

# Harmonization of financial reporting and audit in banks

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*Annotation;- The examination of control procedures, external and internal audit, banking organizations. The brief review of international audit standards. General principles of functioning of Islamic financial and banking institutions, as well as the specifics of the development of audit standards and audit. Considered are the peculiarities of accounting, audit and control in the banking system of Russia. Discusses the problems of accounting and reporting, as well as matrix modelling of accounting operations. Proposals for harmonization of the methodology of the reporting forms and improvement of audit procedures, as well as the development of the analytical tools used in the framework of audit and control.*

## I. GENERAL PRINCIPLES

Banks are the main financial intermediaries who carry out payment, cash, deposits and credit operations, as well as perform operations on the financial markets. In this regard, the activities of these intermediaries have a significant impact on the state of the entire economy and individual physical and legal persons. Persons interested in activity of banks, can perform various roles: shareholders, managers, employees, customers and counterparties, banks, state and public organizations, as well as other economic entities interested in the efficient and reliable functioning of banking organizations. For economic decision-making, the stakeholders should have accurate information about the activity of banks and audit systems and controls designed to ensure the reliability of the presented data. Therefore, the procedures and methods of conducting audits, analysis of their results are very important activities, which are necessary for making economic decisions. To check the functioning of the banking organization is made in the form of external and internal audit. External audit is usually performed by audit firms or independent auditors, is provided on a contractual basis, mainly with the purpose of objective evaluation of reliability of accounting and reporting, as well as Advisory services. Internal audit is a process of analysis and control, which usually carries out the Bank's specialised unit. Internal auditing procedures aimed at minimizing the losses from risks and increasing the efficiency of banking systems and processes. These procedures help the management to identify and assess

risks, and to develop interventions aimed at reducing risk and increasing the efficiency of banking activities. Internal audit helps the banks to achieve the set goals, contributes to the effectiveness of internal control processes, risk management and corporate governance. Effective internal audit can reduce the external audit costs, but may not cancel the need for an external audit, as a mandatory audit of accounting and reporting in banks usually a legal requirement. You should pay attention to the fact that the internal audit and control, perform different tasks, but can operate within a single structural unit of the Bank. The objective of internal control is a system of internal control of the Bank (or rather active assistance to management in building such systems), and the task of the internal audit is an assessment of the reliability and efficiency of this system. Internal control is a mechanism through which the owners, the Board of Directors, Executive management companies obtain reasonable assurance that the organization will achieve its objectives in the most effective manner. The purpose of internal control is to ensure the timely identification and analysis of risks, the reliability of financial and management information, the safeguarding of assets, compliance with laws and internal policies and procedures, execution of financial and economic plans, effective use of resources. Different types of audits aimed at assessment of conformity of the information about the organization, the real state of Affairs. However, there are significant differences in goals, objects and users of the audit, the content and character checks. Since the external and internal audits perform specific functions differentiate them the following features. [1]-External audit is traditionally engaged confirm the reliability of financial reporting and focuses on the transactions and events that may have a material impact on the financial statements. Internal audit is aimed, first of all, on assessment of existing control systems and risk management of the Bank and focuses on the transactions and events that hinder the effective achievement of organization goals. [2]-External audit is, first of all, the interests of external stakeholders as potential investors, creditors, and others, while the internal audit primarily serves the interests of the boards of Directors (audit Committee) and the managers of credit institutions. [3]-External audit, within the framework of the provision of

audit services, makes no economic justification of managerial decisions and performance of subdivisions of the Bank that is usually one of the tasks of internal audit.

