



ISSN 2579 - 2555

**ՖԻՆԱՆՍՆԵՐ ԵՎ  
ՀԱՇՎԱՊԱՀԱԿԱՆ ՀԱՇՎԱՌՈՒՄ**

**2**

**ԵՐԵՎԱՆ - 2021**  
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ՀԱՇՎԱՊԱՀՈՒԹՅԱՆ ՈՒՍՈՒՑՄԱՆ ՄԻՋԱԶԳԱՅԻՆ ԿԵՆՏՐՈՆ  
INTERNATIONAL ACCOUNTANCY TRAINING CENTRE  
МЕЖДУНАРОДНЫЙ ЦЕНТР ПО ОБУЧЕНИЮ БУХГАЛТЕРИИ

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ՀԱՇՎԱՌՈՒՄ**

**ԳԻՏԱԿԱՆ ՀԱՆԴԵՍ**

**2 (8)**

**FINANCE AND ACCOUNTING**

**SCIENTIFIC JOURNAL**

**ФИНАНСЫ И БУХГАЛТЕРСКИЙ УЧЕТ**

**НАУЧНЫЙ ЖУРНАЛ**

**ԵՐԵՎԱՆ 2021**

**«ՀՈՒՄԿ» ՀԻՄՆԱԴՐԱՄ ՀՐԱՏԱՐԱԿԶՈՒԹՅՈՒՆ**

«Ֆինանսներ և հաշվապահական հաշվառում» գիտական հանդեսը լույս է տեսնում տարեկան երկու անգամ: Հրատարակվում է 2018 թվականից:

The scientific journal “Finance and Accounting” is published twice a year. It has been published since 2018.

Научный журнал “Финансы и бухгалтерский учет” выходит два раза в год. Издается с 2018 года.

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## **CONTEMPORARY ISSUES RELATED TO FINANCIAL COMPONENTS OF SUSTAINABLE DEVELOPMENT IN ARMENIA**

**Abstract:** Ensuring the security of the financial system of the Republic of Armenia requires taking into account the peculiarities of the different segments of the financial market currently formed in the country, their different levels of development. At the same time, taking into account, on the one hand, the legislative-legal bases of the financial system regulation, as well as the internationally learned experience gained in this field, it is necessary to work out the priorities of ensuring the security and development of the financial system in the country.

**Keywords:** financial markets, stress-tests, local budgets, territorial development

**JEL classification:** E20, E27

**Research aim:** to emphasize the significance and the role of financial components to ensure and maintain a permanent process of sustainable development in the Republic of Armenia.

**Research hypothesis:** other terms of competition being equal, acquired level of competitiveness may be lost while not paying keen attention to the risks associated with the financial components and preconditions of sustainable development.

**Research novelty:** taking into account the major trends and developments following the global financial crisis an increasing impact of financial markets on economic progress and competitiveness on local, regional and global levels is justified based on the experience of developing and developed nations in a global marketplace.

## **Introduction**

The main driver of economic progress is the ability of the nation to compete in local, regional and global markets. Therefore, the continuous improvement of the level of competitiveness of the country's economy is conditioned by the efficiency of the financial system developed during the given period. It is obvious that without a developed and stable financial system it is impossible to ensure the dynamic development of other sectors of the economy.

## **Research results**

In order to assess the financial system's stability and security, stress tests are widely used in the international arena, which allow to assess the losses of the financial system or its individual participants in the event of possible shock scenarios and to move to the next stage of financial risk management [1]. Policies to ensure financial security, depending on the situation in the system or possible developments, may assume a non-standard and non-routine set of steps. In particular, if the indicators of the financial system are at an acceptable level, then the relevant policy in this case is of a preventive nature. Such a policy implies continuous monitoring of a number of macroprudential indicators, assessment of external risks affecting the efficiency of the financial system. Preventive policy is essentially aimed at ensuring financial stability through the use of current control and regulatory tools in the system [2].

- Fluctuations in the financial system, being within the allowable range, can at the same time be likely to deviate from it, which can lead to the disruption of the activities of any part of the financial system or the non-financial relations already established in it. To avoid this, new financial market regulation tools, new risk assessment methods, new asset loss and capital adequacy requirements, and, in general, approaches to financial system



stability guaranteed by reputable international institutions should be applied. In other words, such a policy implies not only the expansion and modernization of the existing toolkit, but also the formation of the necessary regulatory framework [3].

- From the point of view of financial security, there are possible cases when the fluctuations of the financial system are beyond the allowable level, and the system is not able to perform its functions of financial intermediary and payment and settlement. In such cases, the policy should be of a restorative nature, including a set of steps to overcome the crisis. As an important component of anti-crisis measures can be the expansion of the ability of commercial banks to obtain borrowed funds, the provision of emergency liquidity within the function of the last resort lender, etc. These other solutions stem from the lessons of global crises that can be localized in modern times, in line with the specific conditions of the country and current challenges [4].
- Currently, the state, economic entities, organizations and citizens are important actors in the financial system. As for the relations arising in the process of formation and use of monetary funds, they can be conditionally classified according to:
  - State and enterprise: they include the system of payments to the state budget, various funds of state organizations, and owing to them, the centralized state income is formed.
  - Business entities: they are formed on the basis of contracts containing mutual payment obligations;
  - organizations, banks,
  - economic entities and their structural subdivisions,
  - State and NGOs;
  - State and population - in connection with different types of transfer payments to the population.

Relationships between these groups vary from country to country. The effectiveness of the latter largely depends on both the complexity of the settlement of these relations and the level of development of the financial system. Banks operating in Armenia are the largest financial institutions of the country's financial system, which currently hold more than 85% of the financial system assets [5].

The key players in the banking system of the country are the Central Bank, commercial banks, their branches, operational offices, as well as branches and representative offices of foreign banks. The main activities of banks, as a rule, include opening bank accounts - maintaining, providing loans, accepting deposits, as well as providing payment instruments - servicing. Of course, commercial banks can also make investments, carry out checks and foreign exchange operations, and provide other services. The activity of banks in the territory of the Republic of Armenia is regulated by the laws of the Republic of Armenia "On Banking", "On the Central Bank of the Republic of Armenia", "On Bankruptcy of Banks", "On Banking Secrecy", and in the cases envisaged by them, by acts.

Payment systems play an important role in the implementation of monetary policy and have a significant impact on financial security. That is why the Central Bank should pay special attention to the payment-securities settlement systems of systemic importance, as well as to the telecommunication networks that ensure their operation.

The most important factor in the formation and development of the monetary system is the choice of monetary policy and the choice of the regime. It is of great importance for the development of foreign economic relations; it creates the necessary and sufficient conditions for comparing and converting the real values of the currencies of different countries.

The International Monetary Fund (IMF) distinguishes between fixed exchange rate and transitional floating exchange rate regimes. The

Central Bank of Armenia pursues a policy of free floating exchange rates. The intervention of the Central Bank in the foreign exchange market is carried out for the purposes of monetary policy. Based on the exchange rates in the market, the Central Bank publishes the average exchange rates of the Armenian dram against the foreign currency in the foreign exchange markets.

It can be noted that in international practice, depending on the specifics of economic relations, different models of financial market regulation stand out.

In the USA, Spain, Cyprus, Portugal, Finland, Romania, Lithuania, Luxembourg, and partly in Italy, each segment of the financial market is controlled by a separate body. With this option, the probability of effective regulation of certain segments of the financial market increases. The disadvantage of this model is that it is not always possible to reach an agreement between all the bodies in the process.

According to another model of financial market regulation, the resulting transactions are divided between the two branches of government. This option is used in Canada and the Netherlands.

In Germany, Denmark, Austria, Switzerland, Japan, as well as in Armenia, the financial market regulation functions are concentrated in one body. In the Republic of Armenia, such a body is the Central Bank, which, as the structure in charge of financial security, pursues the goal of establishing a joint, independent, effective control system, as well as the protection of consumers' rights and legal interests in the process of providing financial services.

Financial system-specific regulation and control requires assessing both the risks inherent in different segments of the financial market and their impact on other segments of the financial market. Even when the effects of certain segments of the financial market on each other are not obvious, the risks inherent in one segment can significantly affect the performance of other segments. That is why the role of joint regulation

and control is sharply increasing not only in ensuring financial security, free competition for financial market participants, but also in protecting the interests of financial market customers.

The model of a unified settlement system was first introduced in Western European countries. The transition to this model was mainly due to the need for effective control over financial institutions, overcoming the effects of financial crises, as well as the rational use of resources.

Ensuring financial security is one of the most important tasks of any country, because it is impossible to achieve manageable inflation, low unemployment, high economic growth without a developed, stable financial system. The World Bank, the International Monetary Fund, and the central banks of many countries publish annual financial stability reports. At the same time, it is possible to take into account 2020 impact of the epidemic on financial security and the possible implications [7]. Following the publication of the IMF Guidelines in this area, Armenia also began to submit such reports. The reports present the Central Bank's assessment of the financial stability in the country for a certain period of time, the existing and potential risks, the measures taken to prevent them, etc. The publication of the report allows raising the level of awareness of financial institutions, enterprises, businesses and the population, ensures the transparency of the activities of both the central bank and other parts of the financial system. The information provided on potential risk sources and financial security vulnerability reports is the basis for making the right decisions in the event of ambiguous developments.

A study of different regulatory models shows that in countries with different political structures and financial markets, only one of them can work with some efficiency. In the conditions of peculiarities typical for the Republic of Armenia, it is more preferable to use the model of unified regulation of the financial market, which allows to:

1. Assess the real impact of possible shocks on the financial market, "effectively distribute risk across different sectors";
2. Develop a more effective risk management policy; financial services control approaches;
3. Expand the capabilities of the mega-regulator in agreement with the activities of regulatory bodies, avoid unnecessary oversight functions;
4. Increase opportunities for common approaches, information processing and use;
5. Increase the level of responsibility of the regulator in decision making;
6. Ensure the rational use of human resources, state resources and savings.

It should be noted that a disproportionate increase in the powers of the Joint Supervisory Body may lead to a monopoly on oversight activities, diverting the regulatory body from its core functions.

In general, the results of the analysis of the financial system regulation models show that in order to increase the efficiency of the mega-regulator, it is necessary that the tasks and goals set by the joint regulatory body be clearly defined and their priorities be determined.

As for the means aimed at strengthening the financial system, it can be distinguished as such.

- increasing the efficiency level of the tax system, reducing the number of taxes and increasing the level of their collection;
- development of non-inflationary financing methods for budget deficit;
- effective redistribution of financial resources based on national preferences;
- implementation of national defense strategies and related to them expenditures;
- introduction of a mechanism for controlling the use of budget

funds;

- targeted financing of public expenditures with a provision of budget assistance to enterprises and organizations only in accordance with the approved programs, in the conditions of simultaneous regulation of state financing of program-targeted expenditures.

To all mentioned points the co-financing of certain private business projects by the Government of the Republic of Armenia in the last year can also be added, which allows to gradually return the share of the state, to improve financial security at the micro level. It is desirable to consider and apply success stories that are widely used in international practice: success stories [6].

In the field of monetary relations, in order to ensure the reliable operation of the Armenian banking system, the main means require:

- Ensuring stability of the national currency – the AMD,
- Reliable organization of payment and treasury services systems, including technical protection of banking telecommunications funds from unauthorized access, and the neutralization of criminal elements of investment in bank documents;
- Use of simultaneous and effective means to protect the interests of bank depositors

In order to reduce the disparities in the development rates of a number of communities in the field of balanced development policy, a rational strategy of combining the state, communities, economic and other interests must be developed in order to ensure the unified development of the country. It should be based on limiting the role of state bodies in the economic processes of the territories at the local level, on concentrating their efforts on the creation and maintenance of market mechanisms, and on the implementation of a common economic policy. In the process of enlarging the communities, it is necessary to conduct a systematic-scientific substantiation of the division of territories

based on the conditions of their level of socio-economic development, to ensure the development of criteria for communities with low levels of development, legislative strengthening, provision of state aid. A series of support to communities with particularly difficult economic conditions, social upheavals in the direction of low living standards of the population, prevention of activation of own sources in the given regions. Therefore, the priorities of the state strategy in this sphere should be:

- reorganization of community farms with priority given to the development of local industries;
- restoration and activation of agro-industrial communities specializing in agro-products processing, as well utilizing of community's own resources;
- overcoming the shortages in resources in communities with extreme conditions, creating sufficient conditions for natural growth;
- development of new types of various production complexes of regional importance, which are oriented towards the production and sale of products in accordance with market requirements, mainly by implementing decentralized investment projects;
- development of inter-community infrastructure systems (transport, communication, information technologies).

The main forms of state participation in the regulation of territorial development can be:

- redistribution of state orders for delivery of products for national needs;
- participation in separate structural investment investment projects using competitive and contractual systems for their implementation;
- implementation of state support for community development programs;

- the interaction of communities and state budget systems for material support.

### **Conclusion**

The significance and the role of financial components grows since the last global financial crisis. Therefore, the government needs to take precise measures to ensure and maintain a permanent process of sustainable development in the Republic of Armenia. Business circles face new realities, particularly, taking essential risks to maintain certain levels of competitiveness without careful study, assessment and analysis of threats related to the financial markets and other risks of sustainable development. In addition, the major trends and developments following the global financial crisis have an increasing impact on economic growth and competitiveness on local, regional and global levels.

Thus, ensuring the security of the financial system of the Republic of Armenia requires new approaches considering the peculiarities of the different segments of the financial market currently formed in the country, their different levels of development. At the same time, taking into account, on the one hand, the legislative-legal bases of the financial system regulation, as well as the internationally learned experience gained in this field, it is necessary to work out the priorities of ensuring the security and development of the financial system in the country.

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**Թաթուլ Մանասերյան**  
տ.գ.դ., պրոֆեսոր

## **ՀԱՅԱՍՏԱՆՈՒՄ ԿԱՅՈՒՆ ԶԱՐԳԱՑՄԱՆ ՖԻՆԱՆՍԱԿԱՆ ԲԱՂԱԴԻԻՉՆԵՐԻ ԽՆԴԻՐՆԵՐԸ**

**Բանալի բառեր** - ֆինանսական շուկաներ, սթրես-թեստեր, տեղական բյուջեներ, տարածքային զարգացում

ՀՀ ֆինանսական համակարգի անվտանգության ապահովումը պահանջում է հաշվի առնել երկրում ներկայումս ձևավորված ֆինանսական շուկայի տարբեր հատվածների առանձնահատկությունները, դրանց զարգացման տարբեր մակարդակները: Մինևույն ժամանակ, հաշվի առնելով մի կողմից ֆինանսական համակարգի կարգավորման օրենսդրական-իրավական հիմքերը, ինչպես նաև այս ոլորտում ձեռք բերված ուսանելի միջազգային փորձը, անհրաժեշտ է մշակել երկրում ֆինանսական համակարգի զարգացման և անվտանգության ապահովման առաջնահերթությունները:

**Татул Манасерян**  
д.э.н., профессор

## **СОВРЕМЕННЫЕ ПРОБЛЕМЫ, СВЯЗАННЫЕ С ФИНАНСОВОЙ СОСТАВЛЯЮЩЕЙ УСТОЙЧИВОГО РАЗВИТИЯ В АРМЕНИИ**

**Ключевые слова** - финансовые рынки, стресс-тесты, местные бюджеты, территориальное развитие

Обеспечение безопасности финансовой системы Республики Армения требует учета особенностей различных сегментов финансового рынка, их разного уровня развития, формирующихся в настоящее время в стране. В то же время, принимая во внимание, с одной стороны, законодательно-правовые основы регулирования финансовой системы, а также международный опыт, накопленный в этой области, необходимо разработать приоритеты обеспечения безопасности и развития финансовой системы в стране.

*Submitted: 18.08.2021*

*Accepted for publication: 15.11.2021*

## **REPRESENTATION OF FIXED ASSETS FAIR VALUE ACCORDING TO ACCOUNTING STANDARDS**

**Abstract:** When presenting assets at fair value, International Accounting Standards should not necessarily reflect the concept of prudence. In particular, the usefulness of property, plant and equipment for long-term use should not be used as a basis for determining the fair value of an asset, as the discounted cash flow expected from further use of the asset, more often than not is incompatible with cash received from the sale of an asset in a normal transaction.

**Keywords:** international accounting standards, fair value of assets, reevaluation, double entry, prudence concept

**JEL classification:** M40, M41

**Research aim:** to present the problems of valuation fixed assets in accordance with international accounting standards.

**Research hypothesis:** prudence concept is not always reasonable for estimation of assets and reflecting on inefficient decision making among accounting information users

**Research novelty:** it is not always the case, that the principle of conservatism is applied, when estimating fair value of fixed assets for long-term use.

### **Introduction**

International Financial Reporting Standards, which came into force in the 1990s, were originally intended to provide users with realistic

information, that would enable them to make sound decisions. Particular emphasis was placed on the principle of prudence, which is still considered one of the cornerstones of building standards. When applying it, overvalued assets or undervalued liabilities are not allowed [1].

### **Literature Review**

Accounting is about being careful not to overestimate assets or income, also liabilities and expenses underestimated, while not intentionally underestimating assets and income, and intentional overstatement of liabilities [2].

Consequently, when maintaining accountability, entities present in their financial statements information, that is not in their best interests, as it presumably reduces the fair value of the assets. On the other hand, the users are not artificially presented with the share of the fair value of the asset that is “hidden” in the reporting requirement.

In addition, there is a time gap between the benefits and losses recorded in the financial statements. It is from this principle, that the resulting loss should be directly recorded in the financial results of the organizations, even if the related transaction has not yet taken place, and in the case of a profit, there should be no urgency; we should wait until the transaction takes place. A good example of this is the formulation of the results of revaluation of fixed assets, according to which the impairment loss should be immediately attributed to the financial results of the reporting period, and the increase in revaluation should be attributed to the entity's equity [3].

In our view, these temporal differences in financial results from the concept of prudence may have some influence on the decisions of users of information. After all, fixed assets are non-current assets, at least for a long time, they will not be alienated or traded. So, why should impairment losses be attributed directly to the financial performance of the reporting entity's rather than equity, as is the case with revaluation

gains? In this case, the report provides the user with information on a double standard, which may cause confusion in the management decisions made by him.

Moreover, in the case of inventories, when, based on the prudence concept, the standard requires the presentation of fair value less the actual cost of residues and net realizable value, [4] this time without taking into account the short useful life of inventories. And even if circumstances are created that contribute to the devaluation of stocks, the previous deflation results of stocks are clarified, and reversals of formulations are made. It follows, that year-on-year inventory balances can be re-evaluated multiple times, causing significant confusion in the decision-making process of users of the published financial reporting information.

### **Research Methodology**

In accordance with International Financial Reporting Standards, the fair value is the amount, that would have been received from the sale of an asset in a common transaction or would have been paid for the transfer of a liability in a ordinary transaction at the measurement date [5]. Therefore, the principle of accountability is somewhat at odds with this requirement of the standard, as the fair value of the asset is often presented without taking into account the time of the usual transaction or the "at arm's length" approach in the market.

Thus, the organization in January 2019, it bought a conveyer line with a 10-year operation period, the alienation costs of which will make 3 million drams at the end of the operation. In December 2021, it turned out, that the real value of the conveyer line in the market has risen by 5%. At the same time, another circumstance emerged. A solid competitor has appeared in the market, which produces the same product, as a result of the organization's conveyer line capacity has decreased from 4 million drams per year to 2.6 million drams outcome. The bank deposit rate is projected at 10% for the next seven years.

If we are going to follow the international accounting standards, in 2021 we have to formulate two contradictory correspondents on assets. On the one hand, in accordance with IAS 16, the revaluation of the asset will increase, and the result will be the increase in the capital of the organization during the reporting period [6]. On the other hand, IAS 36 will impair the asset as there is an indication that the carrying amount of the asset exceeds its recoverable amount. In this case, for the same asset, the impairment result for the same reporting period will be recorded in the entity's financial results as required by IAS 36 [7].

