer, 125 p.

48. Zamula E.V., Kuzmicheva I.A. "Enterprise tax risks and ways to minimize them" // International Journal of Applied and Fundamental Research. 2014, №8. p.118-122.

49. Zverkov A.I., Zverkova T.N. "Financial intermediaries: functions, stages and motives expansion // Financial analytics: problems and solutions", 2014, №37. p.12-14.

List of Table

Table 1: Classification of banking risks by main types.....	26
Table 2: Examples of Islamic financial contracts and their underlying characteristics.....	38
Table 3: Types of profit-sharing investment accounts offered by Islamic Banks..	39
Table 4: A comparison of the financial risks facing conventional and Islamic banks.....	39
Table 5: Stages of science organization - from applied to post-normal.....	50
Table 6: The structure of the loan portfolio of the Pasha bank.....	66
Table 7: The structure of the loan portfolio of individuals.....	66
Table 8: The structure of overdue debt in the total volume of the bank's loan debt.....	67

Table 9: Bank credit risk ratios.....	68
Table 10: Bank credit risk ratios as of the reporting period.....	69

List of Figure

Figure 1: Hierarchical system of monetary aggregates.....	20
Figure 2: Different positions in relation to risk.....	52