## II. INTERNATIONAL PRINCIPLES OF AUDIT IN BANKS

The necessity of the harmonization process of audit activities at the international level is determined by the Lima Declaration of guidelines on auditing adopted in 1977. The Declaration is a basic conceptual document of the International organization of Supreme audit (International Organisation of Supreme Audit Institutions - INTOSAI). According to the Lima Declaration (The Lima Declaration of Guidelines on Auditing Precepts) [15], auditing is an "integral part of the regulatory system, the purpose of which is opening deviations from accepted standards and violations of the principles of legality, efficiency and economy of the expenditure of material resources". In this regard, the audit is an integral part of the financial regulation system and a compulsory element of public control. Principles harmonizing the external audits in different countries, under the auspices of the international Federation of accountants (International Federation of Accountants - IFAC) established the Committee on international auditing standards and expressing confidence (International Auditing and Assurance Standards Board - IAASB), which develops international standards of audit (International Standards on Auditing - ISA). These standards are aimed at formation of common approaches to audit and procedures that are designed to provide objective information on observance of public interests in the analysis of operations and financial organizations. IFAC publishes ISA and provides wide access to these standards, providing everyone with the opportunity to get acquainted with publications [16]. International coordination in the field of internal audit is carried out by the Institute of internal auditors (Institute of Internal Auditors - IIA), which is an international professional Association, on the basis of which develop methodology and procedures of internal audit in the world. IIA provides for the development of international professional standards and code of ethics of internal audit, and also provides expert role in the field of creation of systems of corporate governance, internal audit and control. As the expert organization IIA participates in the development of methodological base in the field of internal control, internal audit and risk management [17]. External and internal audit in banking organizations has certain specificity, and therefore is subject to a separate regulation, and finds a special reflection in the generalization of the international experience. Major international developments in this area are the recommendations of the Basel Committee on banking supervision, Bank for international settlements Basel Committee on Banking Supervision - BCBS, Bank for International Settlements (BIS). Since 2001, the Basel

Committee on banking supervision (bcbn) has developed several documents containing the recommendations on creation of systems of corporate governance, internal audit and control systems in banking organizations, as well as the principles of improving the quality of the external audit and the organization of relations between Supervisory authorities, internal and external auditors. Currently, in order to improving the performance of the audit and oversight procedures bcbn published a special development in the field of external and internal audit in banks. Banking organizations have a significant impact on the economy and contribute to the overall financial stability. For development of the practice of conducting of external audit bcbn produced "External audit in banks" (External audits of banks) [18]. This document outlines nine principles and explanations to them, that should guide the Bank's audit Committee, as well as 6 Supervisory expectations and recommendations concerning the conduct of the external auditor and the auditing financial statements. It is expected that the agreed activities of organizations regulating banking activities, the external auditors and Bank audit Committee on the basis of shared principles and recommendations will contribute to the development of banking supervision and audit. Effective interaction of regulatory authorities and external auditors will allow balancing the interests of development of the banking industry and consumers of financial services, which should eventually increase the financial stability of the national and international economic systems. An effective system of internal audit and control raises the General level of corporate governance in banking organizations. The functions and procedures of internal control increases the degree of assurance manuals, owners of banks, control and Supervisory bodies of qualitative functioning of the internal control system, which aims to achieve the goals of Bank, and also protection of interests of owners and creditors of the banking organization. To improve systems of internal audit and control bcbn had published "internal audit in banks" (The internal audit function in banks) [19]. In the basis of this document is 20 principles, which are divided into three sections: a) Supervisory expectations related to the functions of internal audit (Supervisory expectations relevant to the internal audit function); b) the ratio of supervisors to the internal audit function (The relationship of the supervisory authority with the internal audit function); C) assessment of the Supervisory authorities of the internal audit function (Supervisory assessment of the internal audit function). Information exchange between the audit Committee, the Bank's management, external and internal auditors, as well as organizations that perform control and Supervisory functions are performed through the relevant international standards on auditing (ISA) and the standards developed by the Institute of internal auditors (IIA). Recommendations bcbn focused on facilitating the development of internal audit in banking organizations.

Bkbn encourages internal auditors of banks to comply with the recommendations and to contribute to the development of national and international professional standards, which should facilitate the observance of prudential standards in the development of standards and practices of internal auditing. Harmonization of procedures of Bank audit on the basis of development of the Basel Committee and the international principles and standards aimed at improving the quality of audit, the aim of which is to provide interested persons and organizations with adequate and comparable information on the activity of banking institutions in different countries, on the basis of universally recognized, open and clear methodology.