Value in use of the asset = present value of future cash flows that is expected to be received from the operation of the asset =  $4.88$  (annuity ratio 10% and 7 for the remaining years of operation)  $\times 2.6 = 12.7$  million AMD

Fair value of assets =  $(20 - 20 / 10 \times 3 \text{ years}) \times 1.05 = 14.7$

Fair value of assets - alienation costs =  $14.7 - 3.0 = 11.7$  million AMD

Recoverable amount = (fair value - alienation costs) and maximum useful value = 12.7 million drams

According to IAS 36, amount of asset impairment (December 2021) =  $14.7 - 12.7 = 2$  million AMD

According to IAS 16, asset price increase (December 2021) =  $(20 - 20 / 10 \times 3 \text{ years}) \times 0.05 = 0.7$  million AMD

Naturally, such an ambiguous assessment of the fair value of a flow line can confuse users of financial statements and negatively affect their decisions.

Thus, the results of the revaluation of the asset to the fair value valuation will be presented on January 1, 2022 in the following accounting records:

- Asset involvement from suppliers (January 2019)

*DR Fixed Assets ..... 20*

*CR Liabilities to suppliers ... 20*

- Formulation of accumulated depreciation of assets for three years

*DR Overhead costs ..... 6 (20/10 x 3 years)*

*CR Accumulated depreciation ..... 6*

- Recognition of 5% growth of the market value of the conveyer line on December 31, 2021 on the initial value depreciation

*DR Fixed Assets ..... 1,0 (20x0,5)*

*CR Capital growth from asset revaluation ..... 1.0*

*DR Capital growth from asset revaluation.. 0.3*

*(6x0.05)*

*CR Accumulated depreciation..... 0.3*

- Impairment of the asset by 2 million drams or 13.6% [(2: 14.7) x100] at the end of the reporting period (December 31, 2021), when the revalued value of the asset decreased from 21 million AMD to 18.14 million AMD. The accumulated depreciation decreased from 6.3 million AMD to 5.44 million AMD.

*DR Capital growth from asset revaluation..... 1,0*

*CR Fixed assets ... 1,0 (reversal of the first revaluation increase)*

*DR Accumulated depreciation..... 0.3*

*(reversal of the first revaluation increase)*

*CR Capital growth from asset revaluation.... 0.3*

*DR Losses from revaluation of assets ..... 1,86*

*CR Fixed assets ..... 1,86 (21-18,14)*

*DR Accumulated depreciation ..... 0.56 (6.3-0.3-5.44)*

*CR Benefits of Revaluation of Assets ..... 0.56*

## Conclusion

One of the pillars of building international accounting standards is a prudence concept, the purpose of which is to prevent asset overvaluation and to provide users with information at fair value. However, in some cases, the recording of non-current assets at fair value involves a greater amount of impairment, especially in case of long-term usefulness of the property, plant and equipment is assessed. In this circumstance, the validity of the presentation of the non-current asset at fair value is somewhat violated. Consequently, its will be reasonable in accounting standards settings regulation approaches for useful life observing of non-current assets fair value assessments.

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7. IFRS 13, Fair Value Measurement



## ԻՐԱԿԱՆ ԱՐԺԵՔՈՎ ՀԻՄՆԱԿԱՆ ՄԻՋՈՑՆԵՐԻ ՆԵՐԿԱՅԱՑՄԱՆ ԽՆԴԻՐՆԵՐԸ ՀԱՇՎԱՊԱՀԱԿԱՆ ՍՏԱՆԴԱՐՏՆԵՐՈՎ

**Բանալի բառեր** – Ֆինանսական հաշվետվությունների Միջազգային Ստանդարտներ (ՖՀՄՍ), ակտիվների իրական արժեք, վերագնահատում, կրկնակի գրանցում, հաշվենկատության սկզբունք

Իրական արժեքով ակտիվներ ներկայացնելիս ՖՀՄՍ-ները հաշվենկատության սկզբունքին չպետք է միանշանակ մոտեցում ցուցաբերեն: Մասնավորապես, երկարաժամկետ օգտագործման հիմնական միջոցների օգտակարության արժեքը նպատակահարմար չէ դնել ակտիվի իրական արժեքի որոշման հիմքում, քանի որ ակտիվի հետագա օգտագործումից ակնկալվող դրամական հոսքերի դիսկոնտավորումը անհամատեղելի է ներկա պահին սովորական գործարքի ժամանակ ակտիվի վաճառքից ստացվող դրամական միջոցների հետ:

## ПРОБЛЕМЫ ПРЕДСТАВЛЕНИЯ СПРАВЕДЛИВОЙ СТОИМОСТИ ОСНОВНЫХ СРЕДСТВ В СТАНДАРТАХ БУХГАЛТЕРСКОГО УЧЕТА

**Ключевые слова** - Международные стандарты бухгалтерского учета, справедливая стоимость активов, переоценка, двойная запись, принцип консерватизма

При представлении активов по справедливой стоимости Международные стандарты бухгалтерского учета не должны однозначно применять консервативную концепцию бухгалтерского учета. В частности, нецелесообразно принимать полезную стоимость основных средств долгосрочного использования в качестве основы для определения справедливой стоимости, поскольку дисконтированный денежный поток, ожидаемый от дальнейшего использования актива, зачастую несовместим с денежными средствами полученными от продажи актива на данный момент.

*Submitted: 20.08.2021*

*Accepted for publication: 15.11.2021*

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## **INTERNAL CONTROL SYSTEM IMPLEMENTATION ISSUES IN THE ORGANIZATION**

**Abstract:** The object of the presented article is the internal control and controlling systems of the organizations. The theoretical, informational and methodological basis of the article were the Quality Management System within the framework of ISO 9001: 2015 Standard, Accounting and Audit standards and regulations, etc. Each systems' features, roles, purposes, structures, functions and stages of performance were studied to find out the issues of the need for joint use of the control systems. The impossibility of perceiving the same the above mentioned systems was substantiated.

**Keywords:** Internal control system, controlling system, risk management, control insurance, quality assurance of managerial decisions.

**JEL classification:** Q14

**The objective of the research:** Carry out internal control and controlling systems' features identification and comparative analysis.

**Research hypothesis:** Resource constraints, globalization, and other modern challenges of the global economy are forcing organizations to look for alternative ways to develop sustainability in contrast to constantly injecting resources into the organization. The above mentioned hypothesis is subject to be done within the framework of competent management by improving the quality of control.

**Novelty of the research.** The internal control and controlling systems peculiarities and the expediency of joint use within the organizations were revealed.

## **Introduction**

There are a number of reasons for the interest in controlling: particularly, organizations need to increase efficiency by identifying the potential of internal resources. The head of organizations are more likely to invest in the managerial accounting (which is the basis of controlling and often it is perceiving it as the same) and budgeting [1]. Changes in the Quality Management System have played a major role in motivating the above, from ISO 9001: 2000 to ISO 9001: 2015, emphasizing the need for effective controlling of the organization in the modern conditions. In addition to this, ISO 9001: 2015 has emphasized the risk management focus, which is an innovation that did not exist in ISO 9001: 2008 [2]. The controlling and internal control systems faced issues of comprehensive risk identification and management.

The objective of this article is to carry out a comparative analysis of Controlling and Internal Control System (ICS) substantiating the need for effective presence of each for normal operation in the organization.

The relevance of the article lies in the fact that in the Republic of Armenia the ICS is mostly imagined within the framework of internal audit functions, as there is an insufficient level of study of the features of the functions in the scientific and practical platforms of ICS and Controlling systems. Taking into account the above-mentioned, the article tries to substantiate the necessity of joint use of the mentioned two systems, clearly understanding the role of each.

## **Research methodology**

All organizations should have an internal control system, regardless of their sphere, organizational, legal framework and the scope of activities. However, each organization builds its own ICS based on the organization specification and on the risks threatening the organization.

The key issue of the ICS is the effective organization of internal audit, that is, establishing control over the assets use efficiency at the

disposal of the organization, approving the implementation of internal control procedures, assessing the quality of managerial information, etc.

The task of internal audit is to ensure compliance of financial statements with international accounting standards, laws, regulations, to develop internal auditing standards, etc. The organization's accounting policies should include in the ICS. Establishment and further development of the ICS is regulated by the country's law. In particular, in Russia, the ICS received mandatory status in 2011 [2]. The issues of corporate governance are always in the focus of the Basel Committee, and all agreements provide the need of the internal control system, advising the measures to strengthen the latter, particularly for the banking system. The Basel Committee, analyzing the problems faced by commercial banks, concluded that their source was the shortcomings in the internal control system [3]. The Basel Committee recommends that the management of the commercial bank, the internal and external auditors pay more attention to the stabilization and strengthening of the ICS, as well as to evaluate its effectiveness on a continuous basis. Disadvantages of the ICS can directly lead to large losses for commercial banks [4]. The Republic of Armenia, through the Central Bank of the RA, is following the agreements of the Basel Committee and is gradually implementing them. Recent changes in the ICS have been related to the introduction of three levels of protection in organizations [5]:

- Control of previous and current periods;
- Introduction of independent monitoring measures for ICS;
- Evaluation of the complexity and efficiency of the ICS.

### **Research results**

Modern controlling system is a managerial function, which is called to create processes and systems, which will be regulated by targeted parameters.

The ICS is an observation of the actual values of the parameters, in the sense of being included in the controlling system, as it is not possible to manage the target parameters without actually reversing them [6]. Internal control system should be exercised at all levels of the organization management.

The ICS and Controlling are different processes. ICS, being the ultimate service of management, completes the control process; its task is to fix the actual indicators. Controlling is an active participant in the control process, designing the process design, developing the system of indicators, defining the target values, the further consideration of which will ensure the implementation of the strategic goals of the organization. The control function in management is aimed at identifying the shortcomings of the previous three functions: planning, organizing and managing, in order to correct them in the future. Controlling is the creator of an effective control system. Post-certification in the case of controlling is only intended to identify lost opportunities, while the function of the ICS is immediate post-certification.

Based on the above definitions of ICS, it becomes clear that controlling is intended to find new ways to develop an organization, to predict the economic situation (to do prediction is needed the economist's broad vision and analytics skills), to improve the cost-output ratio, regardless of the possible risks, and the ICS works to manage risks, predicts them, and looks for ways to insure against adverse outcomes.

Taking into account the above, it becomes clear that these two systems are different, but only their joint application can provide organizations with stability on the one hand, normal operation, on the other hand, give the organization an opportunity to develop by taking a reasonable amount of risk. The following is a list of comparative analysis of ICS and Controlling: Table 1.

**Table 1. Comparative analysis of ICS and controlling systems**

<b>Comparison features:</b>	<b>ICS</b>	<b>Controlling system</b>
Definition	The ICS is a system of internal organizational structure of financial infrastructure, business processes, risk management system, accountability, as well as control measures.	Management tool based on information base, which is aimed at identifying the unfavorable situations of the organization, providing information to the management and, most importantly, as a consequence, forecasting the activities of the organization and possible development.
Purpose	<ul style="list-style-type: none"> <li>• Operational</li> <li>• Informational</li> <li>• Compliance</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring control</li> <li>• Ensuring effective management</li> <li>• Quality assurance of managerial decisions based on monitoring of changes in internal and external environments.</li> </ul>
Issues	Comprehensive supply of information to the management system for effective decision making (3).	Diagnosis of the actual state of the organization, comparison with the forecast, identification of patterns and trends, forecast of external-internal factors that negatively affect the organization.
Functions	<ul style="list-style-type: none"> <li>• Controlling</li> <li>• Analytical</li> <li>• Regulating</li> <li>• Informational</li> </ul>	<ul style="list-style-type: none"> <li>• Coordinating</li> <li>• Analytical</li> <li>• Controlling</li> <li>• Predicting</li> </ul>
Structure	<ul style="list-style-type: none"> <li>• Control system</li> <li>• Risk assessment</li> </ul>	<ul style="list-style-type: none"> <li>• Defining the goals of the organizations, formulating</li> </ul>

	<ul style="list-style-type: none"> <li>• Controlling function</li> <li>• Information and communication system</li> <li>• Monitoring</li> </ul>	<p>the tasks</p> <ul style="list-style-type: none"> <li>• Managerial and financial accounting</li> <li>• Planning</li> </ul>
Employee involvement	All employees are involved in the ICS in accordance with their responsibilities and functions	Officials, managers, controllers are involved in the controlling system.

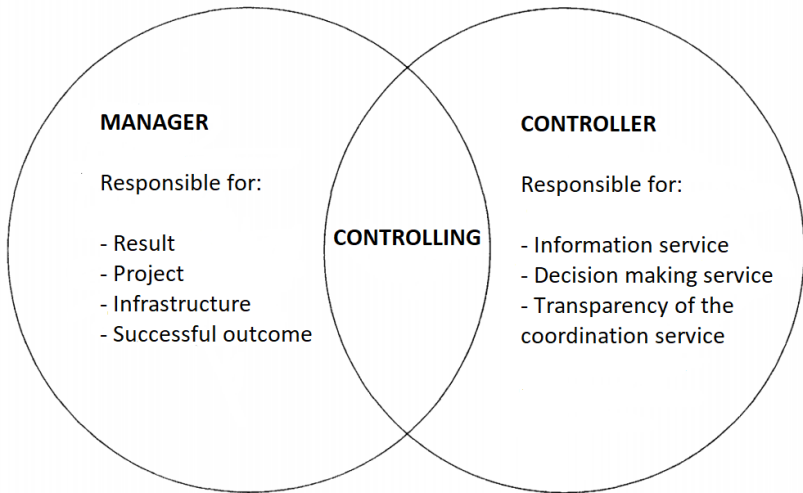
Table 1 states that all employees are involved in the ICS within the scope of their powers, responsibilities and functions. The controller is responsible for the controlling system. The controller must have analytical skills, organizational skills, be a prudent economist. Employees involved in ICS must have strong knowledge and a willingness to adhere to the regulations. The activities of the controller cover all levels of the organization hierarchy. The role of the controller functions in the controlling system have clear difference from the ICS [7]. The activity of the controller manager has its peculiarities, and their combination is the controlling system.

Effective control can be established on the basis of an effective managerial accounting system. The end result of effective control is the reliability of the reporting information, as evidenced by the internal audit reports and the relevant external audit report.

A clear illustration of the differences between the ICS and the controlling is the fact that the ICS consists of internal audit and management control subsystems. In this context, the ICS partially becomes a body that collects reliable data, which subordinating to



internal audit, insures company from the outflow of resources and ensures a positive conclusion of further external audit.



**Figure 1. Controlling as a intersection of manager and controller activities**

### **Conclusion**

Organizations are constantly trying to improve their controlling systems for the development of organization's operations. The comparative analysis of the ICS and controlling systems showed the difference and the need of joint use in the organization. Small organizations in the Republic of Armenia have partly a ICS, the emphasis of which is internal audit. Medium-sized organizations have most of the elements of a well-established, complete ICS available in the Financial Control Division. In most of the commercial organizations of the Republic of Armenia, there are no well-established two jointly implemented systems due to the lack of a clear idea of their differences and the

lack of a positive idea of their existence. The situation in the financial system, particularly in commercial banks, is different, as the latter are guided by the directives of the Central Bank of Armenia, which in turn stinks of the Basel Committee agreements. As presented in the article, the Basel Committee emphasizes the need for a controlling system in organizations, considering the latter as one of the main preconditions for identifying the potential of the organization, efficient use of resources.

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## ՆԵՐՔԻՆ ՎԵՐԱՀՍԿՈՂՈՒԹՅԱՆ ՀԱՄԱԿԱՐԳԻ ԿԻՐԱՌՄԱՆ ՀԻՄՆԱԽՆԴԻՐՆԵՐԸ ԿԱԶՄԱԿԵՐՊՈՒԹՅՈՒՆՆԵՐՈՒՄ

**Բանալի բառեր** - Ներքին վերահսկողության համակարգ, կոնտրոլինգի համակարգ, ռիսկերի կառավարում, վերահսկողության ապահովում, կառավարչական որոշումների որակի ապահովում

Ներկայացվող հոդվածի ուսումնասիրության օբյեկտը կազմակերպությունների ներքին վերահսկողության և կոնտրոլինգի համակարգերն են: Հոդվածի տեսական, տեղեկատվական և մեթոդաբանական հիմք են կազմել Որակի կառավարման համակարգը՝ ISO 9001:2015 ստանդարտի շրջանակներում, հաշվապահական հաշվառման և աուդիտի ստանդարտներն ու կանոնակարգերը և այլն: Կազմակերպություններում կոնտրոլինգի համակարգի և ՆՎՀ-ի համատեղ կիրառման անհրաժեշտության հիմնահարցերը պարզելու համար ուսումնասիրվել են յուրաքանչյուր համակարգի առանձնահատկությունները, դերը, նպատակը, կառուցվածքը, գործառույթները և կառուցման փուլերը: Հիմնավորվել է վերջիններիս նույնականացման անհնարինությունը:

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## **ПРОБЛЕМЫ ПРИМЕНЕНИЯ СИСТЕМЫ ВНУТРЕННЕГО КОНТРОЛЯ НА ПРЕДПРИЯТИЯХ**

**Ключевые слова** - Система внутреннего контроля, система контроллинга, управление рисками, обеспечение контроля, обеспечение качества управленческих решений

Объектом представленной статьи являются системы внутреннего контроля и контроллинга на предприятии. Теоретической, информационно-методологической основой статьи послужили Система менеджмента качества в рамках стандарта ISO 9001: 2015, стандарты и правила бухгалтерского учета, аудита и т.д.. С целью выяснения вопросов необходимости совместного использования СВК и системы контроллинга на предприятиях были изучены особенности, роль, цель, структура, функции и этапы построения каждой системы.

*Submitted: 14.10.2021*

*Accepted for publication: 15.11.2021*

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## **NEW APPROACHES OF LEASE ACCOUNTING**

**Abstract:** This article is about a widespread and highly successful economic institution that has been largely overlooked in both economic and legal literature: leasing.

Leasing is a flexible solution that allows entities to access and use property and equipment without needing to incur large cash outflows and it enables lessees to address the issue of obsolescence and residual value risk. Leases are very common in the banking and capital markets sector and IFRS 16 implementation has had a significant impact on the credit institutions' operations and financial statements.

In January 2016, the International Accounting Standards Board (IASB) issued IFRS 16 "Leases", which will replace the current standard IAS 17 "Leases". IFRS 16, whose application is mandatory for annual periods beginning on or after January 2019, sets out new rules for the recognition and measurement of leases, leading to a change of value for the elements recognized in the financial statements, as well as for the financial indicators calculated based on these.

**Keywords:** IFRS 16, IAS 17, Finance lease, Operating lease, Right of use, lessees, lessors, modification

**JEL classification:** M 42

**Research aim:** The aim of the research is to present the specifications and modifications of the IFRS 16.

**Research hypothesis:** It is hypothesized that the recognition of the right-of-use asset considers one of the main calculations in the IFRS 16.

**Research novelty:** In this research, we have highlighted the specifications of a new adopted standard called IFRS 16, Lease.

### **Introduction**

All companies need different types of assets to sell goods or provide services to their customers. Each company has two ways to use the assets: buy or rent. In many cases, companies prefer to rent the asset rather than buy it, as it does not require one-time payments. That is why the term lease is used in accounting, which is one of the most important concepts.

The lessee for a contract that contains a lease component and one or more additional lease or non-lease components, a lessee shall allocate the consideration in the contract to each lease component on the basis of the relative standalone price of the lease component and the aggregate standalone price of the non-lease components. The lessor is typically the owner of the asset and gets it back after the lease expires [1].

### **Research results**

Although leases have existed in human history for a long time and have different descriptions, let's bring up some examples of the lease definition, in the ancient Babylonian cuneiform tablets the lease was defined as agricultural land, urban dwellings, and personal property [2]. In civil law countries, leases came to be regarded as a special form of contract [3]. Nowadays leases are used to make a legal agreement by which money is paid in order to use land, a building, a vehicle, or a piece of equipment for an agreed period of time [4].