### III. AUDIT IN ISLAMIC BANKING ORGANIZATIONS

Islam is one of the basic directions of a human civilization as a system of world Outlook, spiritual and economic culture. Today, Islam is one of the most influential religions of the world, taking in the number of followers' second place after Christianity. Muslim culture is a part of human civilization, which represents significant spiritual, intellectual and material resources of the global economic system. Islamic business ethics is based on principles such as equity in the prevention of an excessive concentration of capital in society to the detriment of a specific group, justice for the effort and reward, justice for the prohibition of the abuse of capital and ethical restrictions income. The principles of exercising the Islamic financial transactions are based on Sharia - complex rules and regulations relating to the management of the economy, social, political and cultural aspects of the Islamic society. The Sharia (literally means the watering, source) is a basic law of Islam, one of the confessional forms of the religious right, complex regulations, ordinances and prohibitions. Sharia law based on the Koran, the Sunna and fiqh (Islamic complex social norms). Fiqh engaged in the formulation of specific laws, otherwise it can be called - practical jurisprudence. Sharia contains elements of civil, constitutional, criminal, administrative, family and procedural law. All Muslim religious law schools (madhhabs) in varying degrees are oriented for execution of Sharia norms. Financial institutions are part of the Islamic economic model based on Sharia laws and regulations. The use of traditional financial instruments in the Muslim world because of discrepancy to Shari'ah rules is considered invalid. Shariah prohibits certain types of economic activity (for example, usury, speculation, gambling, lotteries, commercial transactions, for the benefit of only one party, and so on). According to Islamic economic doctrine of material and financial resources should not remain unused, contact treasure or be used for speculative purposes (from derivatives to casino games. The assets of the institutions shall be rationally used for the benefit of society to create real added value, increment the mass of

commodities and services, but not in the money supply. A special role in decisions on the compliance of financial operations of Sharia plays fatwa's. In Islam, the fatwa is the official judgment, a kind of verdict on any religious-legal, cultural, or economic issue, issued by the mufti or other authoritative religious leaders and organizations in response to a request Kadi (Sharia judge or another person. This decision on any issue, basing on the principles of Islam and on the precedents of the Muslim legal practice. Fatwas due mazhabs (schools of law), but, nevertheless, many fatwa are Muslim character. The fatwa is taken orally or be issued in the form of a special document can serve as the basis for judicial decisions Kadi or to select requesting their actions. In the field of regulation of economic activity of Islamic organisations of the most famous fatwa Council of the international Islamic Academy of jurisprudence (fiqh) at the Organization of the Islamic Conference (International Islamic Fiqh Academy (IIFA, Organisation of Islamic Cooperation - OIC). These fatwas represent the responses of the Council of Islamic Academy of jurisprudence on issues coming from Muslim communities, state institutions and organizations. In responses based on the study and understanding of the social, legal, economic and financial problems are discussed different aspects and rules of Islamic economic relations and new phenomena, which declared themselves in the economy and finances in recent years. Islamic banks are guided by common to all Islamic organizations principles and rules. Because this is not permitted credit operations in the traditional sense-as the inadmissibility of any revenue generated by personal labour, and particularly the percentage - RIBA. Attraction of resources occurs through equity participation of the Bank in the profits and losses of the business. Bank's fee shall fully depend on the final result of this enterprise and correctness of the assessment of its economic viability, marketing, managerial and entrepreneurial skills partner is a businessman. The most important principle of Islamic banking is the sharing of risks and capital. Another important aspect of the activity of Islamic banks to focus not only financially but also on the physical expansion of economic goods and services. Islamic banks carry out various financial transactions, except those that are contrary to the laws of Sharia. In the assets of Islamic banks are Bank products, which can be grouped as follows: trade Finance, medium-term financing and capital. In the liabilities of the banks, in addition to equity, is included current accounts, savings deposits, the funds of which are used to Finance short-term operations, and investment deposits, which are distributed profits and losses of the Bank. Principles of corporate governance for Islamic banks are established by national Islamic Central banks, Organization for accounting and auditing for Islamic financial institutions, the Council for Islamic financial services and members of Shariah Council at each Bank. Sharia councils are responsible for compliance of activities of banks of

Sharia. Shariah advisors, usually, are lawyers specializing on Islamic law and Economics. Responsible for their actions are hiring them for a job banks. Sharia Board or the Committee shall normally functions as an independent unit of the Bank, providing expertise on the issues of legislation and oversight over the activities of the banking organization to ensure its compliance with Shariah principles. Governing bodies, establishes standards for financial institutions, international capital markets and insurance sectors, working according to the rules of Shariah, are the Islamic Council in financial services (Islamic Financial Services Board - IFSB) and Organization for accounting and auditing for Islamic financial institutions (Accounting and Auditing Organization for Islamic Financial Institutions-AAOIFI). The scope of IFSB included the development of new Islamic financial instruments, and it includes the Central banks and the international monetary Fund. AAOIFI is a non-profit organization, which aims at the development and promotion of ethical standards, accounting, audit, management and Shariah standards for Islamic financial institutions. Earlier, this organization was known as the Organization for financial accounting for Islamic banks and financial institutions [20]. Islamic banks accept international norms and standards in the field of financial accounting, internal and external audit, considering the specifics of Sharia law and the rules of providing Islamic financial services. Recently, Islamic banks are actively involved in the economy of the non-Islamic countries. The basic procedures in the framework of the audit and control, aimed at analyzing the use of banking operations of the Islamic Bank activities, in General, can be represented in the form of performing the following steps. First, the analysis of the compliance of these operations to Shari'ah principles when performing this step are fatwas that determine the admissibility and the General rules for such transactions. Then examines characteristics of the banking product on consistency of the banking product to Shariah norms. At this stage the Sharia Committee forms an expert assessment according to the Bank of the product with the established standards for Islamic banking products and services. At the next step are classic and Shari'a auditing standards, which set out the rules and procedures of check of activity of the Islamic Bank. In conclusion, check formed an audit opinion on the compliance of the banking activity of national, international and Shariah standards and legislation. Islamic economic model proved its stability during the financial crisis. Islamic banks in the least affected by the financial crisis, but were unable to avoid the negative impact of the overall slowdown of the world economy.