In the new IFRS 16 standard, there are two classifications of lease: Finance lease and Operating lease, if the lease is classified as a finance lease, then if it transfers substantially all the risks and rewards incidental

to ownership of an underlying asset. If it's classified as an operating lease if it does not transfer substantially all the risks and rewards incidental to ownership of an underlying asset [5]. The purpose of this standard is to ensure that lessees and lessors provide relevant information that accurately reflects those transactions. The provided information considers basic information for financial statements users because it gives the possibility to evaluate the impact of leasing on a company's income statements, balance sheet, and cash flow statements. In applying this Standard, the company should take into consideration the terms and conditions of the contract, all relevant facts, and circumstances.

Lease modifications are defined explicitly in this standard as being a change in the scope of a lease or the consideration that was not part of the original terms and conditions of the original lease contract. So, it means that you have to add a right-to-use asset or even more, or that you reduce certain space that you have, or that you make the term of the lease longer or shorter than initially anticipated. That's the change in the scope of a lease and after that, if you have a lease modification, it kind of matters whether it would be regarded as a separate lease or whether it's indeed a modification of the original lease contract.

As we mentioned the purpose of the standard, let's introduce some of the most used terms in the IFRS 16 standard:

- **Commencement date:** The date on which a lessor makes an underlying asset available for use by a lessee.
- **Lease term:** The non-cancellable period for which a lessee has the right to use an underlying asset, together with both: (a) periods covered by an option to extend the lease if the lessee is reasonably certain to exercise that option; and (b) periods covered by an option to terminate the lease if the lessee is reasonably certain not to exercise that option.

- **Fixed payments** (including in-substance fixed payments), less any lease incentives.
- **Residual value guarantees A guarantee:** made to a lessor by a party unrelated to the lessor that the value (or part of the value) of an underlying asset at the end of a lease will be at least a specified amount.
- **Unguaranteed residual value:** that portion of the residual value of the underlying asset, the realization of which by a lessor is not assured or is guaranteed solely by a party related to the lessor.
- **Net investment in the lease:** the gross investment in the lease discounted at the interest rate implicit in the lease [1].

In this episode, we will also cover the key reminders and considerations about the implementation of IFRS 16 by lessees as a calendar year and entities finalize their financial statements.

Let's start with the definition of a lease. Entities have spent a substantial amount of time and effort on implementation. One key issue is the identification of a lease.

- An entity that obtains the right to use an underlying asset for a period of time in exchange for consideration.

Both can be difficult to do in practice, and in particular, the second issue may require significant judgment as entities need to consider who has the right to direct how and for what purpose the asset is used. This means entities need to determine who has the decision-making rights that affect the economic benefits to be derived from the use of the asset. This represents a significant change from the leases model under the legacy standard.

- Evaluate whether the customer has the right to control the use of the identified asset: The control assessment focuses on the following.
  - Does the entity have the right to obtain substantially all the economic benefits from the use of the identified asset?



- Does the entity have the right to direct the use of the identified asset?
- Does the entity have the right to direct the use of the identified asset?
- Consider processes to manage contracts
  - Contracts may be entered into or monitored in a decentralized manner.

**Let's focus on the key issues.** One of them is the situation when an entity enters into a lease contract that doesn't specify a particular term and continues indefinitely until either party gives the notice to terminate. "In determining the lease term and assessing the length of the non-cancellable period of a lease, an entity shall apply the definition of a contract and determine the period for which the contract is enforceable. A lease is no longer enforceable when the lessee and the lessor each has the right to terminate the lease without permission from the other party with no more than an insignificant penalty" [1, Paragraph B347].

**Table 1. Lease payments**

Fixed payments, including in-substance fixed payments, less any lease incentives	Exercise price of a purchase option (if reasonably certain of exercise)	Payments of penalties for terminating the lease (unless reasonably certain not to exercise)	Variable lease payments that depend on an index or rate	Residual value guarantees (lessees: expected payments; lessors: all guarantees)
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We think it is important to emphasize that the term penalty is interpreted broadly to include economic disincentives, and the term enforceability is applied to the contract, but not to the termination

option. If the application of this paragraph doesn't result in the lease term limited to the notice period, then the entity needs to evaluate the lease term using reasonably certain criteria.

The most important reminder is that there are lease agreements that include payments that are described as variable or may appear to contain variability but are in fact in-substances fixed payments because the contract term ensures that a payment of a fixed amount is unavoidable, such payments are included in the lease payments at lease commencement, and thus used to measure the entities lease liabilities. To distinguish what is variable and what is in-substance fixed it may be helpful to evaluate whether the payments are genuinely variable. In some cases, this requires judgment.

Let's focus on another important term in IFRS which is Incremental borrowing rate (IBR). IFRS 16 defines the IBR as the following: "The rate of interest that a lessee would have to pay to borrow over a similar term, and with a similar security, that funds necessary to obtain an asset of a similar value to the right-of-use asset in a similar economic environment" [1].

- The IBR is an entity-specific rate.
- The security needs to be based on the right-of-use asset. The requirement to use a securitized rate may pose challenges in practice as not all entities borrow on a securities basis.
- In specific circumstances, subsidiaries might be able to use the IBR of the parent as a starting point. However, adjustments should be applied to account for any differences in fact and circumstances.
- The input to this estimate, such as a lessee's credit rating or market conditions, may change over time and may affect the subsequent estimation of the IBR for new, reassessed or modified leases.

### **Operating lease recognition and measurement**

When the lessor is signing an operating lease contract, should add the direct initial expenses to the book value of the assets and recognize these expenses as costs during the lease term. This concept can be applied while counting the lease income. The depreciation calculation policy during the operating lease should be matched with the depreciation calculation policy applied by the lessor for such assets.

The lessor should calculate the depreciation in accordance with IAS 16 (Property, Plant, and Equipment) and IAS 38 (Intangible Assets). A lessor should apply IAS 36 (Impairment of Assets) to determine whether the assets that are the subject of an operating lease are impaired or not and to calculate the Impairment loss.

### **Finance lease recognition and measurement**

At the date of commencement of the lease, the lessor should recognize the leased assets in its financial statements as assets and submit them as account receivables and be equal to the net investment in the lease. The net investment includes: fixed payments, variable lease payments, the guarantee of any residual value provided to the lessor, the purchase price of the purchase option, and payments of fines related to the termination of lease.

### **IFRS 16 lease modifications**

As we mentioned above, in case of any discrepancy, IAS standards are replaced by IFRSs. Related to IAS 7 which presupposes a prior lease standard, recognizes leased or leased assets as a material asset. When applying this standard, it is often necessary to take under consideration the essence of the transaction and not its strictly legal form. In other words, the legal basis of the transaction can be used to conceal the true nature of the transaction. The scope is generally similar in that both standards include all contracts which convey a right-of-use (ROU) to an asset.

IFRS 16 explains that it only is a separate lease contract and that it's also accounted for separately from the original contract if you meet two conditions and that means that you have a modification that increases the scope of the lease by adding one or more underlying right-to-use assets. For example, it means that if you originally had a lease contract where you leased five cars, if you lease an additional sixth car, that would be an additional right-of-use asset and it increases the scope of the lease. And the second condition, typically if you see lease something in addition, also the consideration changes so you have to pay more and that changes in the consideration need to be commensurate with the standalone selling price if that additional right-to-use asset. If you meet both of those then you account for it as a separate lease contract, which means that at the commencement date of the lease you account for the lease liability and the right-of-use asset.

If you meet those two criteria, so it is an additional right-to-use asset, which in this case it would be because that's the sixth car, and also the price change would be commensurate with the standalone selling price, we have a separate new lease contract. The original lease contract remains accounted for as it always has been, also in the future, and you have a new lease contract that will be accounted for at commencement date which we'll also have to determine a new discount rate for that contract, which may be different from the original contract.

If the contract would not result in a separate lease contract, that means you have to allocate a consideration and determine the new lease term of the revised lease contract and the lease liability has to be calculated based on the revised lease payments but also revised discount rates. This can be quite challenging, but those are the steps that we have to go through.

### **The calculation of Right of Use**

Start with the initial amount of the lease liability, computed by discounting the remaining lease payments

- + Outstanding balance of prepaid rent or
- – Cumulative remaining deferred rent
- + Initial direct costs
- – Lease incentives paid at or before the commencement of the lease

The double-entry with the chart of account system is not available in the IFRS 16 which leads to many difficulties while recognizing and in the IFRS 16 the leased asset is replaced with the right of use asset, which means we need to adopt chart of account that represents the asset as an intangible asset and would be easily be recognized in the financial statement.

### **Conclusion**

In conclusion, Application of a new lease standard will fundamentally change the way the leases are accounted for and reported in financial statements for the lessee. The major change that is introduced in IFRS 16 contains the capitalization of current operating lease for the lessee. Financial statements of the lessee will undergo significant changes depending on the volume and amount of active contract of operating leases. Total assets and total liabilities will increase and that will have a significant impact on lessees' financial position. In the income statement, the lessee will recognize the interest cost and the amortization of the leased asset. In the cash flow statement, the structure and amount of cash flows from operating and financing activities will change, but total net cash flow will remain at the same level.

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**Կարինե Ջուրաբյան**  
տ.գ.թ., դոցենտ, ԵՊՀ

**Լիլիթ Նաջարյան**  
Մագիստրոս, ԵՊՀ

## ՎԱՐՁԱՎԱԼՈՒԹՅԱՆ ՀՍԵՎԱՌՄԱՆ ՆՈՐ ՄՈՏԵՑՈՒՄՆԵՐԸ

**Բանալի բառեր** – ՖՀՄՍ 16, ՀՀՄՍ 17, ֆինանսական վարձակալություն, գործառնական վարձակալություն, օգտագործման իրավունքի ձևով ակտիվ, վարձատու, վարձակալ, փոփոխություններ

ՖՀՄՍ 16-ի կիրառումը հիմնովին փոխում է վարձակալության հաշվառումը՝ մասնավորապես կենտրոնանալով իրավունքի ձևով ակտիվի արժեքի վրա: Ստանդարտում ներդրված հիմնական փոփոխությունը ենթադրում է վարձակալի համար գործառնական վարձակալության կապիտալացում: Դրա կիրառումը հանգեցնում է ընդհանուր ակտիվների և պարտավորությունների աճին, ինչն էական ազդեցություն է թողնում վարձակալի ֆինանսական վիճակի վրա: Ֆինանսական արդյունքների մասին հաշվետվությունում վարձակալը պետք է ներկայացնի վարձակալության գծով պարտավորության տոկոսն ու վարձակալված ակտիվների օգտագործման իրավունքի գծով

մաշվածության գումարը: Դրամական միջոցների հոսքերի մասին հաշվետվությունում փոխվում են գործառնական և ֆինանսավորման գործունեությունից դրամական միջոցների հոսքերի կառուցվածքն ու գումարները, սակայն ընդհանուր զուտ դրամական հոսքերը մնում են նույն մակարդակի վրա:

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## **НОВЫЕ ПОДХОДЫ В БУХГАЛТЕРСКОМ УЧЕТЕ АРЕНДЫ**

**Ключевые слова** – МСФО 16, IAS 17, финансовая аренда, операционная аренда, право на использование актива, арендодатель, арендополучатель, модификация

Применение МСФО 16 коренным образом меняет учет аренды, в частности акцентируясь на праве на использование актива. Основное изменение стандарта предполагает капитализацию операционной аренды у арендатора. Его применение приводит к общему росту активов и обязательств организации, что, в свою очередь, оказывает существенное влияние на финансовое положение арендатора. В отчете о прибылях и убытках арендатор должен признавать проценты по обязательству по аренде и амортизацию актива, представляющего собой право на использование. В отчете о движении денежных средств меняются структура и суммы денежных потоков от операционной и финансовой деятельности, однако общие чистые денежные потоки остаются на том же уровне.

*Submitted: 03.09.2021*

*Accepted for publication: 15.11.2021*

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## **IMPROVING STUDENT GRADING IN ACCOUNTING PROGRAMS**

**Abstract:** Students in accounting programs from different universities having varying grading scales. Moreover, evaluation approaches also differ. In some places, the results of the intermediate-final exams are evaluated, the final grade of the subject is determined by the cumulative approach. Sometimes the results of the final assessment take into account the level of student attendance and academic activity. Even not so long ago, Armenian universities were limited to the results of a final oral exam when assessing students. Questions then arise as to how students should be assessed, which assessment approaches are most sound, or, in general [1], whether the student needs to be assessed or can only be satisfied with test approaches? At present, universities face challenges in effectively addressing such issues.

**Keywords:** vocational education programs, study load, assignment assessments, capacity measurements

**JEL classification:** I20

**Research aim:** introduce new approaches to grading students enrolled in accounting programs at universities

**Research hypothesis:** the progress of students involved in accounting programs is not always realistically assessed



**Research novelty:** a system for evaluating learning outcomes has been introduced, taking into account both the student's academic workload and the level of access to educational outcomes

### **Introduction**

At present, the need to evaluate learning outcomes is not unequivocally accepted in universities. Skill-based education is commonly viewed as unnecessary when evaluation students in universities on the principle of moderation. In this case, the assessment approach does not accurately measure the student's knowledge, abilities or skills, but how they acquire set professional skills [2]. Consequently, the center of gravity of educational goals shifts from the training of a well-developed graduate with rich professional knowledge to the preparation of a graduate with competitive professional skills and abilities, in which case the achievements are recorded, rather than their grading. However, on the other hand, experts' claim, that the assessment system used in universities is considered to be the most important component of the education system, as students are provided with scholarships, transfers from university to university, determination of winners of academic competitions, etc. Moreover, in the professional literature, there is an opinion that not only students but also lecturers, even the relevant departments of universities, should be evaluated.

In our opinion, the evaluation of learning outcomes in universities should not be considered a mandatory condition and should not be considered as a priority in the organization of education. However, when learning outcomes are interpreted in a competitive or comparative context, there will certainly be a need to apply a measurable learning outcomes, that will be reflected in the student's grades.

## **Research results**

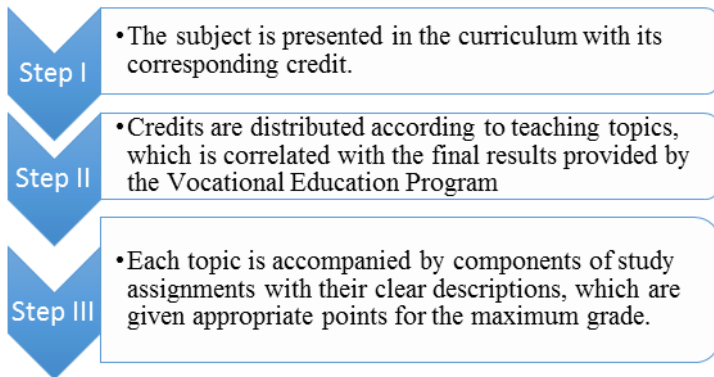
If the problem of the measurability of the learner's workload in universities is solved by the use of academic credits, even though it is enshrined in law, the same cannot be said for the measurement of learning outcomes. Thus, the RA legislation stipulates that: “Academic credit system is a system of association of the educational process, measurement, registration and transfer of academic results through academic credits, which includes teaching, practical-individual trainings, consultations, preparation of essays, other works, preparation of exams, rating and etc.” [5].

The European Credit Transfer System ensures the comparability of academic credits, transferability, facilitates the mobility of students in the common European Higher Education Area.

At the same time, it should be noted, that unlike the measurement of the study burden, the measurement of students' assessment is left entirely to the discretion of the universities, and in this regard, it has not yet received its centralized regulation. In such a situation, there is not only a variety of assessment of learning outcomes in universities, but also the application of different methods of measurement [3]. There are even cases, when the evaluation system is very primitive in nature, limited to only the results of interim or final evaluation [4].

Given the current situation, we propose a learning assessment approach that combines the process of accumulating academic credits with the level of fulfillment of assignments given to students. To date, student progress has been summed up by an average grade point average, when grades obtained from all subjects are calculated on a weighted average, taking academic credits as weights.

The proposed grading system will be applicable to each subject using the following steps (see Figure 1).



**Figure 1. Suggested student grading system composition steps**

According to the professional educational framework "Accounting and Taxation" the Financial Accounting subject is taught, carry out 4 academic credits with the following components of the hourly study workload:

- Total learning hours: 120
- Academic credit: 4
- Classroom hours: 68 (lecturing 38, seminars 30)
- Self study hours: 52

In order to ensure the size of the assessment, according to the proposed methodology, the academic credits are distributed among the topics taught in the subject, so that they are related to the learning outcomes (see Table 1). It is desirable to present the topics in the syllabus in magnified format, to better distribute credits. See below:

- Topic 1. Financial Accounting Methodology (0.5 academic credits)
- Topic 2. Accounting registers and double entry (1 academic credit)
- Topic 3. Financial Accounting Statements (1.5 academic credits)
- Topic 4. Analysis of Financial Statements (1 academic credit)

**Table 1. Assessment of learning outcomes for the subject “Financial Accounting”**

Topics and Assignments	Learning outcomes			
	Double entry setting abilities	Accounting software using skills	Accounting statements composition skills	Financial analyzing abilities
Topic 1	1,5 credit a (8) c (12) e (5)			
Topic 2			0,7 credit a (13) j (8) k (7) l (9)	
Topic 3				0,3 credit l (4)
Topic 4		1,5 credit h (15) k (15) m (4)		
Σ4 academic credit				
Total points	25	34	37	4
Σ 100 grading points				

At the same time, each academic credit receives a given grading points for study assignments, with a sum of 100 points. In addition, the assessments have the following descriptions measurement approaches: s;

- a. The student mastered the theoretical material
- b. The student completed an online supplementary e-learning
- c. The student passed the theoretical test

- d. The student performed a self-analysis of the test results
- e. The student made and showed the assigned thematic slide show in the classroom
- f. The student made suggestions during group work
- g. Analyzed the assigned case study
- h. Presented conclusions on the assigned scientific article
- i. The student presented the submitted essay
- j. The student conducted an empirical study
- k. The student presented analytical calculations
- l. The student solved problems with practical tasks

### **Conclusion**

The proposed grading system covers the student's entire academic workload (classroom hours, self-employment) as it is based on academic credits. At the same time, the assessment system we offer is based on the outcomes envisaged in the vocational education program, which measures the achievement of the student's professional abilities and skills. A combined assessment of academic credits and learning outcomes provides an opportunity to more realistically measure the actual achievement of a student's professional competencies.

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**Նոննա Խաչատրյան**  
տ.գ.թ., դոցենտ, ԵՊՀ

**Համիկ Սահակյան**  
«Հաշվապահության Ուսուցման Միջազգային Կենտրոն»  
կրթական հիմնադրամ, գործադիր տնօրեն

## **ՈՒՍԱՆՈՂՆԵՐԻ ԳՆԱՀԱՏՄԱՆ ԲԱՐԵԼԱՎՈՒՄԸ ՀԱՇՎԱՊԱՀԱԿԱՆ ՀԱՇՎԱՌՈՒՄ ԾՐԱԳՐԵՐՈՒՄ**

**Բանալի բառեր** - մասնագիտական կրթական ծրագրեր, ուսումնառության ծանրաբեռնվածություն, հանձնարարականների գնահատումներ, կարողությունների չափումներ

Հաշվապահական հաշվառում և աուդիտ մասնագիտությամբ սովորող ուսանողներին ուսումնառության գնահատման ժամանակ համալսարանները սովորաբար գնահատման տարբեր սանդղակներ են կիրառում: Ավելին, գնահատման մոտեցումներն երբեմն իրարից տարբեր են: Որոշ դեպքերում գնահատվում են միջանկյալ և ամփոփիչ քննությունների արդյունքները, և կուտակային մոտեցմամբ որոշվում է առարկայի ամփոփիչ գնահատականը: Երբեմն ամփոփիչ գնահատման արդյունքներում հաշվի են առնվում ուսանողների հաճախումների, ակադեմիական ակտիվության աստիճանը: Ոչ վաղ անցյալում, հայաստանյան բուհերն ուսանողներին գնահատելիս սահմանափակվում էին ընդամենը եզրափակիչ բանավոր քննության արդյունքներով: Հոդվածում իրենց մեկնաբանություններն են ստանում այն հարցադրումները, որոնք առնչվում են համալսարաններում

հաշվապահական հաշվառման և աուդիտ մասնագիտացմամբ սովորող ուսանողների գնահատումներին:

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## **УЛУЧШЕНИЕ ОЦЕНКИ СТУДЕНТОВ В ПРОГРАММАХ БУХГАЛТЕРСКОГО УЧЕТА**

**Ключевые слова** - программы профессионального образования, учебная нагрузка, оценка преподавателей, наращивание потенциала

В разных университетах при обучении студентов по специализации бухгалтерский учет и аудит используются разные методы оценки. Более того, существуют разные подходы к оценке знаний. В некоторых случаях оцениваются результаты промежуточных выпускных экзаменов, и итоговая оценка определяется куммулятивным подходом. Иногда в результатах итоговой оценки учитывают уровень посещаемости и академической активности студентов. Еще в недавнем прошлом, армянские университеты ограничивались результатами итогового устного экзамена при оценке студентов. В статье комментируются вопросы, связанные с оценками студентов в вузах, обучающихся по программам бухгалтерского учета.

*Submitted: 10.09.2021*

*Accepted for publication: 15.11.2021*

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## **INSURANCE MARKET ANALYSIS IN THE RA**

**Abstract:** The article examines the insurance market of the Republic of Armenia. First, general analysis of global and local insurance markets was conducted, revealing main market trends, key market players and forecasts. Then all types of insurances offered by insurance companies operating in the Republic of Armenia were identified and classified. The 142 existing insurance types for individuals and legal entities are classified into 13 main groups. Finally, the profitability indicators of the insurance market were estimated and market volume, profitability ranges were made based on financial statements of the insurance companies. The financial ratios used to calculate profitability ratios and market ranges are: EBIT/revenue, net interest income/revenue, mark up on total cost. Market range is estimated to be the range between first and third quartiles. This article analyses the global and local market, reveals all the types of insurance offered in the Republic of Armenia, calculates the volume of the insurance market of the Republic of Armenia, financial indicators of profitability and ranges.

**Keywords:** insurance, insurance market, profitability, types of insurance, market analysis

**JEL classification:** G22, G23

**Research aim:** to analyse the developments of the RA insurance market in the period preceding and after the COVID-19 pandemic in order to reveal patterns.



**Research hypothesis:** in a pandemic, significant changes in the course of the economy are reflected in insurance market developments.

**Research novelty:** the stability of the insurance market is not only due to the expansion of the circle of policyholders, but also to the application of effective financial management approaches.

## Introduction

In 2020, the gross domestic product of financial and insurance activities in Armenia at current prices was 415,939,800,000 drams in the case of GDP of 6,183,742,100,000 drams and increased by 7.71% compared to 2019. The real volume index in 2020 was 107,8, and the average value of the real volume index in the last 5 years was 114.96. Financial-insurance activity is considered to be one of the most important branches of the RA economy. In contrast to the banking sector, insurance is relatively new, but as in many countries it plays a very important role in both the economy and social life. Despite that, people's trust and the volume of using insurance services in Armenia remain limited. In the conditions of such demand, the types of insurance offered by the organizations are also limited.

Prior to the spread of COVID-19, gross insurance premiums in 2019 were mainly growing in the areas of life insurance, not life insurance. This increase was due to the growing demand for certain types of life insurance, such as car insurance. Along with the increase in insurance premiums, in some countries the paid compensations have increased. However, the year of relatively mild disasters means that the compensation was not as high as it could have been in other cases. Overall, non-life insurance performance was positive. The stock markets were also active in 2019. Gross insurance premiums increased by an average of 4.7% in the life insurance market and 3.6% in the non-life insurance market. Growth in the life insurance market in 2019 has been the awareness and interest of consumers in some countries. The

increase in demand for non-life insurance is due to various factors, that are unique to this type of insurance. As the volumes of insurance and insurance premiums have increased, the compensations paid have also increased. In 2019, the ROE index was positive for all types of insurers. The highest ROE rates were recorded in Argentina (49.3%), Russia (52.3%) and Turkey (42.4%). In contrast to 2019, 2020 was special for all sectors businesses and the insurance sector is no exception. Due to the spread of COVID-19 pandemic, the lockdowns had their impact on the insurance market. COVID-19 had a serious influence on the compensations paid, that impact varied by type of insurance. Car insurance claims have fallen in many countries as traffic has declined due to the epidemic. Conversely, in the case of life and health insurance, compensation paid under the COVID-19 pandemic has increased.

### **Research results**

Changes of insurance companies' cost management, which began before the spread of the pandemic, remain crucial, not only to reduce rising costs, but also to finance faster innovation, business recovery, and future growth. According to a survey conducted by Deloitte, 61% of respondents predict spending cuts of 11% - 20% in the next 12-18 months [1]. The Asia-Pacific region, particularly Australia and Japan, is projected to have the largest spending cuts, with 35% expecting more than 20% reductions, compared with 19% in Europe, and 11% in North America. In addition to cost savings, many insurance companies are redesigning their priorities and reducing their costs. Insurance companies are moving to more parametric policies that compensate for the damage caused by a certain event. Similar types of insurance, which are used for property damage due to disasters, can also be used to insure against the risk of epidemics. London-based Lloyd's recently introduced an insurance business to avoid the risk of interruptions due to IT failures [2].

The main market trends are:

**Digitization.** Due to the rapid development of digital technologies, the market must adapt to new digital native customers. In addition, artificial intelligence technologies play an important role in the development and sale of products.

**Innovation.** The insurance market has always been considered a conservative market with less innovation. However, with the development of digital technologies, the market is becoming more and more innovative, offering new products & solutions.

**Personalization.** As a result of customer data and behaviour research, insurance companies have the opportunity to offer personalized insurance policies, that will best suit the customer, to present them to the customer through timely advertising.

**Customer service.** High-quality customer service plays an important role in promoting cross-selling of companies' products.

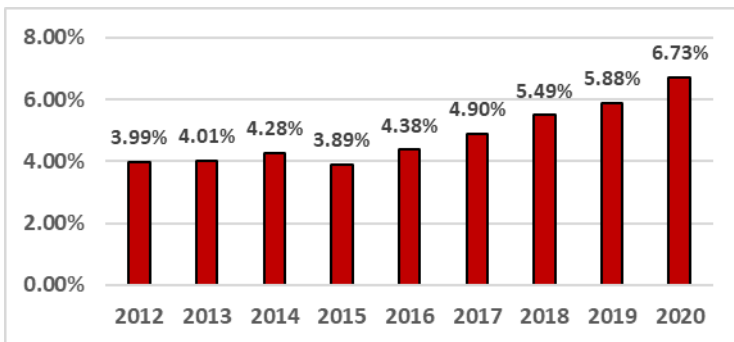
The world's deepest insurance companies by assets are:

- Ping An Insurance (\$ 1251 billion)
- Allianz (\$ 1144 billion)
- Prudential Financial (\$ 915 billion)
- AXA (\$ 903 billion)
- Berkshire Hathaway (\$ 788 billion)
- Metlife Inc. (\$ 768 billion)
- Nippon Life Insurance Company (Nissay) (\$ 765 billion)
- Legal & General Group (\$ 721 billion)
- Japan Post Insurance (\$ 657 billion)
- Munulife Financial (\$ 635 billion)

Prior to the spread of COVID-19, Armenia was making gradual progress in implementing a prudent macroeconomic policy in the business environment. There was rapid economic growth of 6.8% in 2017-2019. During COVID-19, the military conflict with Azerbaijan had a serious impact on almost all sectors of the Armenian economy. In 2020

the country recorded a decline of 7-6% in GDP [3]. In 2020, the gross domestic product of financial and insurance activities at current prices was 415,939,800,000 drams in the case of GDP of 6,183,742,100,000 drams. The real volume index in 2020 was 107-8, and the average value of the real volume index in the last 5 years was 114.96.

The financial and insurance sector plays an important role in the country's gross domestic product of RA (see Figure 1). The share of the latter in GDP in 2020 was 6-7%, yielding to only 5 sectors: construction, real estate activities, wholesale and retail trade, repair of cars and motorcycles, agriculture, forestry, fishing, processing industry. It has registered a significant growth during the last five years.



**Figure 1. The share of financial and insurance activities in GDP of RA [4]**

In contrast to developed countries, where there are many types of insurance, the number of types of insurance in Armenia is relatively small. As a result of the study of the websites of insurance companies operating in the Republic of Armenia, a total of 142 products and services were revealed.

The offered goods-services can be classified as offered for individuals and legal entities. The number of goods and services offered to both individuals and legal entities is equal to 71. Note, that the weights

of these classifications are different in different organizations. For example, INGO ARMENIA Insurance CJSC, NAIRI INSURANCE Insurance LLC, Rosgostrakh - Armenia Insurance CJSC offer more goods and services for individuals, while ARMENIA INSURANCE Insurance LLC, Export Insurance Agency, Armenia More goods and services are offered to legal entities. It should be noted, that organizations often offer the same product-service for both legal entities and individuals. The number of goods and services offered by insurance companies in the above categories are presented in the Table 1.

**Table 1. Products and services offered by insurance companies operating in Armenia**

Company	Quantity of products-services offered	
	individuals	organizations
ARMENIA INSURANCE Insurance LLC	8	14
INGO ARMENIA Insurance CJSC1	14	12
Export Insurance Agency of Armenia ICJSC	0	3
NAIRI INSURANCE LLC	21	14
RESO ICJSC	8	10
Rosgostrakh CJSC	11	6
SIL INSURANCE CJSC	9	12

The volume of the insurance market in the Republic of Armenia in 2020 was equal to 42,830,829,000 drams. decreased by 9.95% compared to 2019. In 2018, the market volume was 69,827,184,000 drams. It is obvious, that in the last two years the market has been declining in terms of volume, in contrast to the gross assets of organizations, which have increased by 4.36%. There are 8 insurance

companies in the Republic of Armenia, below presented from largest to smallest by assets:

- Rosgostrakh - Armenia Insurance CJSC (1,7007,673 thousand AMD)
- INGO ARMENIA Insurance CJSC (15,016,843 thousand AMD)
- ARMENIA INSURANCE insurance LLC (11,701,352 thousand AMD)
- NAIRI INSURANCE Insurance LLC (11,049,503 thousand AMD)
- SIL INSURANCE Insurance CJSC (5,086,104 thousand AMD)
- RESO ICJSC (4,629,134 thousand AMD)
- Export Insurance Agency of Armenia ICJSC (3,556,871 thousand AMD)

For the calculation of profitability indicators, 3 financial indicators were considered: EBIT / revenue, net interest income / revenue and additional indicators to expenses. Market profitability ranges have been constructed by calculating the median for the individual financial indicators of the organizations, the upper-lower quartiles, the maximum-minimum indicators for individual years. In the end, a range was built to get a longer-term picture based on the indicators of the last three years. It should be noted, that such an approach is quite applicable in international practice for calculating the profitability. For example, the market profitability with such an approach is calculated to obtain the range according to the principle of the outstretched hand distance within the framework of transfer pricing, which is the market profitability range.

The market profitability according to the EBIT / revenue index was 2.35%. The lower and upper quartiles were -0.55% and 26.08%, respectively, and the maximum and minimum values were -6.28% and 40.02%, respectively. For comparison in the banking system, the EBIT / income ratio (bottom-up to top-quarter) in 2018 was from 7.40% to 31.50%, where the median is equal to 22.98%. However, in 2019 it was from 18.18% to 31.31%, where the median is equal to 24.08%.

The insurance market EBIT / revenue ratios for each year are presented in the Table 2.

**Table 2. EBIT / revenue figures trends**

Indicator	EBIT/Turnover		
	2020	2019	2018
Maximum	40.02%	10.43%	2.82%
Upper quarter	26.08%	7.87%	2.08%
Media	9.89%	3.08%	-0.23%
Lower quarter	1.03%	0.21%	-2.32%
Minimum	-1.51%	-2.30%	-6.28%

During 2018-2020, the market profitability in terms of net interest income was 1.80%. The lower and upper quartiles were -0.61% and 5.91%, respectively, and the minimum - maximum values were -5.69% and 32.41% correspondingly. For comparison in the banking system the net interest / income ratio (lower quarter to upper quarter) in 2018 was from 42.20% to 60.19%, where the median is equal to 51.72%. However, in 2019 it was from 42.48% to 61.94%, where the median is equal to 52.39%. Net interests revenue / income ratios indicators is presented in Table 3.

**Table 3. Net interest revenue / income ratios trends**

Indicator	Net interest revenue/Income		
	2020	2019	2018
Maximum	32.41%	8.36%	2.02%
Upper quarter	16.23%	6.47%	1.89%
Media	3.95%	2.60%	-0.27%
Lower quarter	0.22%	0.26%	-2.17%
Minimum	-2.13%	-2.44%	-5.69%

During 2018-2020 the profitability of the market in terms of expenditures was 1.83% (see Table 4). The lower and upper quartiles were -0.60% and 6.28%, respectively, and the maximum - minimum values were -5.38% and 47.95% correspondingly. For comparison in the banking system, the surplus to expenses (from the lower quarter to the upper quarter) in 2018 was from 5.14% to 33.70%, where the median is equal to 23.10%. However in 2019 it was from 16.68% to 33.37%, where the median is equal to 22.88%.

**Table 4. *Prise / Expenditure figures for years***

Indicator	Prise / expenditure		
	2020	2019	2018
Maximum	47.95%	9.12%	2.07%
Upper quarter	21.10%	6.93%	1.93%
Media	4.17%	2.68%	-0.27%
Lower quarter	0.24%	0.28%	-2.09%
Minimum	-2.08%	-2.39%	-5.38%

### **Conclusion**

The main factor influencing the world market during the last two years is the KOVID-19 pandemic, which has had different effects on different sub-sectors of the insurance market. The main trends in market development are digitalization, innovation, personalization, customer service. The volume of the insurance market in the Republic of Armenia in 2020 decreased by 9.95% compared to 2019. In this regard, the use of innovative insurance tools is urgent, which will make insurance competitive in the financial transactions and endure force majeure risks.

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**Հարությունյան Լուսինե**  
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**Ռաֆայել Պետրոսյան**  
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## **ՀՀ ԱՊԱՀՈՎԱԳՐԱԿԱՆ ՇՈՒԿԱՅԻ ՎԵՐԼՈՒԾՈՒԹՅՈՒՆ**

**Բանալի բառեր** - ապահովագրություն, ապահովագրական շուկա, շահութաբերություն, ապահովագրատեսակներ, շուկայի վերլուծություն

Հոդվածում ուսումնասիրվել է ՀՀ ապահովագրական շուկան: Կատարվել է համաշխարհային և տեղական ապահովագրական շուկաների ընդհանուր համեմատական վերլուծություն՝ բացահայտելով շուկայի փոփոխման հիմնական միտումները, գնահատելով խոշորագույն խաղացողներին: Բացահայտվել և դասակարգվել են ՀՀ-ում գործող ապահովագրական ընկերությունների կողմից առաջարկվող բոլոր ապահովագրատեսակները: Գործող 142 ապահովագրատեսակները ֆիզիկական և իրավաբանական անձանց համար դասակարգվել են 13 հիմնական խմբի մեջ: Ապահովագրական ընկերությունների ֆինանսական հաշվետվությունների հիման վրա հաշվարկվել են ապահովագրական շուկայի ծավալը, շահութաբերության ցուցանիշները և կառուցվել է շահութաբերության միջակայքը: Շահութաբերության ցուցանիշների և միջակայքերի հաշվարկման համար կիրառվող ֆինանսական գործակիցներն են՝ EBIT/հասույթ, զուտ տոկոսային եկամուտ/հասույթ, ծախսերի նկատմամբ հավելագնի հարա-

բերակցությունները: Որպես շուկայական միջակայք դիտարկվում է առաջին և երրորդ քվարտիլների միջև ընկած միջակայքը:

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## **АНАЛИЗ РЫНКА СТРАХОВАНИЯ РА**

**Ключевые слова** - страхование, страховой рынок, доходность, виды страхования, анализ рынка

В статье исследуется страховой рынок Республики Армения. Сначала был проведен общий анализ мировых и локальных страховых рынков, выявившие основные рыночные тенденции, ключевых игроков рынка и прогнозы. Затем были выявлены и классифицированы все виды страхования, предлагаемые страховыми компаниями, работающими в Республике Армения. 142 существующих вида страхования физических и юридических лиц разделены на 13 основных групп. Наконец, на основании финансовой отчетности страховых компаний были оценены показатели доходности страхового рынка и объем рынка, диапазоны доходности. Финансовые коэффициенты, используемые для расчета коэффициентов рентабельности и рыночных диапазонов, следующие: EBIT / выручка, чистый процентный доход / выручка, наценка на общую стоимость. Диапазон рынка оценивается как диапазон между первым и третьим квартилями.

*Submitted: 16.09.2021*

*Accepted for publication: 15.11.2021*

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## **EFFECT OF REMITTANCES ON ECONOMIC GROWTH**

**Abstract:** There are many factors that influence overall GDP rate either negatively or positively. However, this paper will be mostly concentrated on looking through the relationship of the GDP growth rate and independent variables, that are remittances and the real effective exchange rate. All the variables are in growth rate and in (ln) terms, in order to have a more normalized data set. Through the path of getting the final model many steps were taken. The Dicky Fuller test was applied to all the variables individually, in order to find out whether the data is stationary or not. First ARMA model was created, later on, one by one, more variables were added, meanwhile the significance of all the variables were checked. Overall, we got 3 different models. After thoroughly analyzing each model we came up with the best one.

**Keywords:** GDP growth rate, prediction, remittances, real effective exchange rate

**Research aim:** Construct a statistical model which will show the impact of remittances on the growth of GDP

**Research hypothesis:** H0: Workers remittances have no significant effect on economic growth. H1: There is a significant causal relationship between workers remittances and economic growth.

**Research novelty:** Using various models with the combination of

macroeconomic variable factors (mainly remittances) to find the right pattern for GDP growth prediction and precise influence of the given variables.

### **Introduction**

The remittances are a cash inflow for a country and they affect positively on national income but the empirical evidence and available literature is highly conflicting and conversing on how remittances affect the economic growth. Discussion and research of workers remittances in economies encounter many problems among them availability of quality data for the necessary period of time. This research aims at explaining the relationship between worker's remittances and economic growth only in one country, Armenia. Data is collected from the periods 2004 to 2016 (quarterly). Selection of the period is based on availability of data. The study is based primarily on quarterly time series data collected on the secondary bases. The following sources for data collection are used: World bank database, IMF data and armstat.am. OLS (Ordinary Least Squares) method will be used to implement the analysis of the obtained data. We will conduct different set of diagnostics tests to confirm the assumptions of OLS among them Multicollinearity of the Explanatory Variables, Autocorrelation of the Disturbance terms, Heteroscedasticity of the Disturbance terms and Unit Root Test for Stationarity.

### **Literature review**

The academic research papers describing the relationship between remittances and economic growth are contradicting each other by presenting completely different ideas and results. The main reason for the results' ambiguity is the difference in findings; positive or negative correlation between remittances and GDP.

A proponent of a negative correlation between remittances and economic growth were Abdih, Chami, Montiel, and Dagher (2008) who

wrote a paper called “Remittances and Institutions: Are Remittances a Curse?” [1]. Although the authors assume that remittances represent private income and have a minor influence on the country, the study resulted in an opposite finding. More precisely remittances may influence the quality of the domestic governance by generating moral hazard problem, allowing people to purchase public goods rather than rely on the government to provide those goods. On the contrast, current research will try to fill the gaps by providing evidence of the more direct effect of remittances on the economy, particularly on GDP.

Although the above-mentioned paper came to the exact conclusion, some researches do not have an exact outcome which applies to all cases. For instance, the main finding in the research paper “Remittances, financial development and growth” written by Paola Giuliano and Marta Ruiz-Arranz (2008) is that remittances do have a positive influence on economic growth but mostly in less financially developed (developing) countries [2].

The research done by Giuliano and Ruiz-Arranz (2008), assumes that the impact of remittances is stronger in developing countries [2]. The developing countries get \$307.1 billion of the total worldwide inward remittances, which is accumulated to about 74%. Separately remittances generate on average 27 percent of the developing country’s GDP (World Bank, 2014). The drawback of the research is that it has been focusing only on the relationship between worker remittance and economic growth. However, it is worth emphasizing the fact that economic growth could be impacted by some other variables that indirectly affect remittances.