#### IV. AUDIT AND CONTROL IN RUSSIAN BANKS

Russian banking system consists of two complementary levels. The first level of the banking system presented by the Central Bank of the Russian Federation (Bank of Russia). The Bank of Russia, being a

legal entity, simultaneously carries out functions of the state authority. It performs its functions and tasks on the basis of the Federal law "On the Central Bank of the Russian Federation (Bank of Russia)". The Bank of Russia on issues within its competence has the right to issue normative acts that are mandatory for the Federal bodies of state authority, bodies of state power of subjects of the Russian Federation and bodies of local self-government bodies, legal and natural persons acting in the sphere of financial relations. It is an important subject for financial relationships, exercises supervision over the banking system, developing normative requirements in the field of banking activity, and has a significant influence on the formation of the banking legislation. The second level of the banking system is credit organizations, for profit carry out their activities aimed at satisfying the needs of society in the banking and payment services. Credit organisation is a legal person who, for profit as the basic purpose of their activity on the basis of its Charter and special permits (licenses) of the Bank of Russia has the right to perform banking operations. In accordance with the Federal law "On banks and banking activity" Russian credit organizations are divided into banks and non-banking credit organizations. The banking law contains regulations pertaining to banking activities, i.e. establishing the legal status of banks and other credit institutions governing public relations of banks and private-law relationships of credit organizations with clients and contractors. Accounting in the Russian Federation is regulated by the Federal law "On accounting", which establishes the General requirements for accounting and accounting (financial) statements. Banking institutions accounting on the basis of special normative documents, which establish uniform rules of reflection of financial and economic operations of the Russian Bank system. These normative documents are developed by the Bank of Russia. Accounting (financial) statements of credit institutions subject to mandatory external audit. The legislation also established that banking institutions are obliged to organize and to carry out internal control of accounting and financial reporting. On the basis of a Federal law, the Bank of Russia sets the requirements to the systems of risk and capital management, internal control in credit organizations, as well as the qualification requirements for the head of risk management Department, the head of internal audit head of internal control in credit institutions. In accordance with Russian legislation the external audit is an independent check of the accounting (financial) statements of the audited entity for the purpose of expressing opinion on reliability of these statements. His opinion, the auditor expresses in the form of the audit report, which is a formal document intended for the users of the accounting (financial) statements of the audited violence. the Conclusion contains expressed in the prescribed form an opinion on reliability of the accounting (financial) statements of the audited. Audit

activities are defined as the audit and the provision of non-audit services performed by the audit organizations and individual auditors. The procedure and rules of audits and procedures, as well as the list of non-audit services is established by the Federal auditing standards. Federal auditing standards define the requirements to the order of auditing activity, developed in accordance with international standards on auditing (ISA), are obligatory for auditing organizations and auditors, as well as self-regulating organization of auditors and their staff. Russian auditing standards represent an adapted version of the international standards of auditing (ISA - ISA). These standards differ from ACI on the structure and logic of presentation, as they are based on the provisions of Russian civil law and legal practice. However, they are quite similar in essence, as the differences are connected first of all with the specifics of the Russian legal practice. Internal control is one of the key indicators of quality of corporate management in the banking system. Efficiency of its services is a key component of the Bank management and the basis for security and stability of banking operations. For solution of the tasks faced by the internal audit and control in credit organizations create organizational structure, carrying out the relevant procedures. Currently, the Russian banking legislation sets out the requirements for the establishment of internal control and audit. In accordance with the normative and legislative documents of the Russian Federation internal control in banks is divided into two main types:

- internal control activities in credit organizations and banking groups ;

- Internal control for the purposes to counteract the legalization (laundering) of revenues gained by criminal means and the financing of terrorism. Coordination of the process of harmonization of Russian and international principles of internal audit carries out the Russian Institute of internal auditors, which has a partnership with the international Institute of internal auditors (IIA). This professional organization uniting internal auditors, experts in the field of internal control, members of the control and audit subdivisions of Russian companies and organizations of various forms of ownership, including the state. The basis of normative-legal regulation of audit activity of banking institutions in Russia are the laws, regulations and methodological base, which mainly presents the documents to the Federal legislation, regulatory requirements of the Bank of Russia and recommendatory documents of international and Russian professional associations. Normative-legal provision of audit and control in credit organizations developed and improved. You should pay attention to the fact that the legal framework establishing the activities of banking institutions in Russia, does not take into account the principles of the Islamic way of economic relations. However, a considerable part of citizens Russia professes Islam, and in several territorial entities of Russia there is the regions, inhabited predominantly Muslim population.

In addition, Russia is included into the international economic community, where the participants there are countries in which Islamic form of business is possible or dominating. In this regard, sooner or later, before the Russian financial authorities will face the problem of regulatory support for Islamic banking products, as well as the challenges for audit, control and analysis of activities of Islamic financial institutions. Therefore, the harmonization of the principles of the analysis and audit international, Islamic and the Russian banking system is an important task.

#### V. ACCOUNTING AS A SOURCE OF INFORMATION FOR MODELLING AND AUDIT

Accounting can be defined as an information technology and economic relations, based on the method of double entry, reflecting operations on debit and credit accounts that comprise the assets and liabilities of the organization. Under economic relations refers to the relations concerning property rights and liabilities related to assets of the organization. Accounting data are generalized on the basis of national and international principles and rules in the form of financial reporting in order to provide useful information for decision or economic decisions. One of the most common systems of reporting, with the aim of ensuring the comparability of information about the activities of economic entities in different countries, the International financial reporting standards (IFRS) (International Financial Reporting Standards - IFRS) [21]. IFRS is a set of documents (standards and interpretations), which regulates the rules of preparation of financial statements requires external users for making economic decisions in respect of activities of different organizations. Note, however, that, for example, the purpose of AAOIF is also an international standardization and harmonization of accounting and financial reports, but this standardization applies only to Islamic financial institutions. In addition, the national financial standards of countries with developed financial and industrial industry, where operate international industrial and financial centres, they can set their own standards of accountability, which, in fact, are international. Therefore, the task of forming the comparative financial information is very relevant to many countries and international economic organizations and developed IFRS completely not solve. Hence it useful as a complement to existing international standards to consider the system of mathematical modelling of accounting and reporting, allowing to separate ethical and cultural view from the quantitative presentation of financial information. The solution of this problem it is suggested the following concept of accounting and reporting. As you know, from an information technology point of view of accounting solves two main tasks: formation of a primary account information means adopted in the language system of accounting

transactions; b) the conversion of primary information in the summary reports. You should pay attention to the fact that the system of traditional means and methods of accounting is practically absent its essential part is the mathematical basis of accounting. The language of mathematics, as proved by the whole history of science, has the necessary uniformity in understanding and greater commonality in logical reasoning and conclusions than just a professional language close to natural. Therefore the mathematical model of accounting, independent of specific forms of accounting, but it can take the form of any of them, and has a prospect to be understood and accepted by experts in any country of the world. Thanks to a uniform and compact mathematical way of accounting will understand the similarities and differences between national accounting systems, which are a major problem in the transition to international standards. The founder of the situation-matrix modelling accounting is the Russian scientist, doctor of Economics, Professor O. I. Kalvach. He was able to formulate and solve the problem of representing a diverse accounting procedures for forming financial statements in the form of invariant image - mathematical equations and their solutions in a compact form [2,3]. Situational-matrix model statutory accounting (SMU) - axiomatic theory is based on a matrix expression of accounting operations and reporting, representing an invariant way the existing variety of accounting procedures that transform raw data in the balance sheets. Invariant in the sense that the matrix formulas and equations that make up the matrix model of accounting, have a consistent feel and does not depend on the initial data and what accounting procedures can be used to reflect on the balance sheet. The main ideas of SMU boils down to this.