Another research “Remittances and economic growth in developing countries” conducted by Pradhan, Upadhyay, and Upadhyaya (2015) state that worker’s remittances positively impact the economic growth of the developing country [3]. The dependent variable of the model is the annual percentage growth of GDP per capita. The main conclusion done

by the authors is that remittances have a positive influence on economic growth, but with the moderate significant coefficient. An idea worth mentioning is that although remittances increase the investments of developing countries but simultaneously it causes a scarcity of human resources in the country.

A similar study was done on Armenia and Azerbaijan by Azam and Khan (2011) [4]. The data shows that remittances and economic growth have a significant positive correlation in those two countries. Both specific studies used panel data from 1995 to 2010. We will enlarge the observations by taking the latest data available and finding possible up to date impact of remittances on Armenian economic growth.

### **Background information and Data description**

According to the World Bank's latest Regional Economic Update Migration and Mobility in Europe and Central Asia, Armenia is one of the leaders in Europe and Central Asia in the number of remittances sent to the home country by people migrated abroad [5]. The main flow of remittances is coming from Russia, as it is considered one of the most popular countries for Armenian-migrants. Worker's remittances from Russia to Armenia went up by almost 14.6 percent compared to 2016 [6]. We observed that the trend has fluctuated throughout the years, from 1996 to 2017. Drastic increase and decrease occur through the years 1996 -1998, and 2004-2006. After a decreasing pattern, starting from 2016 it is noticed a slow increase. Remittances in Armenia reached their peak at the beginning of 2014, recording approximately 750 million USD. On the Contrary, the lowest USD amount transferred in Armenia was in 2004, about 99 million. As of 2018, the amount of remittances still is 336.4 million USD, which is a 77.6% increase compared to the first quarter of the year 2018 [7]. The explanatory variables that we will use during the path of prediction are all in growth rates: REER, and Remittances. The quarterly data of Remittances are taken from

data.imf.com and REER are taken from the cba webpage. There is a weak negative correlation between the GDP growth rate and REER and the correlation results between our explanatory variables are also positive but weak, remittances, interestingly recorded a bit high result (0.6), though again not that high to consider it. If we look at Graph 1, we can notice that all our variables fluctuate similarly, the cyclical and seasonal effects are more or less the same (Graph 1) [8].

### **Econometric model and Estimation**

The study develops a model consisting of time series data on real GDP (per capita) and the following variables to analyze the impact of workers' remittances on Armenia's economic growth: workers' remittances, real effective exchange rate. The logarithmic form of variables was used in order to normalize the data.

$$LGDP = \beta_0 + \beta_1 LREMM + \beta_2 LREER + \varepsilon$$

- *LGDP* is the logarithm of real GDP per capita.
- *LREMM* is the logarithm of workers' remittances
- *LREER* is the logarithm of real effective exchange rate
- $\varepsilon$  is the error term which is assumed to be a white noise.

**Modeling steps:** 1. ARMA 2. ARMA + *lremm* 3. ARMA + *lremm* + *lreer*

**Model 1:** The first model that was used to test the preliminary hypothesis was ARMA. The main variable that was regressed was the logarithmic form of GDP. Using Akaike and Schwarz criterions which are used for model selection between finite number of models to estimate the best model. The lowest BIC/AIC is always preferred. According to AIC/BIC the best model is the one with AR(1) and MA(1). AR(1) gives significant coefficient, while MA(1) was insignificant even at 10% significance level. The chosen model is AR(1,3) and MA(1,2,4). The

coefficients are significant for AR lag 1 and 3, while for the error terms only the second lag is significant. We will proceed the analysis by adding our variables one by one.

*Normality* assumption of the model was first checked using Shapiro–Wilk test. According to the output the p value of the test is 0.0527, meaning that we fail to reject the Null hypothesis at 5% significance level, stating that residuals are normally distributed.

The second assumption that is worth checking is the *stability*. For this purpose armaroots was used. If all the roots have modulus less than one and lie inside the unit circle then the estimated Arma model can be considered as stable. According to Graph 2 (see appendix) we can assume that the roots are stable.

*Stationarity* assumption was checked using “Dickey fuller test”. According to which the p value of the test for the first, second and third lags are 0.0907, 0.0881 and 0.2158 respectively. For the first and second lags we fail to reject Null hypothesis at 5% significance level but we reject Null hypothesis at 10% significance level, thus the series is stationary. However, p-value at the lag(3) is more than alpha even at 10% significance level, so we reject Null, at that lag the series is not stationary.

**Model 2:** The second model consisted of the first model adding the logarithm of remittances. Using Akaike and Schwarz criterions the suggested model is not optimal as the coefficients of the lags are insignificant (AR(1), MA(1)). The best model arima lgdp, lremm , ar(1) ma(1,6) was chosen.

According to the “Shapiro-Wilk test” output the p value of the test is 0.05675, meaning that we fail to reject the Null hypothesis at 10% significance level, stating that residuals are normally distributed.

According to Graph 3 (see appendix) we can assume that the roots are stable.



According to “Dickey fuller test” the p values for the remittances data at the lags 1,2,3 are 0.1894, 0.1271, 0.1033 correspondingly, meaning that we fail to reject Null hypothesis even at 10% confidence level, thus the series is not stationary.

Overall the remittances variable is significant and has its influence on the dependent variable, as the p-value is 0.047, which is less than 5% significance level, so we reject the Null. For each percent increase in the remittances level, the GDP growth rate will increase by 0.260%. Thus this variable influences the dependent variable and overall the model positively.

The *normality* assumption was met, however the series is not stationary.

**Model 3:** In the third model we added logarithm of real effective exchange rate to the preliminary model 2. Using Akaike and Schwarz criterions the suggested model is again the arma(1,1), and it results in not significant coefficients. The best model is the arima lgdp lreem lreer, ar(1) ma(1,6), where all the p-values for all the variables are less than alpha at 5% significance level, so we prefer this model.

According to the “Shapiro-Wilk test” output the p value of the test is 0.95855, meaning that we fail to reject the Null hypothesis stating that residuals are normally distributed.

According to Graph 4 (see appendix) we can assume that the roots are stable.

According to “Dickey fuller test” the p value of the test for the lag(1), lag(2), lag(3) are 0.0009, 0.0115 and 0.0311, meaning that we reject Null hypothesis even at 5% significance level and conclude that the series is stationary.

Surprisingly, adding a real effective exchange rate to the third model made it both normally distributed and stationary. It is worth mentioning that the effect on logarithmic form of remittances was small. The

coefficient increased from 0.255 to 0.260 (still significant). The REER influences our dependent variable negatively. In other words, 1% increase in REER will result in a decrease of overall GDP by 0.244%. The variable is significant, as we reject the Null at 10% significance level (p-value = 0.0899).

### **Conclusion**

In this paper we tried to find out a new, not yet observed model about Armenian economy. Due to this study and research we discovered that remittances have a positive impact on economic growth. As shown in literature review section and in accordance with international studies, this research has shown that remittances and real effective exchange rate have a positive and statistically significant effect on economic growth in Armenia. It is worth mentioning that the finalized model includes all significant variables proposed. Overall, we reject our initially proposed Null Hypothesis and conclude that remittances do have their influence on GDP growth rate.

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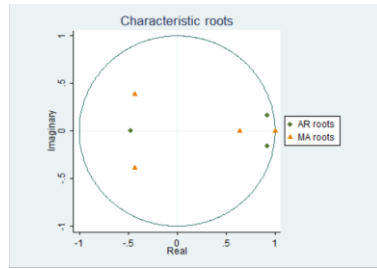
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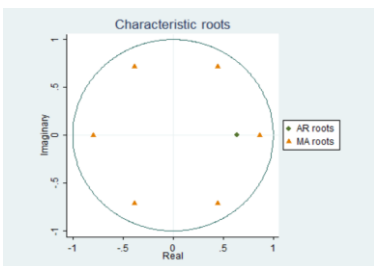
## Appendix



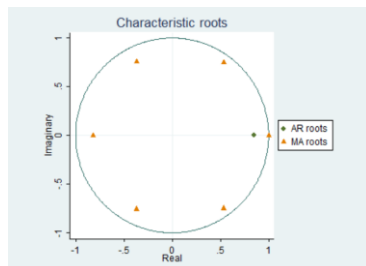
**Graph 1: The Plot of The Variables**



**Graph 2: Armaroots for Model 1**



**Graph 3: Armaroots for Model 2**



**Graph 4: Armaroots for Model 3**

**Հրանտ Դավթյան**  
տ.գ.թ., Լոնդոնի Համալսարանական Քոլեջ, մագիստրոս

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տնտեսագիտության բակալավր, Հայաստանի Ամերիկյան  
Համալսարան

## **ՏՐԱՆՍՖԵՐՆԵՐԻ ԱԶԴԵՑՈՒԹՅՈՒՆԸ ՏՆՏԵՍԱԿԱՆ ԱՃԻ ՎՐԱ**

**Բանալի բառեր** - ՀՆԱ-ի աճի տեմպ, կանխատեսում, տրանսֆերներ, իրական արդյունավետ փոխարժեքի դրույքաչափ

Համաշխարհային բանկի տվյալներով՝ մեր երկիր ուղարկված տրանսֆերների քանակով Հայաստանը Եվրոպայում և Կենտրոնական Ասիայում առաջատարներից մեկն է:

Աշխատանքի նպատակն է հետազոտել տրանսֆերների և լրացուցիչ փոփոխականների ազդեցությունը Հայաստանի տնտեսական աճի վրա: Հետազոտությունը ցույց տվեց, որ դրամական փոխանցումներն ու իրական արդյունավետ փոխարժեքի դրույքաչափը վիճակագրորեն դրականորեն են ազդում տնտեսական աճի վրա:

Արդյունքում, մենք պարզում ենք, որ տրանսֆերներն էականորեն ազդում են ՀՆԱ-ի աճի վրա:

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## **ВЛИЯНИЕ ДЕНЕЖНЫХ ПЕРЕВОДОВ НА ЭКОНОМИЧЕСКИЙ РОСТ**

**Ключевые слова** - темп роста ВВП, прогноз, денежные переводы, реальный эффективный обменный курс

По данным Всемирного Банка, Армения находится на первых рядах в Европе и Центральной Азии по количеству денежных переводов, отправленных в родную страну. Цель данной статьи - исследовать влияние денежных переводов и дополнительных переменных на экономический рост Армении. Исследование показывает, что денежные переводы и реальный эффективный обменный курс оказывают положительное статистически значимое влияние на экономический рост.

В результате мы заключаем, что денежные переводы действительно оказывают значительное влияние на темпы роста ВВП.

*Submitted: 27.09.2021*

*Accepted for publication: 15.11.2021*

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## **VIRTUAL ECONOMIC LIFESTYLE PECULIARITIES IN SOCIAL NETWORKS. CASE STUDY: CONSUMPTION OF WHATSAPP**

**Abstract:** Social networking is currently the most popular online activity among consumers around the world. Today, almost every brand has an official page on well-known social networking platforms such as Facebook and Twitter, Instagram, etc. Therefore, taking advantage of the opportunities arising from this new media requires a deeper knowledge of how consumers decision online engagement with different types of media and what they ultimately bring to the brand. This study uses utilization and satisfaction theory to examine the factors influencing online customer engagement on social networking sites to explain why people participate in these media.

**Keywords:** virtual lifestyle, social networks, WhatsApp, social harms

**JEL classification:** M3

**Research aim:** the research seeks to answer these questions; can the content characteristics of social media advertising affect online engagement and participation of consumers? And when these content characteristics are influenced by the positive attitude of consumers, does the level of online consumer engagement increase or not?

**Research novelty:** There is a positive relationship between the liveliness of advertising and consumer online engagement participation.

### **Introduction**

Since the beginning of the last century, virtual social media, which is considered as a kind of web, has always been one of the most attractive and popular types of basic internet media in Alexa ranking; This

popularity is such that in 2013, seven of the top ten websites in the world in the Alexa list are seven social networking websites [1]. Social networks are one of the most influential new communication technologies that have affected all aspects of individual and collective life of users.

Social networks are a new generation of sites that are the focus of users of global Internet networks these days. Such databases operate on the basis of online organizations, and each brings together a group of Internet users with a specific feature. Social networks are considered as a type of media that have made it possible to achieve a new form of communication and content sharing on the Internet. In the present age, the expansion of the Internet space has created a new form of social interaction called virtual social networks. The increasing, rapid and widespread acceptance of users of these mass media, even among Iranian users, is undeniable despite the limitations in cyberspace [2].

Virtual social networks in Iran, especially among young people, are expanding. Therefore, having an estimate of the penetration of these networks and examining their activity, as well as examining the ethical and identity space of these networks in order to assess the situation and try to provide a solution to minimize the problems caused by the use of these networks is essential. It seems [3]. Today, virtual social networking programs have spread in the community among all people, especially the younger generation. These networks are both beneficial and harmful, in order to reduce the harms and threats of these networks, it is necessary to conduct research in this regard, which will lead to a better understanding of this space.

With the increasing growth of technology and transnational media such as Internet, satellite and mobile phones and increasing the number of users of these modern media, the need to study their impact on human life is one of the important categories [4]. From this perspective, the concept of lifestyle, which is the basis of the main form of individual and group life of human beings, has a great impact on how these

networks are used. In this way, different lifestyles cause differences in human behavior, and this difference applies to the use of virtual social networks. Therefore, by researching through lifestyles, we can find out what effects lifestyle variables have on the use and content consumption of these networks. This knowledge also helps us to make culturally and socially positive changes in the lifestyles of people in the community so that their consumption of virtual social networks is conscious, healthy and accompanied by social and moral security. In general, the main purpose of this study is to investigate the relationship between lifestyle variables with usage and content consumption of WhatsApp - one of the most widely used virtual social networks.

### **Theoretical Framework**

The use of virtual social networks has grown very rapidly in recent years and its influence in society has greatly expanded. From this perspective, scientific research is necessary to better understand these networks. Due to this issue, the main purpose of this study is to investigate the relationship between lifestyle variables with the use and content consumption of WhatsApp. The statistical population of the study is students of Shahrekord University of Medical Sciences. The sample size according to Cochran's formula is 323. The sampling method was multi-stage cluster sampling. The results show that WhatsApp has the highest correlation with economic capital and cultural capital variables. Lifestyle variables also revealed the dimensions of WhatsApp consumption with respect to different contexts and, more broadly, relationships.

Perhaps it can be said that the modern lifestyle is the form of dignity grouping that Max Weber wants. The modernity of this type of grouping lies, in part, in the fact that status is not granted through group membership or on the basis of similar occupations of the group, or even on the basis of the privileges generally available to members, which is



not the case. It is due to the quality of social activists' use of the resources and privileges they have. It is on this basis that lifestyles are usually considered based on the social organization of consumption or on normative and regulated attitudes related to consumption, something that market researchers and researchers had realized before sociologists [5].

Bourdieu's theory seems to be a good framework for analyzing issues related to lifestyle and consumption, and this is more than anything else, perhaps because of the strong theoretical foundation that has clear concepts, assumptions and clear propositions, as well as Bourdieu's own efforts. For their experimental test, which has been shown well in the book of distinction (1984) and has provided a wide field for further research [6].

Bourdieu's sociology has many suggestions for studying technology for two reasons. First because of the recent place of technology in sociological knowledge; And second, because Bourdieu's distinctive approach to social thinking can help technology researchers solve some recurring socio-theoretical problems. Technologies are related to habits and practices. Sometimes technology is shaped by habits and practices; Sometimes it is promoted with them. Human actions shape technology, and so technologies may in turn shape human actions. These actions include certain tendencies, certain physical manners, and specific ways of doing things. An examination of Bourdieu's approach to technology, especially his conception of habit, has led to his general view of the organization of social action.

Bourdieu analyzes the two concepts of habit and field of social action through the interrelationship. Habitual, which includes the tastes and tastes of individuals, the factor dimension of social action is colorful and emphasized. In contrast, the field contains pre-existing and emerging structures, which include a variety of capital owned by individuals. Bourdieu, by his habitual concepts of square and their internal

components, distinguishes classes and sub-classes and depicts a multifaceted structure of society. In general, the habit that is formed based on the material conditions of life is the habit that determines the fate of the person in the future. In general, this framework helps us to better understand how to use virtual social networks with our multifaceted structure.

**Artistic taste:** Artistic taste means the tendency to consume certain items of art products; Which is measured at three levels of literary, cinematic and musical taste. Artistic taste was assessed through six open-ended questions. For the reliability of this index, references to the works of Chavoshian, Mostafavi and Rahmati and Moradi have been used. By summing the scores of literary, cinematic and musical tastes, a variable is obtained at the sequential level.

**Economic capital:** This capital includes the ownership of material or financial wealth. Economic capital is measured by three indicators: income, house price and car price.

**Cultural capital:** "The degree of individuality in cultural practices that certain societies recognize as legitimate and have three aspects embodied (long-term intellectual and physical characteristics), objectified (ownership of cultural goods) and institutional." This variable is measured by questions about popular readers, popular books, watching movies and gaining information, number of study hours per week, number of extracurricular books, cultural goods, and parental education.

### **Management indicator**

To examine the causal relationships and estimate the conceptual model, we used structured equation modeling (SEM). SEM has changed the nature of research in international marketing and management. It is a statistical technique for testing and estimating causal relationships using a combination of statistical data and qualitative causal assumptions. The use of Partial Least Squares (PLS) is suitable and was considered the

most appropriate method due to: (a) the early stage of theoretical development; (b) this conceptual model has not been tested in the literature and; (c) the conceptual model is considered to be complex. In the next two subsections we firstly examine the measurement model in order to assess indicator reliability, construct reliability, convergent validity, and discriminant validity. Secondly, we test the structural model. The software used for applying the method was PLS Smart 3.0 Software.

### **Measurement model**

Firstly, in order to analyse the indicator reliability, the loadings should be higher than 0.7 . All the items have loadings  $> 0.7$ , confirming that the indicator reliability is achieved. Secondly, two criteria were used to examine the construct's reliability – Cronbach's alpha (CA) and composite reliability (CR). all constructs have CR and CA  $> 0.7$ , approving construct reliability. Thirdly, in order to assess convergent validity, the average variance extracted (AVE) should be at least 0.5 to be considered sufficient and explain more than half of the variance of its indicators on average. AVE for all the constructs are above 0.5, guaranteeing convergent validity. Finally, the discriminant validity has three criteria. The first criterion is the Fornell-Larcker criterion, which demands that the root square of AVE for each latent variable should be greater than the correlation with any other latent variable. In Table 4, we see that these criteria are achieved. The second criterion, the loading of each indicator is expected to be greater than all of its cross-loadings. This was also analyzed and each construct has loadings with higher values than their cross loadings this result is available from the author upon request. The Heterotrait-Monotrait ratio (HTMT) table is available upon request, and all values are below the threshold of 0.9. Therefore, all the measures satisfy the discriminant validity of the constructs. The assessment of the construct reliability, convergent validity and indicator

reliability, produce satisfactory results, indicating that the constructs can be used to test the conceptual model.

### **Research Methods**

Descriptive-inferential statistics methods are used for analyzing research data. In the descriptive statistics, the researcher, in fact, collects, summarizes the quantitative information, the samples, and describes the characteristics of the sample studied. Using inferential statistics, the results of the sample are generalized to the entire statistical population; the research without it lacks scientific validity. Structural equation modeling is used to investigate research hypotheses. Structural Equation Modeling (SEM) is a highly generalized, robust, multivariate regression family of techniques that is expressed in combination - factor analysis - path analysis - more precisely the general linear model extension that allows the researcher. Test a set of regression equations simultaneously. In this research, structural equation modeling is done by Smart PLS 3 software; and comparisons of mean variables; variable factor exploration factor analysis with SPSS 25 software.

### **Sampling Method**

The sampling method is non-random according to the characteristics of the community. In this way, the researcher will be provided with a sufficient number; to calculate the number of required questionnaires; to the individuals; availability; Morgan table was used to calculate the sample considering the indeterminacy of the statistical population and 384 samples were determined. In order to be more reliable, 400 questionnaires were distributed out of which 385 were collected correctly.