1. Primary accounts transactions and formed on their basis the log tied to their equivalent images in the form of a matrix.
2. Operations on the transformation of the primary data in the balance sheets are associated with their equivalents in the system of operations of matrix algebra.
3. Connection of inbound and outbound balance is set using the basic equation of accounting in a matrix form.
4. Transformation of the basic equation with matrix algebra possible to find a formula to solve the problems of forming financial statements in the system of matrix algebra.
5. These matrix formulas and are the equivalent of relations of the indicators presented in the appropriate tables of the balance sheet report, in any system of accounting, based on the method of double entry.

At the basis of SMU based on such fundamental concepts as correspondence of accounts and accounting transaction. But they are not defined in everyday terms,

and use mathematical concepts and basic operations of matrix algebra.

Listed below are the definitions (axioms) and formulas of SMU.

**Definition 1**

Matrix-correspondence is a square matrix  $E(X,Y)$  of size  $m * m$ , where at the intersection of account debit  $X$  and credit the account of  $Y$ , is the one and all other elements equal to zero. The matrix-correspondence referred to as  $E(X,Y)$ , and it is non-null, is always equal to one, as  $\sum E(X,Y) = 1$

**Definition 2**

Matrix-posting - is the product of the sum of operations on the matrix correspondence:

$$M(X,Y) = \sum S_{X,Y} \cdot E(X,Y).$$

Multiplying the scalar (number)  $\lambda$  on the matrix of all items increased in  $\lambda$  time. When multiplying the amount of operation  $S_{x,y}$ -matrix - correspondence  $E(X,Y)$  the transaction amount is adjudged to be in that position, which was the one and all other elements of the matrix - Postings  $M(X,Y)$  will be zero. All other formulas of SMU are executed by matrix transformations.

The above definition can be regarded as axioms that form the foundations of subsequent builds in the field of accounting matrix. Based on them exclusively through mathematical transformations with elements of the matrix algebra are obtained formulas that generate financial statements in the objective (independent of interpretations). This objectivity is achieved through formal launch of the performance of the organization, which clearly follows from the primary accounting data. Below are the basic formulas of SBU in a matrix form. The formula log - matrix of the original transaction: (1)

where  $i$  is the number of entries in the activity log;  $S_i$  amount of the transactions, corresponding to the  $i$ -th transaction;

$E(X_i, Y_i)$  - matrix correspondence, corresponding to the  $i$ -th transaction.

Formula chess balance - matrix debit turnovers  $D$ , obtained from  $J$  bringing such transactions:

$$D = \sum_{Y=c_1}^{c_m} \sum_{X=c_1}^{c_m} S_{X,Y} \cdot [E(X, Y)] \quad (2),$$

here  $X, Y = c_1, c_2, \dots, c_m$  - names or codes of accounts;

$$S_{X,Y} = \sum_{i=1}^{n_{X,Y}} S_{i,X,Y} \quad \text{- the total sum of the consolidated}$$

Postings related to this account correspondence  $X, Y$ . If this always:

$$\sum_{X=c_1}^{c_m} \sum_{Y=c_1}^{c_m} n_{XY} = n$$

where  $n$  is the total number of records in the operations log, i.e. the total of the numbers of groups  $n_{XY}$  same type  $X, Y$  - correspondences of accounts that is equal to the total number of records  $n$  in the operations log.

Formula matrix credit turnovers K is obtained from D by its transposition:

$$K = D' = \left[ \sum_{Y=c_1}^{c_m} \sum_{X=c_1}^{c_m} S_{X,Y} \right] \cdot E(Y, X) \quad [3]$$

Transposition operation can be performed directly by reordering the columns and rows of the matrix debit turnovers.

General view of the matrix equation enables incoming matrix balance, which is outbound for the prior period. Below is a General view of the **matrix equation accounting**:

$$\Delta B_{t-1} + D - K = \Delta B_t \quad (4),$$

Here  $\Delta B_{t-1}$  - matrix algebraic balance at beginning of the period;

D - matrix debit turnovers for the period (t-1, t);  
K=D the matrix credit flows received by the transpose of the matrix debit turnovers, for the same period;  
 $\Delta B_t$  - matrix algebraic balance at end of period, obtained from the equation.

Convert the underlying equations allow to consistently obtain the equations of the corresponding balance sheets. These conversions are performed by multiplying both parts of the equation by vector () operator, generate a total of incoming matrices:

$$\Delta B_{t-1} + D \cdot e - K \cdot e = \Delta B_t \quad (5),$$

Here e is the vector (operator) formation of the results is the unit vector of the appropriate size. Multiplication by these vector equivalent operations of arithmetic calculation of the final column of the matrix. Developers of SMU yet 2002, in the General form was taken matrix modelling and information technologies of transition banking organizations from national standards to IFRS [4]. It seems that this task is similar to the task of translating reporting organizations functioning in one jurisdiction, the reporting framework adopted for similar organizations in other jurisdictions. We believe that the solution to this problem would also be interesting and, when considering the compatibility of classic and Islamic standards of financial activity. Matrix model accounting allows to put the problem of accounting, reporting and audit of banking organizations, using a system of balance equations and their transformations, and then present the solution of these problems in the form that is understandable to the interested users of information on various legal, economic and social systems .

## VI. PROPOSALS ON THE DEVELOPMENT OF ANALYTICAL AUDIT PROCEDURES

Audit procedures aimed at the formation of substantial evidence of compliance the financial statements of a banking organization's actual status of assets and liabilities and justification that the activities of the Bank meet the goals and tasks. The indicators of financial condition and banking activity, expressed in the form of

reports, plans and financial policies on the specified activities. These indicators are defined of qualitative and quantitative characteristics, and these characteristics are usually followed by numeric values. Thus, the financial indicators are of two main components - a conceptual and quantitative. The audit opinion shall confirm that the financial and functional characteristics of the Bank significantly represented in the reports, as well as what is required to achieve the goals and objectives of the banking procedures are carried out according to certain rules. Professional judgement of the auditor is subjective in nature and is very dependent on the experience and professional competence. In any case the opinion expressed by the auditor, only likely, but the recommendations that it can be formulated in the scan results require confirmation. It is therefore proposed to consider the possibility of modelling the numerical parameters of activity of banks and audit judgments. This modelling can be achieved if to formalize banking procedures in the form of target indices given numerical values, and define the structure of formation of these indicators in the framework of certain banking operations. Targets are usually known to the auditor and the financial dimension; they depend on conditionally constant values that define the structure of the relationship between units of the banking organization as well as its clients and contractors. As examples of targets might include, for example, expenses on attraction of deposits, earnings on placement of credits, the planned profit of the Bank, numeric expression influence the cost of banking services to business clients, etc. These targets will depend on such conditionally-constant values as interest on deposits and loans, the cost of money transfers, salary of staff, cost of maintenance of operational infrastructure, taxes, etc. i.e. all regulatory costs that determine the cost of operation of the Bank or its cost. Let's note, that the cost price of banking transactions are normally included in the the cost of banking product and is repaid at the expense of those customers who use the Bank's services Based on this approach it is possible to model the influence of various banking operations and financial relations, and formalized to Express the auditor's opinion and suggestions. In General, these analytical solution developers call "const accounting, on the basis of SMU [11] it is formulated in the following form. The main model browser element situational-accounting matrix is the matrix debit turnovers D. Dividing all its elements in scalar Gbase, get listed or

constant matrix  $\hat{D} = \frac{1}{G_0} \cdot D$  the elements of which will

be conditionally constant values  $\lambda_{x,y} = \frac{S_{x,y}}{G_{base}}$  In the

mean-basic equation stuck into account that in the algebraic view on the form is the same as (5):

$$\Delta \hat{B}_{t-1} + [\hat{D} \cdot e] - [\hat{K} \cdot e] = \Delta \hat{B}_t \quad (6).$$

Or, equivalently, remains in book-entry form:

$$[(\Delta \widehat{\mathbf{D}} - \Delta \widehat{\mathbf{K}})_{t-1}] + [(\widehat{\mathbf{D}} \cdot \mathbf{e}) - (\widehat{\mathbf{K}} \cdot \mathbf{e})] = (\Delta \widehat{\mathbf{D}} - \Delta \widehat{\mathbf{K}})_t$$

(7), где  $\widehat{\mathbf{K}} = \widehat{\mathbf{D}}'$

After transformation of the resulting equation constant financial statements (presented in table. 1 and 2).