### **Validity**

Since the main tool of this questionnaire research should be the questionnaires used, they were self - standardized, but in order to

ensure more; the validity of the measurement tool; the interview; Is. Content validity was used to check the validity of the questionnaire.

### **Reliability**

One of the ways to measure reliability is to measure its internal consistency. One of the most commonly used measurement tools for measuring internal consistency that is used most of the research is the Cronbach's alpha coefficient, which is the most important method for ranking scales (Table 1).

*Table 1. Cronbach's alpha coefficient of variables*

<b>Rows</b>	<b>Variables</b>	<b>Cronbach's alpha coefficients</b>	<b>Number of questions</b>
1	Cultural capital	0.76	<b>5</b>
2	Economic capital	0.77	<b>6</b>
3	Artistic taste	0.75	<b>6</b>
8	Total question	0.79	<b>17</b>

Given that the required minimum reliability coefficient is 0.7. As the above table values for the structures under study indicate, the research instrument has an acceptable reliability.

### **Descriptive analysis of research**

Findings of the study indicate that 90.66% of the subjects are female; 9.34% are male. It is indicated that 15.8% of the sample were less than 25 years of age, 12.5% 25 to 30 years, 28.6% 31 to 35 years, 28.3% 36 to 40 years; 14% are over 40 years of age. Findings of the study indicate that 36.9% of the subjects in the study had a lower degree; diploma; 18.7%; diploma; post-diploma; 15.8%are doctors.

### **Descriptive analysis**

In this section, the mean and standard deviation of the analysis of each of the main variables of the study are presented in table. As can be

seen, the mean and standard deviation of each of the current variables of the research (Table 2) is shown.

**Table 2. Descriptive indicators of current variables;**

<b>Variable</b>	<b>S.D</b>	<b>Mean</b>
Cultural capital	0.781	<b>3.65</b>
Economic capital	0.877	<b>3.31</b>
Artistic taste	0.865	<b>3.81</b>

In order to use parametric tests to analyze research data, these data must have the normality of the distribution of variables assumed to be analyzed using the K-S test (Table 3). Since if the significance level is greater than 0.05 indicates that the data are normal and given the significance level.

**Table 3: K-S test results**

<b>Variable</b>	<b>Cultural capital</b>	<b>Economic capital</b>	<b>Artistic taste</b>
K-S test	3.214	3.132	<b>3.651</b>
Sig	0.135	0.167	<b>0.159</b>

Before examining the validity of the hypotheses, it is necessary to test the correlation between the research variables. As can be seen (Table 4), the results of correlation analysis showed that there is a significant positive correlation between all variables. The significant side to all of these correlations is the high level (99% confidence level), which is also important to consider.

**Table 4. Correlation between research variables**

<b>Variable</b>	<b>Cultural capital</b>	<b>Economic capital</b>	<b>Artistic taste</b>
Cultural capital	1		
Economic capital	0.53	1	
Artistic taste	0.51	0.65	<b>1</b>

In this study, a hypothetical model based on the research background was designed to investigate the effects of exogenous-endogenous variables that are presented in the first chapter. The first chapter hypotheses also suggest causal relationships between the variables in the model. In this research, the hypotheses are examined simultaneously. In order to evaluate the hypothetical model of this research, the parameter estimation is first investigated using the maximum likelihood method. Estimated parameters include "impact factors". Following the structural model of the research, standard estimation mode and significance coefficients will be discussed. The structural model of this research is a standard estimation mode, which, based on the theoretical framework of the research, reveals the relationships between the research variables. This graph shows the beta coefficients for each of the three structural model paths. The rejection or confirmation of each of the hypotheses depends on comparing the statistical significance obtained for each path, the standard mode of estimation, with the value of t calculated for it, the state of the significant coefficients. The results show the structural equation model needed to test the hypotheses (Table 5).

**Table 5. Results of the Hypotheses**

<b>Hypotheses</b>	<b>T - value</b>	<b>P_ value</b>	<b>Result</b>
1. There is a significant relationship between the use of WhatsApp program and artistic taste.	1.27	0.235	<b>Reject</b>
2. There is a significant relationship between the use of WhatsApp program and economic capital.	5.21	0.000	<b>Accept</b>
3. There is a significant relationship between the use of WhatsApp program	3.61	0.000	<b>Accept</b>

and cultural capital.			
4. There is a significant relationship between WhatsApp content consumption and artistic taste.	3.91	0.000	<b>Accept</b>
5. There is a significant relationship between WhatsApp content consumption and economic capital.	2.97	0.000	<b>Accept</b>
6. There is a significant relationship between WhatsApp consumption content and cultural capital.	5.02	0.000	<b>Accept</b>

### **Results and Suggestions**

According to the results of Table 5, there is a positive correlation between the variable of cultural capital and the variables of WhatsApp usage, entertainment content, joke content and online friendship content. That is, we expect the amount of these variables to increase as the amount of cultural capital variable increases. The intensity of the relationships is weak and the relationship between the variables of WhatsApp usage and entertainment content with 99% confidence and the variables of jokes content and Internet friendship content with 95% confidence. These results confirm the third and sixth hypotheses.

There is a positive correlation between the variables of economic capital with the variables of WhatsApp usage, entertainment content, sexual content, joke content and online friendship content. That is, we expect the amount of these variables to increase as the amount of economic capital variables increases. The intensity of relationships is weak and the relationship between the variables of WhatsApp usage, entertainment content and sexual content is 99% certain. Also the variables of joke content and internet friendship content are with 95% confidence. These results confirm the second and fifth hypotheses.



The variable of artistic taste has a positive relationship only with the variable of the content of everyday issues. That is, as the score of artistic taste increases, the content score of everyday issues is expected to increase. The intensity of the relationship is weak and with 99% confidence. This result confirms the fourth hypothesis; And rejects the first hypothesis.

Considering the consumption of all students using the WhatsApp program, out of a total of 400 respondents to this study, only 400 people used this program. In other words, the penetration rate of using this in the statistical population is 73.68%. In the statistical analysis of the present study and other studies, we see that the contents that have a significant relationship with the use of various types of virtual social networks are more than social harms. This indicates that the harm dimension of social media consumption in the statistical population is more colorful than its normal consumption. Also, the test of the relationships of independent variables with different contents in this study shows us that the users of these programs do not make any significant use of informative content, news and information, and everyday issues; And their uses are mostly recreational, sexual, and generally traumatic. In addition, the degree of correlation between economic capital (0.18) and cultural capital (0.14) indices of the main independent research variable (lifestyle) with the use of WhatsApp research dependent variable further confirms that the use of the network Virtual social networks are mostly harmful; Because the lowest correlation has the cultural capital index. According to Bourdieu, cultural capital allows people to have a subtle and meticulous view of issues, especially in the field of consumption.

That is, the higher the cultural capital of individuals, the richer and more meaningful the content of their consumption. To achieve this goal, it is necessary to enrich cultural activities in this field. In general, lifestyle variables revealed to us the dimensions of WhatsApp consumption

according to different contexts, and together showed a broader relationship.

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## ՎԻՐՏՈՒԱԼ ՏՆՏԵՍԱԿԱՆ ԱՊՐԵԼԱՈՃԻ ԱՌԱՆՁՆԱՀԱՏ- ԿՈՒԹՅՈՒՆՆԵՐԸ ՍՈՑԻԱԼԱԿԱՆ ՑԱՆՑԵՐՈՒՄ

**Բանալի բառեր** - վիրտուալ ապրելաոճ, սոցիալական ցանցեր, WhatsApp, սոցիալական վնասներ

Սոցիալական ցանցը ներկայումս ամենատարածված մարքեթինգային գործիքն է սպառողների շրջանում: Այսօր գրեթե յուրաքանչյուր ապրանքանիշ ունի պաշտոնական էջ, հայտնի է սոցիալական ցանցային հարթակներում, ինչպիսիք են՝ Facebook-ը, Twitter-ը, Instagram-ը և այլն: Հետևաբար, այս նոր լրատվամիջոցներից բխող հնարավորություններից օգտվելը պահանջում է ավելի խորը գիտելիքներ այն մասին, թե ինչպես են սպառողները որոշում ինտերնետային լրատվամիջոցների տեսակները և այն, թե ինչպես են նրանք ի վերջո նպաստում ապրանքանիշի զարգացմանը: Այս ուսումնասիրությունը հիմնվում է սպառման և բավարարվածության տեսության վրա սոցիալական ցանցերում հաճախորդների առցանց ներգրավվածության վրա ազդող գործոնները պարզելու համար: Նաև հետազոտությունում բացահայտվում են, թե ի՞նչ գործոններ են ազդում առցանց համակարգում գնորդների ներգրավվածության որոշումների կայացման վրա:

## ОСОБЕННОСТИ ЭКОНОМИЧЕСКОГО ВИРТУАЛЬНОГО ОБРАЗА ЖИЗНИ В СОЦИАЛЬНЫХ СЕТЯХ

**Ключевые слова** - виртуальный образ жизни, социальные сети, WhatsApp, социальный вред

Социальные сети в настоящее время являются самым популярным маркетинговым инструментом среди потребителей. Сегодня почти у каждого бренда есть официальная страница в популярных социальных сетях, таких как Facebook, Twitter, Instagram и т. д. Следовательно, использование этих новых средств массовой информации требует более глубокого понимания того, как потребители выбирают типы онлайн-СМИ, и как они в конечном итоге способствуют развитию бренда. Это исследование основано на теории удовлетворения и потребления, чтобы определить факторы, влияющие на онлайн – взаимодействие клиентов в социальных сетях. Исследование также анализирует факторы, влияющие на процесс принятия решений при участии клиентов в онлайн-торговле.

*Submitted: 05.10.2021*

*Accepted for publication: 15.11.2021*

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## **INVESTMENT PLANNING METHODS AND INSTRUMENTS IN THE RA TELECOMMUNICATIONS AND IT**

**Abstract:** In market conditions, the main economic task of every enterprise is to ensure competitiveness. In addition, the prospective economic development dictates the need for a sufficient level of competitiveness in the financial markets, ie acceptable conditions for access to external sources of operational and investment financing. At the same time, in the field of telecommunications of the RA economy, there is a contradiction between the real need to update the material and technical base, the financing of investment activities aimed at its development, and the available sources of own financial resources. One of the reasons for this situation is the lack of an effective investment management system, based on modern methodological principles, using the latest technologies and enterprise management tools. All this predetermines the urgency of the scientific substantiation of new methodological approaches to the management of investment activities of enterprises, which are equivalent to their current financial and economic conditions.

**Keywords:** Investment activities, methodology, telecommunications, competitiveness, planning, efficiency

**JEL classification:** D24, D41

**Research aim:** is the invention of effective ways of investing in the field of telecommunications.

**Research hypothesis:** Investments in the current stage of economic development are mostly inefficient if they do not targeted to innovative directions.

**Research novelty:** In process of investing in telecommunications, the priority is not a payback costs, but to achievement the competitive position of companies, providing services through innovative programs.

## Introduction

The sustainable development, expansion, differentiation of any activity due to the acquisition of new spheres of activity, constantly requires investments - long-term expenditure of financial, labor, material resources in order to increase savings and make a profit. The telecommunications sector is one of the key sectors of each country's economy, it is of great importance in terms of increasing the country's competitiveness, provides the greatest possible value, is a dynamically developing sector - one of the most important areas of any country's IT, science and technology development.

In the ranking of technological readiness index, Armenia has improved its position from the list of backward (100-150) countries, moving to the list of countries with medium competitiveness (50-99) [1]. According to the "Global Innovation Index 2020" report, Armenia has improved its position by 3 places, ranking 61st among 131 countries [2].

The regulation of the RA telecommunication sphere has been carried out since 2006 in accordance with the RA Law on Electronic Communications [3]. One of the aims of the mentioned law is to encourage economically efficient investments in infrastructure, to use the latter for the provision of electronic communications services, to promote the introduction of modern technologies, and to increase the range of services.

Judging by the indicators of the telecommunications sector, it can be concluded that it is dynamically developing. In particular, in 2006 there

was 1 mobile operator in the sphere with monopoly rights. Currently, there are 3 mobile operators, 12 fixed telephony operators, about 182 operators of public electronic communication network, which provide Internet access services.

In 2006, 1 normative legal act was related to the regulation of the sphere. At present that number reaches about 170.

In terms of mandatory payments for the use and use of radio frequencies, no access to the state budget was provided until 2006, and in 2006-2007, 1.1 billion drams was provided to the RA state budget.

At present, about 7 billion AMD annually is provided to the RA state budget in terms of mandatory payments for the use and use of radio frequencies, moreover, in 2006-2020. About 91 billion AMD was provided to the RA state budget during the year.

The rapid growth of the world economy over the last decade is due to the innovations made as a result of investments in information technology, their application in various industries. The intend of the research is to implement investment planning in the telecommunications sector of the Republic of Armenia in the form of analytical research, which is aimed at determining the demand for investment resources, revealing possible sources of funding.

### **Research results**

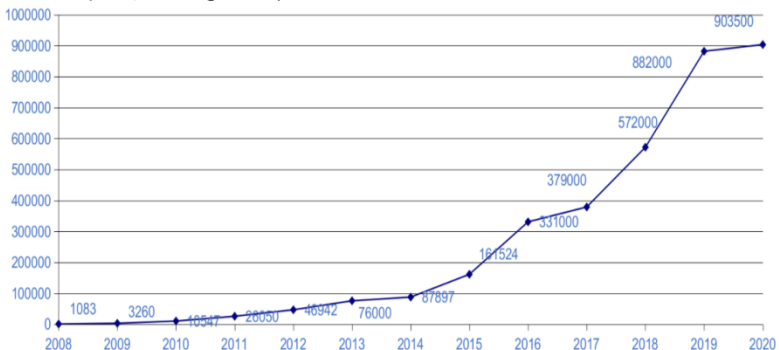
One of the strategic branches for each country is IT telecommunication, which plays a great role in the balanced development of the global national economy. It is a link between "consumers" in the industrial and service sectors, as well as "economic centers" in geographically remote areas. Modern methods of telecommunications are becoming a necessary condition for social inclusion and cultural development. Telecommunications also plays an important role in the manufacturing sector, not only by servicing it, but also by indirectly engaging in manufacturing through business process automation.

Therefore, any disruption in the field of communication will lead to distraction of production activities, which in turn will reduce the rate of economic development.

During the last 10 years, investments of about 380 billion AMD have been made in the sphere of telecommunications of the Republic of Armenia. 2019 The annual revenue from telecommunications services amounted to about 147 billion drams (\$ 306 million), which is about 2.2% of Armenia's GDP.

According to Statistical Classifier of Economic Activities of the European Union, there are 33 companies in the field of telecommunications in Armenia, which are classified as web portals of companies providing services related to wired telecommunications services, wireless telecommunications services, other telecommunications services among companies. The main services provided by these companies include mobile and landline, cable wireless internet, IT infrastructure (for example, web hosting) u VoIP services. Telecommunications companies provide services mainly in the domestic market.

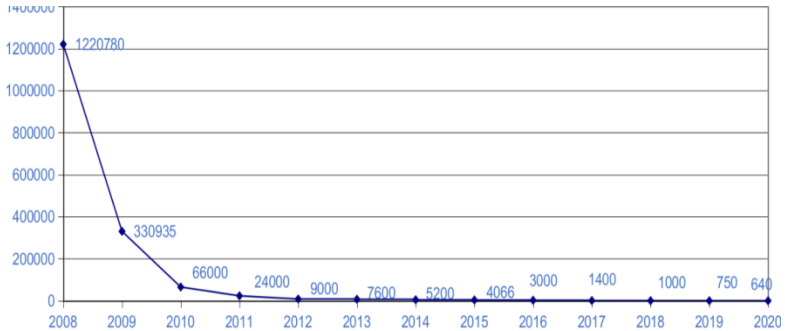
As of October 1, 2020, there are four companies providing international transit IP flows with nine channels, and the bandwidth is 903500 Mbps. (see Figure 1)



**Figure 1. International IP Transit Service Flow Streams 2008-2020 (Mbps)**



In 2006, the cost of 1 Mbps of international transit IP flows in Armenia was 5,461,600 drams. As of October 1, 2020, the cost of 1 Mbps is 640 AMD (see Figure 2).



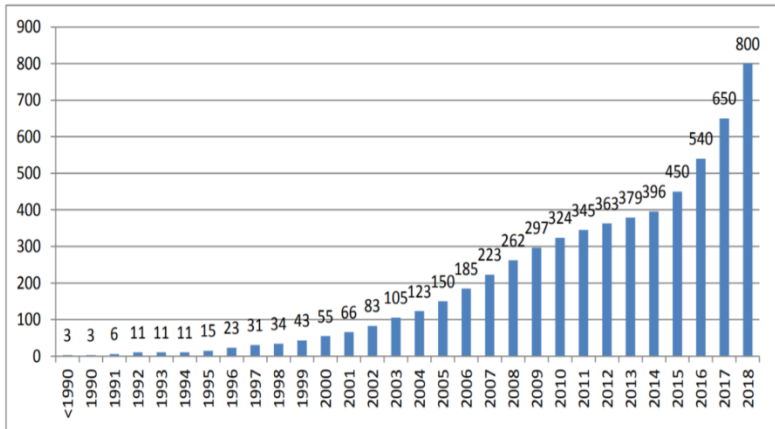
**Figure 2. Dynamics of international IP transit service tariffs for 2008-2020 (1 Mbps / AMD) in Armenia**

Being a favorable country for foreign direct investment in the ICT sector (regardless of the force majeure situation in the country), Armenia has the following competitive advantages over other countries in the region.

- Ability to carry out IPC work in accordance with international standards in the fields of engineering, informatics, physics and mathematics;
- Highly qualified specialists with technical skills and knowledge of foreign languages;
- Basic university programs with other related IT specialties;
- Competitive & cheap labor & low operating costs;
- Tangible support provided by the state to the sector & willingness to improve the investment field;
- Sustainable and continuous development of the IT sector;

- Extensive experience of cooperation with large transnational companies;
- Legal framework that meets the best international standards for the protection of intellectual property.

Armenia's software services sector is quite young . Most of the companies, almost 95%, were founded in 2000-2018.



**Figure 3. Total number of ICT companies in RA [4]**

In 2018, in RA the number of active ICT companies reached almost 800, providing an unprecedented 23% growth compared to 2017. The share of local companies in those companies is 52.5%. 2008-2018 On average, about 53.8 ICT enterprises were established annually. For comparison, in the 1990s that figure was only 5-6 companies a year. In 2018, the number of active companies has increased by about 150.

The creation of such a large number of companies is conditioned by the implementation of a legislative package, aimed at the state support of the ICT sector, which provides tax benefits for start-up companies, as well as support for multilateral infrastructure, financial and other areas.

There are 36 companies in the field of telecommunications in Armenia, which classified as wired telecommunications system services,

wireless systems services, companies providing other telecommunication services, companies operating on web portals. The main services provided by these companies include mobile, fixed communication, cable, wireless internet, IT infrastructure (for example web hosting) and VoIP services. It should be noted that companies operating in the field of telecommunications provide their services mainly for the domestic market. The revenues from mobile services have the largest share in the revenues of the RA telecommunications sector.

The telecommunications sector in Armenia is lagging behind the global resurgence trends. In Armenia, mobile operators are investing in related sectors to diversify their revenue sources. Investments are made, in particular, in the spheres of mobile internet sales of mobile equipment and accessories, the average annual growth rate of which in Armenia is 20% and 46%, respectively. The Armenian mobile operators had the opportunity to stop the negative growth trend of the sphere in Armenia. For example, Ucom invests in technology education in Armenia. The operator has set up a digital laboratory in one of the private schools for students in grades 3-10 to help them gain knowledge in the areas of programming and artificial intelligence, combining computer technology and art.

Thus, the introduction of investment planning methods and tools in the field of telecommunications of the Republic of Armenia is a potential problem, proceeding from the peculiarities of the field, its primary importance for our country. Today, automated organizational and financial planning methods and criteria for evaluating the effectiveness of investment projects are used in all economically developed countries.

The 21<sup>st</sup> century is a stage of technological development. New and interesting products and services are created. The market is expanding, information is spreading faster. In order to remain competitive in the world market, organizations and countries must exercise flexibility externally, strive to keep pace with the demands of the time and develop.

When we talk about continuous improvement and development, we mean innovations that require investments.

### **Conclusion**

Considering the different definitions of investments, we conclude, that its purpose is innovation, and the key point of the latter is the implementation of the idea, which will contribute to changes in the organization internal and external environment, creating new value for both the organization and customers. Investing in innovation helps to increase profits, which ensures the organization is competitive in the market, many innovative projects also create scientific results. Economically developed countries currently provide most of their GDP growth by investing in innovation and technological advancement. Since the 70s of the last century, the main circle of developed countries has been formed, which are distinguished by the growth of the global index of competitiveness, human-scientific potential. The use of ICT also plays an important role in the innovation index. It is also closely related to the country's technological readiness index, so the improvement of its sub-items will contribute to the creation and introduction of new technologies.

As it turned out, the development of the telecommunications sector is not successful in all countries, which is due to the need for large-scale investments, potential markets that provide for them repurchase, as well as a certain potential in the field of science and technology and a favorable business environment. In addition, they impose strict requirements on the technological competitiveness and experience of the companies involved in the sector, as these markets are rapidly changing in terms of product structure, and the industries are characterized by a large number of factors that cause change. It is noteworthy that under the influence of these factors, fundamental changes in the structure of

consumer preferences in the telecommunications sector affect the strategic position of telecommunications companies.

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Մագիստրոս, ՀԱՀ

## ՆԵՐԴՐՈՒՄԱՅԻՆ ԳՈՐԾՈՒՆԵՈՒԹՅԱՆ ՊԼԱՆԱՎՈՐՄԱՆ ՄԵԹՈԴՆԵՐՆ ՈՒ ԳՈՐԾԻՔԱԿԱԶՄԸ ՀՀ ՀԵՌԱՀԱՂՈՐԴԱԿՑՈՒԹՅԱՆ ԵՎ ՏՏ ՈԼՈՐՏՈՒՄ

**Բանալի բառեր** - ներդրումային գործունեություն, մեթոդաբանություն, հեռահաղորդակցություն, մրցունակություն, պլանավորում, արդյունավետություն

Շուկայի պայմաններում յուրաքանչյուր ձեռնարկության հիմնական տնտեսական խնդիրը մրցունակության ապահովումն է: Բացի այդ, հեռանկարային տնտեսական զարգացումը թելադրում է ֆինանսական շուկաներում մրցունակության բավարար մակարդակի, այսինքն՝ գործառնական և ներդրումային գործունեության ֆինանսավորման արտաքին աղբյուրներ մուտքի համար ընդունելի պայմանների անհրաժեշտություն: Միաժամանակ, ՀՀ տնտեսության հեռահաղորդակցության ոլորտում առկա է հակասություն նյութատեխնիկական բազայի զարգացմանն ուղղված ներդրումային գործունեության ֆինանսավորման իրական անհրաժեշտության և սեփական ֆինանսական ռեսուրսների աղբյուրների միջև: Պատճառներից մեկը ֆինանսական և ներդրումների արդյունավետ կառավարման համակարգի բացակայությունն է, որը հիմնված է ժամանակակից մեթոդաբանական սկզբունքների վրա և օգտագործում է նորագույն տեխնոլոգիաներ ու կառավարման գործիքներ: Այս ամենը կանխորոշում է ձեռնարկությունների ներդրումային գործունեության կառավարման նոր մեթոդաբանական մոտեցումների գիտական հիմնավորման արդիականությունը, որոնք համարժեք են դրանց գործող ընթացիկ ֆինանսատնտեսական պայմաններին:

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## **МЕТОДЫ И ИНСТРУМЕНТЫ ИНВЕСТИЦИОННОГО ПЛАНИРОВАНИЯ В СФЕРЕ ТЕЛЕКОММУНИКАЦИЙ И ИТ РА**

**Ключевые слова** - инвестиционная деятельность, методология, телекоммуникации, конкурентоспособность, планирование, эффективность

В рыночных условиях ключевой экономической задачей каждого предприятия является обеспечение конкурентоспособности. Кроме того, перспективное экономическое развитие диктует необходимость достаточного уровня конкурентоспособности на финансовых рынках, то есть доступа к приемлемым внешним источникам финансирования и инвестиционной деятельности. В то же время в сфере телекоммуникаций экономики РА, существует противоречие между реальной необходимостью обновления материально-технической базы, финансированием инвестиционной деятельности, направленной на ее развитие, и имеющимися источниками собственных финансовых ресурсов. Одна из причин сложившейся ситуации - отсутствие эффективной системы управления инвестициями, основанной на современных методологических принципах, используемые новейшие технологии и инструменты управления предприятием. Все это предопределяет актуальность научного обоснования новых методологических подходов к управлению инвестиционной деятельностью предприятий, эквивалентных их текущим финансово-экономическим условиям.

*Submitted: 15.10.2021*

*Accepted for publication: 15.11.2021*

## **COMPETITION IN BANKING SECTOR: MEASUREMENT AND COMPARISON OF ASSESSMENT METHODS**

**Abstract:** Due to the growing competition in the banking market, the issue of assessing the competitiveness of commercial banks currently has a special place in the existing theoretical and practical issues. Today, in the conditions of dynamic economic development, every bank should target competitiveness as a criterion of the quality of financial-credit services, a determining factor of the bank's activity, both in the national and international markets.

**Keywords:** banking, banking competitiveness, evaluation methods, competition indicators, structural and non-structural methods

**JEL classification:** G21, G19

**Research aim:** review the most frequently-used structural and non-structural measures of competition in banking and highlight their strengths and weaknesses

**Research hypothesis:** develop a conceptual apparatus, to create a methodological basis for its evaluation

**Research novelty:** suggestion of group financial indicators to evaluate the competitiveness of the banks

### **Introduction**

The competitive banking sector is considered to be one of the most significant and important parts of the market economy and is a reflection of the market's degree of development since it considerably participates in economic growth.



In a market economy, it is particularly important to assess the competitiveness of the bank, because in a financial market there are banks that compete for engagement and resource allocation. Under these conditions, the effectiveness of the bank depends on its competitive position and competitiveness. The goal they reveal the real financial condition, its degree of reliability and competitiveness.

### **Literature Review**

The development of global financial markets has acted to alter the competitive environment of financial institutions [7]. Thus, internationally active financial institutions (banks), should respond to opportunities and challenges of an increasingly competitive global market environment due to increased access of foreign competitors to domestic financial markets and the expanding availability of traditional banking services from non-traditional sources. In such circumstances, the intense competition has changed the nature of the market for the existing banking products and discovered the new ones where financial institutions should compete on national and international levels. Furthermore, increasing integration of banks into financial markets allows banks to shift their traditional risks to the markets which influence financial system stability in general [4].

Competition in the banking market has been at the center of the policy debate on financial stability. Most of the theoretical literature on bank competition and stability focuses on individual bank risk, not on correlated risk-taking by banks. Modeling correlated risk-taking has been the focus of papers after the recent crisis [see Brunnermeier 2009, Daneielsson, Shinand Zigrand 2009, Battiston, Gatti, Gallegati, Greenwald, and Stiglitz, 2009 among others] but these papers do not address issues of bank competition.

There are several approaches to measuring bank competition such a concentration ratios number of banks or Herfindahl indices. The HHI accounts for the market share of all banks in the system and assigns a

larger weight to the biggest banks. Instead, concentration ratios completely ignore the smaller banks in the system. The concentration ratio varies between nearly 0 and 100. The HHI has values up to 10,000. If there is only a single bank that has 100 percent of the market share, the HHI would be 10,000. If there were a large number of market participants with each bank having a market share of almost 0 percent, the HHI would be close to zero. The most commonly used structural method of competition assessment is the Herfindahl-Hirschman index, which is calculated by the following formula:

$$HHI = S_1^2 + S_2^2 + \dots + S_n^2 \quad (1);$$

Where  $S_i$  is the market share of the  $i$ -th bank according to some indicator (assets, liabilities, capital, etc.). The higher this index, the more concentrated the market being researched. It is obvious that  $1/n \leq HHI \leq 1$ , where  $n$  is the number of banks in the market.

Much of the recent researches on the competition subject focused on measures of the competitive behavior of banks. The method includes Panzar-Rosse H-Statistics [11], the Lerner Index, and the so-called Boone indicator. The H-Statistics measures the reaction of output to input prices and the competitive behavior of banks but imposes certain restrictive assumptions on banks' cost function. Note that under perfect competition input price increase leads to total revenue and marginal cost moving together, while in the imperfect competition do not. As the studies by Claessens and Laeven [2004] and Bikker and Spierdijk [2007] show estimates of the H-Statistics are varied diverse [3].

Another frequently used measure is based on markups in banking. The indicator of the Lerner index indicates a bank's market power and defined as the difference between output prices and marginal costs. Prices are calculated as total bank revenue over assets, whereas marginal costs are derived from the assessed value of the function translog. Higher values of the Lerner index signal less bank competition. The main difficulty in calculating the Lerner index is the calculation of

marginal costs, which is based on the construction of the so-called bank cost-transfer function. The cost-transfer function, among other arguments, also depends on the price of loans and deposits, which is practically impossible for many banks to collect.

The Boone indicator measures the impact on the effectiveness of performance in terms of profit. It is calculated as the elasticity of profits to marginal costs. The elasticity is captured by the coefficient on log marginal costs, which are typically calculated from the first derivative of a translog cost function. The main idea of the Boone indicator is that the banks that managed more efficiently achieve higher profits. The more negative the Boone indicator is, the higher the level of competition is in the market.

One of the widely used techniques to empirically measure the degree of competitive behavior in the market, called contestability, has been developed by Bresnahan and Lau. This technique attempts to measure the competitive conduct of banks without explicitly using the information on the structure of the market. For measuring the level of competition Bolt and Humphry [3] studied the banking system of the US using HHI, Lerner index, and H-statistics. They concluded that in different ways each of these indicators could be utilized to measure the competition. The study shows that these three methods may not correlate among the banks. Existing competition indicators briefly discussed in a table below.

In case of not taking account peculiarities of the banking market for the particularities of the industry generality can be problematic in any industry, e.g. not considering the localized nature of competition can both underestimate and overestimate the level of competition. Coming to the banking industry, not accounting for specifics is most problematic, where factors such as risk-taking and liquidity transformation play pivotal roles. Only the interest rate pass-through indicator originates in the theoretical banking literature.

**Table 1. Indicator comparison**

	Measures structure but not the conduct	Takes into account only larger banks	Additional data can result/improve measures	Requires measuring marginal costs	Can't separate loan and deposit markets	Considers peculiarities of the banking market	Estimation depends on non-linear effects
HHI	√	√	-	-	-	-	-
Lerner Index	-	-	√	√	-	-	-
H-Statistic	-	-	√	-	√	-	-
Boone Indicator	-	-	√	√	√	-	-
Bresnahan-Lau	-	-	√	-	-	-	√

There is empirical evidence that the pass-through indicator is positively correlated with other competition measures [9]. Indicated approaches of measuring bank competition include decomposition of interest spreads, measures of bank concentration under the so-called “structure-conduct-performance” paradigm. Further, market structure and competition indicators are typically measured on the institutional level, rather than the product level; i.e. competition is assumed to be the same across different product lines, such as deposit, lending, and payment services, etc.

Studies show that usually, the level of bank competition in crisis is low. During an economic crisis, customers become more cautious regarding borrowing and dealing with the banks. Also, banks in crisis require prioritizing all the resources to maintain operations and

overcome the crisis. After a period of crisis, competitive pressure among the banks will probably increase again.

### **Research methodology**

As we have discussed, the existing competition indicators are typically measured on the institutional level, rather than the product level, and competition is assumed to be the same across different product lines, such as deposit, lending, and payment services. Based on research and on the assessment of the HHI index in the banking system we have grouped financial results by groups of indicators. As a basis, we took the calculation of financial indicators of the five leading banks of the Armenian banking system to assess the competitiveness level in a sector.

To evaluate the financial performance of banks, we use the following groups of coefficients:

**Investment protection:** is calculated as the ratio of equity to total assets, which allows assessing the level of investment guarantee.

**The scale of operations:** is calculated by the ratio of equity to total Liabilities, characterizes the change in the real scale of banking operations.

**Specific share of Equity:** calculated as the difference between equity and authorized capital to equity ratio. The coefficient shows the share of own capital of the bank in the structure of liabilities.

The coefficient of **Inflation** is calculated as a mandatory reserve fund relative to equity, which shows how banks will behave during inflation.

Execution **efficiency of the long-term client funds** coefficient is calculated as Liquid assets related to Liabilities.

Assessment of **Liquidity** is calculated as Liquid Assets related to Total assets.

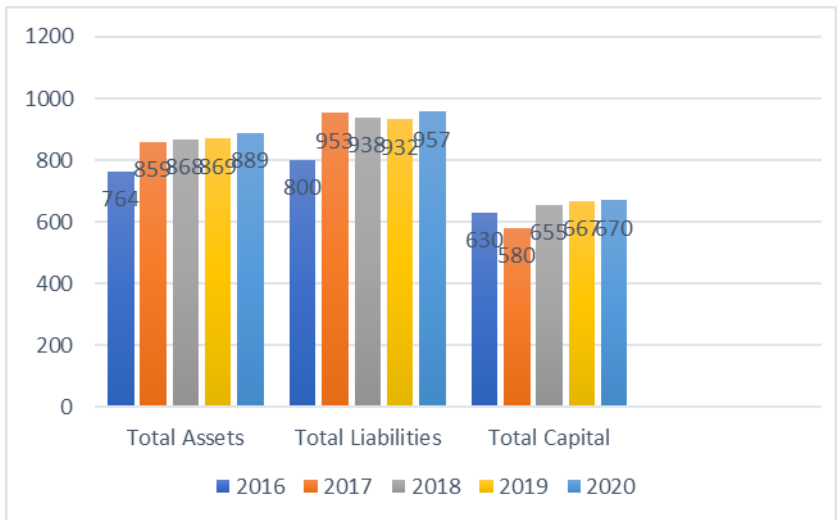
Calculation of **efficiency of used attracted resources** shows the ratio between Liabilities and profit, which assesses how much profit a bank earns from one unit of liabilities.

**The efficiency of operations** assesses how much profit a bank earns from one unit of asset, *efficient bank operation* contributes to financial stability.

**The efficiency of use equity** shows how much profit a bank earns from one unit of asset, in other words, a bank's ability to use its assets to generate income.

The coefficient of **bank performance** or bank profitability shows the contribution of equity in the realization of the result.

**Research results:** Chart 1 presents the calculation of the centralization degree of the Armenian banking system for the last four years:



**Figure 1. Herfindahl-Hirschman Concentration Index 2016-2020**

Compared to the end of 2019, the total capital of the banking system increased by 0.03 %, and total assets - by 0.2%, as a result of which the full value (ratio of total capital to total assets) decreased. The total capital was increased by supplementing the authorized capital and profit. The authorized capital of the banking system increased by 3.8% making 844.8 million drams. It should be noted that Ameriabank is the leader in terms of three indicators, followed by Armbusinessbank, Ardshinbank, Acbabank and Inecobank. The calculation of the indexes shows that the degree of concentration is low. According to the indicators of structural centralization (capital, assets, liabilities), the centralization in the banking system of the Republic of Armenia continues to be assessed as rather weak.

However, these measures do not take into account that banks with different balances and ownership behave differently and consequently these banks might not compete directly with each other in the same line of business. And eventually, the literature has not come to a conclusion on whether market structure determines bank behavior (structure-conduct-performance hypothesis) or market structure is the result of performance (efficient structure hypothesis) [Berger et al. (2004)]. Popular conduct measures of competition include the Lerner index, the Panzar and Rosse H-statistic, the Bresnahan-Lau indicator and the Boone indicator.

Fungáčová et al. [2010] studied the market power using the Lerner index [10]. The study demonstrated the lower market power of the foreign banks, which implied that market power did not depend on the type of ownership of the bank. The study identified the additional factors that influenced market power, including market concentration, risk factors, and the non-linear influence of scale. The research model used was as follows:

$$Lerner_{it} = \alpha + \beta_1 Lerner_{i,t-1} + \beta_2 EQTA_{it} + \beta_3 LOATA_{it} + \beta_4 ROE_{it} + \beta_5 CIR_{it} + \beta_6 BANKSIZE_{it} + \beta_7 GDP_{it} + \beta_8 INF_{it} + U_{it}$$

3)

A number of competition indicators are available, although, in this study, the Lerner index originally developed by Lerner (1934) was used. This is a method used commonly in several studies conducted throughout the world. The Lerner index is defined as the difference between the output price and the marginal cost over the marginal cost, as represented by the formula:

$$Lerner_{it} = \frac{P_{it} - MC_{it}}{MC_{it}} \quad (2)$$

$P$  is the price measured by Total Revenue per total assets of each bank and  $MC$  is the marginal cost of each bank. Without direct observation,  $MC$  is estimated on the basis of the total cost function.

Let's discuss the calculation of the competitiveness of a commercial bank according to the group indicators of financial results presented in the previous section. We have calculated financial indicators of the five leading banks of the Armenian banking system.

Calculation and the analysis of quantitative indicators of commercial banks have primary importance in assessing competitiveness. It is purposeful to assess the competitiveness of commercial banks by starting with the choice of coefficients, which will comprehensively describe the work of each bank and the banking system as a whole. To evaluate the financial performance of banks, we use the following groups of coefficients:

$$C_1 \text{ Investment protection} = \frac{\text{Equity}}{\text{Assets}}$$

$$C_2 \text{ The scale of operations} = \frac{\text{Equity}}{\text{Liabilities}}$$

$$C_3 \text{ Specific share of Equity} = \frac{\text{Equity capital} - \text{Authorized capital}}{\text{Equity capital}}$$

$$C_4 \text{ Inflation} = \frac{\text{Mandatory reserve fund}}{\text{Equity}}$$



$$C_5 \text{ Client's added cost's effective use.} = \frac{\text{Liquid assets}}{\text{Liabilities}}$$

$$C_6 \text{ Liquidity} = \frac{\text{Liquid assets}}{\text{Assets}}$$

$$C_7 \text{ Efficiency is used. attract. resources} = \frac{\text{Profit}}{\text{Liabilities}}$$

$$C_8 \text{ Efficiency of operations} = \frac{\text{Profit}}{\text{Assets}}$$

$$C_9 \text{ Efficiency of use. Equity} = \frac{\text{Profit}}{\text{Equity}}$$

$$C_{10} \text{ Bank efficiency} = \frac{\text{Profit}}{\text{Authorized capital}}$$

**Table 2. The assessment of financial indicators of competitiveness**

<b>Coefficients</b>	<b>Ameriabank</b>	<b>ArmBusiness bank</b>	<b>Ardshinbank</b>	<b>Acba bank</b>	<b>Ineco bank</b>
<b>C<sub>1</sub></b>	0.104	0.059	0.107	0.158	0.165
<b>C<sub>2</sub></b>	0.116	0.063	0.120	0.188	0.199
<b>C<sub>3</sub></b>	0.631	0.0018	0.326	0.562	0.741
<b>C<sub>4</sub></b>	0.006	0.022	0.035	0.437	0.062
<b>C<sub>5</sub></b>	0.311	0.160	0.237	0.291	0.176
<b>C<sub>6</sub></b>	0.278	0.0151	0.212	0.245	0.146
<b>C<sub>7</sub></b>	0.053	0.0033	0.026	0.09	0.097
<b>C<sub>8</sub></b>	0.047	0.0031	0.023	0.076	0.081
<b>C<sub>9</sub></b>	0.456	0.052	0.220	0.475	0.491
<b>C<sub>10</sub></b>	1.237	0.057	0.327	1.096	1.902

The selection of banks was made based on the analysis of the main financial indicators, which was based on the interim financial statements published by commercial banks.

After analyzing the data, we see that Ineco Bank is the most reliable among the five banks, which are represented in terms of financial

performance since it stood out for the majority of parameters the highest values. This speaks to the efficiency of the use of equity, borrowed funds, customers' fund, the bank's ability to increase capital at the expense of profit. ArmBusiness Bank was behind in the list of represented banks. As we see coefficient  $C_3$  is very low for ArmBusiness Bank, which shows the low share of its capital of the bank in the structure of liabilities.