**Table 1 - Equation constant balance sheets with residues in algebraic form**

Name of constant equations	Formula constant equations
Bilateral algebraic equation of General Ledger	$\Delta \widehat{\mathbf{b}}_{t-1} + \widehat{\mathbf{D}} \cdot \mathbf{e} - \widehat{\mathbf{K}} \cdot \mathbf{e} = \Delta \widehat{\mathbf{b}}_t$
Right algebraic equation of General Ledger	$\Delta \widehat{\mathbf{b}}_{t-1} + \widehat{\mathbf{d}} - \widehat{\mathbf{K}} \cdot \mathbf{e} = \Delta \widehat{\mathbf{b}}_t$
Left algebraic equation of General Ledger	$\Delta \widehat{\mathbf{b}}_{t-1} + \widehat{\mathbf{D}} \cdot \mathbf{e} - \widehat{\mathbf{k}} = \Delta \widehat{\mathbf{b}}_t$
Algebraic equation balance list	$\Delta \widehat{\mathbf{b}}_{t-1} + \widehat{\mathbf{d}} - \widehat{\mathbf{k}} = \Delta \widehat{\mathbf{b}}_t$

**Table 2-Equation constant balance sheets with the remnants in book-entry form**

Name of constant equations	Formula constant equations
Bilateral equation Ledger	$(\Delta \widehat{\mathbf{d}} - \Delta \widehat{\mathbf{k}})_{t-1} + \widehat{\mathbf{D}} \cdot \mathbf{e} - \widehat{\mathbf{K}} \cdot \mathbf{e} = (\Delta \widehat{\mathbf{d}} - \Delta \widehat{\mathbf{k}})_t$
Right-sided equation Ledger	$(\Delta \widehat{\mathbf{d}} - \Delta \widehat{\mathbf{k}})_{t-1} + \widehat{\mathbf{d}} - \widehat{\mathbf{K}} \cdot \mathbf{e} = \Delta(\Delta \widehat{\mathbf{d}} - \Delta \widehat{\mathbf{k}})_t$
The left-sided equation Ledger	$(\Delta \widehat{\mathbf{d}} - \Delta \widehat{\mathbf{k}})_{t-1} + \widehat{\mathbf{D}} \cdot \mathbf{e} - \widehat{\mathbf{k}} = \Delta(\Delta \widehat{\mathbf{d}} - \Delta \widehat{\mathbf{k}})_t$
The equation of the balance list	$(\Delta \widehat{\mathbf{d}} - \Delta \widehat{\mathbf{k}})_{t-1} + \widehat{\mathbf{d}} - \widehat{\mathbf{k}} = (\Delta \widehat{\mathbf{d}} - \Delta \widehat{\mathbf{k}})_t$

Baseline target Gbase can be represented as the sum of the respective local targets areas (segments) of records so that:

$$G_A + G_B + \dots + G_W = G_{base} \quad (8).$$

Here, the subscript indicates local indicators to the appropriate segment accounting A, B, ..., W. If the global target are unit, local targets will be the share Gbase so that:

$$d_A + d_B + \dots + d_W = 1 \quad (9),$$

где  $d_A = G_A / G_{base}$ ,  $d_B = G_B / G_{base}$ , ...,  $d_W = G_W / G_{base}$ .

Local targets is with certain assumptions considered conditionally-constant values that constitute the skeleton of the considered situation-matrix variants const accounting. According to the developers' const

accounting on the basis of SMU, the above methods can be applied for solving the following tasks.

1. Forecasting activities of organizations on the basis of situational-accounting matrix in the form of classical balance sheets.
2. Monitoring and analysis of deviations of actual results by comparing the respective balance sheets.
3. Adjustment of parameters of the accepted model const accounting for its refinement and improvement.

The idea const accounting on the basis of SMU in practice, analysis and audit will allow forecasting the financial condition of the Bank, expressed in its financial statements, depending on the applicable laws, regulations, judgments and estimates. The use of this method allows supplementing the tools of the audit judgments and conclusions towards the formalization of the conclusions of final audit process, the internal and external audit.

## VII. CONCLUSION

In the study of standards, procedures and rules that are used in the analysis of the banks' activity, you can make the following conclusions:

1. In the framework of harmonization of accounting, financial reporting, audit and control necessary to coordinate the various ideological concepts used in the practice of the analysis of the activity of banking institutions.
2. Financial transactions carried out in the framework of classical and Islamic banking institutions, which have significant differences, determined by tradition and culture, worldview and legal principles, and also look at the role and place of banking operations within the system of economic relations of production and financial organizations.
3. Coordination of views of representatives of the various economic concepts will be more effective if the analysis of the legality of certain financial operations will be based on the equivalence of effect of these operations on the organization, components of the economic system. Evidence of conformity of the rules of conducting banking operations to the established principles more convincing if you are expressed on the basis of formalized methods of mathematical modelling. On the basis of these conclusions and formulates a proposal to use in the framework of the standardization of procedures and audit methodology of case matrix modelling financial relationship banking organizations.

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