### **Conclusion**

The competitive environment leads each company to constantly study and take into account the position of competitors in the market to determine short-term and long-term advantages. From this point of view, the Armenian banking sector is no exception. In this situation, developing a strategy is the shortest way to stand out from the competition and compete.

There are various methods of assessing the competitiveness of banks in the scientific literature. The methods differ only in the sources of information, including banking, taking into account the environment, the structure of used indicators, the calculation of technologies.

In recent decades, many approaches to banking competitiveness research and level assessment have been developed in the world practice, the main ones of which are the following:

- Market power estimation methods based on a direct calculation of the Lerner index (Lerner, 1934);
- Concentration Indicators' and Competitiveness Characteristics (Structural Approach, Herfindahl-Hirschman Index, Division of First K Banks, etc.);
- Non-structural methods (Panzar-Rosse method (Rosse, Panzar, 1977; Panzar, Rosse, 1987)), Bresnakan model (Bresnakan 1982), Barros and Modesto model, etc.

The calculations made showed that the five leading banks of the Armenian banking system are reliable. As a result of the calculation of indicators, Ineco Bank was the most reliable, and by almost all indicators, Armbusiness Bank was behind in the list of represented banks.

The banks should increase the level of equity, invest, and develop modern/innovative technology for effective operations of the system, besides the marketing and digital banking units of the banks should be the focus of bank managers. Banks should develop and provide diversified products to be consistent with customer demand and In line with modern innovations.

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**Հասմիկ Մանանդյան**  
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**ՄՐՑՈՒՆԱԿՈՒԹՅՈՒՆԸ ԲԱՆԿԱՅԻՆ ՈԼՈՐՏՈՒՄ .**  
**ՄՐՑՈՒՆԱԿՈՒԹՅԱՆ ՄԵԹՈԴՆԵՐԻ**  
**ԳՆԱՀԱՏՈՒՄԸ ԵՎ ՀԱՄԵՄԱՏՈՒՄԸ**

**Բանալի բառեր** - բանկային գործունեություն, բանկային մրցունակություն, գնահատման մեթոդներ, մրցակցության ցուցանիշներ, կառուցվածքային և ոչ կառուցվածքային մեթոդներ

Առևտրային բանկի մրցունակության գնահատման խնդիրը ներկայումս առանձնահատուկ տեղ է զբաղեցնում բանկի գործունեության վերլուծության առկա տեսական և գործնական խնդիրների մեջ: Հոդվածում դիտարկվում է բանկային գործունեության մեջ առավել հաճախ օգտագործվող մրցակցային կառուցվածքային և ոչ կառուցվածքային մեթոդները՝ ընդգծելով դրանց ուժեղ և թույլ կողմերը, և առաջարկվում է առևտրային բանկերի մրցունակության գնահատման մեթոդ:

## **КОНКУРЕНТОСПОСОБНОСТЬ В БАНКОВСКОМ СЕКТОРЕ: ОЦЕНКА И СРАВНЕНИЕ МЕТОДОВ КОНКУРЕНТОСПОСОБНОСТИ**

**Ключевые слова** - банковское дело, конкурентоспособность банков, методы оценки, показатели конкуренции, структурно-неструктурные методы

Вопрос оценки конкурентоспособности коммерческого банка в настоящее время занимает особое место в существующих теоретических и практических вопросах анализа деятельности банка. В данной статье проводится обзор структурно-неструктурных методов конкуренции, наиболее часто используемых в банковской сфере, с выделением их сильных и слабых сторон, а также предлагается метод оценки конкурентоспособности коммерческих банков.

*Submitted: 10.09.2021*

*Accepted for publication: 15.11.2021*

## **FINANCIAL RISK MANAGEMENT ISSUES IN ELECTRONIC PAYMENT AND SETTLEMENT ACTIVITIES**

**Abstract:** Risk formation is an integral part of the operation of electronic payment systems. Moreover, their occurrence has objective-subjective reasons. Objective reasons include legislative gaps, inadequate levels of cyber security and shortcomings in fulfilling the obligations of international partners. Risks in electronic payment systems can arise for subjective reasons, such as inefficient use of payment instruments, sharp declines in the liquidity of transaction organizations, shortcomings in payment management and so on. The article makes recommendations for effective management of such financial risks.

**Keywords:** electronic payments, systemic risks, payment and settlement organizations, e-payment risks, risk analysis.

**JEL classification:** G20, G 21.

**Research aims:** submit proposals for the prevention of financial risks of electronic payment systems.

**Research novelty:** present ways to improve the financial management of e-payment transaction risks.

### **Introduction**

Despite the fact, that in the professional literature the risks of using electronic payment transactions and electronic money are presented in their diversity, they can still be grouped. In general, the risks of electronic payment and credit transactions can be grouped into four areas [1], such as financial, operational, cybersecurity and system, which are interconnected and interact with each other. The powers of the

performers of the management functions of the payment and settlement systems and the priorities of their activity are the subject of discussion. Questions are arisen about how risk management should be distributed among the central bank, commercial banks and payroll and credit organizations.

### **Research results**

Payment systems can be a source of systemic risks. Systemic risks may arise when a system failure disrupts the smooth operation of the system or when one of the system components fails to perform its financial obligations. The system lacks special mechanisms that can limit the technical or financial failure [2]. The chain of negative consequences of the problems spread to other participants. In order to ensure the stability of payment and settlement systems, it is necessary for the Central Bank of Armenia to ensure that the rules of organization and operation of the systems do not contribute to the formation or spread of financial and operational risks, risk management mechanisms are defined in the system [3].

In terms of risk control, payment systems are divided into two main types: systems of public importance, depending on the extent to which they affect the stability of the country's financial system. Experience shows, that some countries include only systemically important payment environment in the scope of control. And the European Union, for example, includes not only systems of systemic importance, but also retail payment systems of public importance.

Studies of the bandwidth of the current payment and settlement system in Armenia show that the maximum number of payments made per hour in 2019 compared to 2018 has decreased. The maximum hourly rate in 2019 was 4996 payments per hour (in 2018 - 5990). The peak hour was registered between 11:00 and 12:00, making 23.1% of the amount of payments for that day, 7.9% of the volume.

Despite the increase in the total number of electronic payments, in 2019 there is a decrease in certain large limits characterizing the number of payments per hour, as well as indicators characterizing the amount of flow of payments per hour. In particular, as a result of the monitoring, 4300 and more payments per hour were registered - 1.8%, 3500-4300 payments / hour - 5.6%, 2500-3500 - 15.6% of the total operating hours. In 2019, compared to the previous year, the maximum daily payment index in the RA payment and settlement system decreased to 23,187 payments / day, when in 2018 the peak was 28,549. According to the Central Bank of Armenia, the share of payments over 3,500 per hour in 2019 was 7.4% per annum.[3]

It enables not only the systematic management of payment and settlement risks by the Central Bank of the Republic of Armenia, but also the application of risk recognition and containment mechanisms by payment and settlement organizations. Studies show that the assets of payment and settlement organizations are dominated by cash, the risks of which are related to the ratio of daily payments to the initial cash balance, as well as the provision of own resources in the payment and settlement system (see table 1).

**Table 1. Asset structure of payment and settlement organizations operating in Armenia (%)**

Assets	Armenian Card	TelCell	Easy Pay	Mobi Dram	Idram	Stack Processing
<b>Non current assets</b>						
Fixed assets	21,1	7,9	12,6	8,1	5,6	14,1
Non tangible assets	17,3	22,8	19,2	23,4	7,1	9,3
Loans given	7,2	4,7	5,8	3,9	7,9	2,2



Deferred tax assets	0,3	1,1	2,3	0,8	0,2	3,4
Current assets						
Unfinished transactions	4,5	3,9	3,2	8,7	19,2	6,7
Receivables	2,9	1,8	4,2	4,8	3,3	1,8
Inventories	3,2	4,1	2,8	2,6	2,5	4,1
Cash	43,5	53,7	49,9	47,7	55,2	58,4

Taking into account the risks, related to the operation of electronic payment systems, we propose a multi-factor risk assessment approach [4], based on the objectives and the resulting negative deviations. In this case, the following steps are performed.

- Objectives are ensured to ensure the stability of payment and settlement activities, setting an allowable threshold of measurement for each of them.
- the actual results of the activity are compared with the goals set for them and the obtained deviations are expressed in relative quantities - coefficients;
- comprehensive deviation on all factors is calculated with a risk degree assessment approach.

The more the received coefficients deviate from 1.0, the more the payment and settlement functions presented for them are considered risky.

Thus, Table 2 presents the objectives related to the electronic payment-settlement functions the coefficient deviations from them. Moreover, taking into account all the risk factors, the principle of complex assessments yielded a consolidated negative deviation coefficient of 0.1611, or 16.11% of the degree of risk of payment activity, which can be compared with previous years in order to determine the degree of change in risk.

However, when considering the individual risk factors, it becomes clear, that the maximum negative deviations were recorded for cryptolysis and daily electronic payments / initial cash balance ratio, which had the most deviations of 1.0- from 0.67 and 0.33, respectively (see Table 2). Therefore, in the period under review, these areas of payment and settlement system activity are considered to be the most risky, which gives an indication to the management when making decisions aimed at mitigating specific sector risks.

**Table 2. Multi-factor assessment of e-payment risks**

Factors	Literal meaning	Pur-posed	Factual	Deviation coefficient
Card service coverage	R1	80%	65%	0,19
Cryptolysation	R2	3%	5%	0,67
Cyber Security	R3	98%	91%	0,07
Average hourly rate of payments	R4	3200	3400	0,06
Availability of payment transactions	R5	4300	4100	0,05
Payment system bandwidth	R6	100%	99%	0,01
Availability of payment transactions	R7	0,3	0,4	0,33
Own Resource Payments	R8	85%	82%	0,03
Liquidity level of organizations	R9	110%	105%	0,04
Consolidated deviation	$\Sigma R/n$	x	x	0,1611

## Conclusion

Thus, the risk assessment approaches we offer in electronic payment and settlement activities allow:

- First, to carry out a multi factorial risk analysis of payment and settlement activities, taking into account not only the financial and economic, operational, but also cyber-security and systemic risks of the sector.
- Second, apply both synthetic and individual factor analytical approaches to risk assessment, which identify the most risky functions that negatively affect e-payment operations.
- Third, to introduce a unified system of risk measurement, using coefficients of deviation for all factors, which allows to make the risk factors in different units of measurement comparable in case of assessments, to make comparative analysis of both temporal and electronic payment activities.

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**ՖԻՆԱՆՍԱԿԱՆ ՌԻՍԿԵՐԻ ԿԱՌԱՎԱՐՄԱՆ  
ՀԻՄՆԱԽՆԴԻՐՆԵՐԸ ԷԼԵԿՏՐՈՆԱՅԻՆ  
ՎՃԱՐԱՀԱՇՎԱՐԿԱՅԻՆ ԳՈՐԾՈՒՆԵՈՒԹՅՈՒՆՈՒՄ**

**Բանալի բառեր** – էլեկտրոնային վճարումներ, համակարգային ռիսկեր, վճարահաշվարկային կազմակերպություններ, էլ-վճարային ռիսկեր, ռիսկերի վերլուծություն

Ռիսկերի ձևավորումը էլեկտրոնային վճարահաշվարկային համակարգերի գործունեության անբաժանելի մասն են կազմում: Ընդ որում, դրանց առաջացումն ունի օբյեկտիվ և սուբյեկտիվ պատճառներ: Օբյեկտիվ պատճառների թվին են դասվում օրենսդրական բացթողումները, կիրառանվտանգության ապահովման ոչ պատշաճ մակարդակը, միջազգային գործընկերների պարտավորությունների կատարման թերացումները: Էլեկտրոնային վճարային համակարգերում ռիսկեր կարող են ձևավորվել անպիսի սուբյեկտիվ պատճառներով, ինչպիսիք են վճարային գործիքների անարդյունավետ կիրառումը, գործարքներ իրականացնող կազմակերպությունների իրացվելիության կտրուկ անկումները, վճարային գործարքների մենեջմենթի թերացումները և այլն: Հոդվածում առաջարկներ են արվում նմանատիպ ֆինանսական ռիսկերի արդյունավետ կառավարման ուղղություններով:

## **ПРОБЛЕМЫ УПРАВЛЕНИЯ ФИНАНСОВЫМИ РИСКАМИ В ЭЛЕКТРОННОЙ ПЛАТЕЖНО-РАСЧЕТНОЙ ДЕЯТЕЛЬНОСТИ**

**Ключевые слова** - электронные платежи, системные риски, платежно-расчетные организации, риски электронных платежей, анализ рисков

Принятие рисков является неотъемлемой частью работы электронных платежных и расчетных систем, и их возникновение имеет объективно-субъективные причины. К объективным причинам относятся пробелы в законодательстве, недостаточный уровень кибербезопасности и недостатки в выполнении обязательств международных партнеров. Риски в системах электронных платежей могут возникать также по субъективным причинам, таким как неэффективное использование платежных инструментов, резкое снижение ликвидности транзакционных организаций, недостатки управления платежными транзакциями. В статье даются рекомендации по эффективному управлению вышеизложенными финансовыми рисками.

*Submitted: 24.09.2021*

*Accepted for publication: 15.11.2021*

## **ISSUES OF FINANCIAL CONTROL INFORMATION PROVISION IN UNIVERSITIES**

**Abstract:** Financial control is carried out on a continuous basis. For this purpose it uses information, which is not only systematically presented in universities, but also acts in an uninterrupted manner. The financial accounting is organized on such grounds, using double entry, interconnection of accounts and preparation of financial statements. However, the published financial report is mostly aimed at external users and is an information base for the latter, making reasonable management decisions inefficient. In this article ways are suggested for organizing financial results accounting with university responsibility centers.

**Keywords:** financial control, educational services, financial results responsibility centers, estimates, deviation accounting.

**JEL classification:** M40, M41.

**Research aim:** submit proposals to improve financial information flows in the universities of the responsibility centers.

**Research novelty:** suggested ways for the introduction of financial results accounting with university responsibility centers.

### **Introduction**

It is urgent to offer consistent reporting to HEIs, that will be most targeted at financial control. Therefore, we can organize accounting in the universities according to the centers of responsibility. [1] Thus, in order to record the deviations of the financial flows according to the

centers of responsibility, we propose to introduce special accounts correspondences in the accounting system, which will be used to enable the universities to carry out systematic recording of actual financial flows information monitoring deviations [2].

### **Reserach results**

Table 1 presents the factual financial flows projected by the University during the reporting period, as well as the identified deviations that may be included in the systematic information field monitored if the following accounting accounts we offer are used: "Estimated revenues", "Income deviations", "Deviations of cost centers", "Deviations of financial centers", "Estimates of cost centers", "Estimates of financial centers".

According to the University of Responsibility Financial Centers, the accounts provided by us for the calculation and allocation of actual financial flows of the University are transit. [4] In fact, having no ending and begining balance, they have no role in the process of compiling and publishing financial reports of the university according to international standards. However, on the other hand, their role for effective internal financial control is too great, because with the help of these accounts, the positive-negative deviations, it becomes clear where they came from and who are responsible.

It is clear from Table 1, that the negative deviation of 3 million AMD from the estimated expenses for the service chair had a negative impact on the financial results of the provided educational services, while the professional chair managed to save 1 million AMD in the estimated period and increase in revenue collection of 1.5 million AMD on tuition fees.

Consequently, the Center for Expenditure Accountability is a weak link in the process of generating financial results for the provision of educational services during the reporting period.

**Table 1. Establishment of estimated and actual financial flows allocated by centers of responsibility (million AMD)**

	Transactions	Estimated	Factual	Deviation
	Expenses of the service chair	17	20	+3
	Professional chair expenses	50	49	-1
	Income of the professional chair	70	71,5	+1,5
	Financial income of educational services	3	2,5	-0,5

However, it should be noted, that according to the centers of responsibility, the information on deviations in the financial results of the universities should be coordinated and monitored by the HEIs, for which we suggest including this information in the new accounts and submit for double entry with the following operations:

1. The actual expenses of the reporting period of the service chair were recorded - 20 million AMD.  
DR "Service Chair Expenses" ..... 20  
CR "Liabilities on Salary",  
"Materials" ..... 20
2. The actual expenses of the chair of service were attributed to the Center for Liability Management of Expenses.  
DR "Expenditure Center Estimates" ..... 20  
CR "Service Chair Expenses" ..... 20
3. The estimated expenses of the Expenditure Center 17 million AMD were attributed to the financial result of the university.  
DR "Financial Results" ..... 17  
CR "Expenditure Center Estimates" ..... 17
4. Deviations of 3 million drams from the expenses of the expenditure center were calculated.



- DR "Deviations of Consumption Centers" ..... 3  
 CR "Expenditure Center Estimates" ..... 3
5. Unfavorable deviations of the cost centers were attributed to the financial result of the university.  
 DR "Financial Results" ..... 3  
 CR "Deviations of Consumption Centers" ..... 3
6. The actual expenses of 49 million AMD for the reporting period of the professional chair have been registered.  
 DR "Professional Chair Expenses" ..... 49  
 CR "Liabilities on Salary",  
 "Materials" etc. .... 49
7. The actual expenses of the professional chair were attributed to the center of responsibility for the formation of financial results.  
 DR "Financial Results Centers Estimates" ..... 49  
 CR "Professional Chair Expenses" ..... 49
8. The estimated 50 million AMD expenses of the Center for Liability of Financial Results were attributed to the financial result of the university.  
 DR "Financial Results" ..... 50  
 CR "Fin. Results Center Estimates" ..... 50
9. Deviations of 1 million drams from the estimates of the Financial Outcome Center have been registered.  
 DR "Fin. Deviations of Result Centers" ..... (1)  
 CR "Fin. Results Centers Estimates" ..... (1)
10. Fin. The favorable deviations of the result centers were attributed to the financial result of the university.  
 DR "Financial Results" ..... (1)  
 CR "Deviations of the Result Centers" ..... (1)
11. Revenues from 71.5 million AMD higher education institutions received from tuition fees  
 DR "Cash" ..... 71,5

- CR "Actual Income" ..... 71,5
12. Actual revenues were compared with their estimated amount.  
 DR "Actual Income" ..... 71,5  
 CR "Estimated Revenues" ..... 71.5
13. Estimated income of 70 million drams from tuition fees was attributed to the financial result of the university.  
 DR "Estimated Income" ..... 70  
 CR "Financial Results" ..... 70
14. Deviations of favorable income of 1.5 million AMD have been registered.  
 DR "Estimated Income" ..... 1,5  
 CR "Income Deviations" ..... 1,5
15. Tuition income deviations were attributed to the financial result of the university.  
 DR "Income Deviations" ..... 1,5  
 CR "Financial Results" ..... 1,5

Proposed accounting correspondence and the new accounts are integrated into the financial accounting system of the HEIs, but the information generated by them is mainly focused not on the external user, but on the internal control needs of the organization.

Thus, double entries in the deviation accounts provide information not only systematically, but also on a non-stop basis to the financial control over where deviations from the estimates have been made, what their nature is (favorable or unfavorable), to what extent the specific subdivision assumes responsibility for the deviations.[5]

Therefore, by applying deviations from the accounting approach in the dual registration centers of the university, it is possible to introduce a financial control reporting system, including areas such as preventive, regulatory and analytical functions. The accountability system does not merely provide reporting, but provides feedback between the

beneficiaries who use it, facilitating the management of mutually agreed management decisions.

### **Conclusion**

With such reports, financial control has the opportunity to apply its functions more comprehensively, such as:

- monitoring of favorable and unfavorable deviations, when the information in the deviations is recorded on a continuous basis, as those accounts operate in the financial accounting system;
- analysis of the activities of the responsibility centers, when the causal relations of the revealed deviations are interpreted and the scope of responsibility defined by the university for them is reviewed;
- settlement of conflicts of interest between centers of financial responsibility, when unfavorable deviations "transferred" from one center to another are not attributed to the "receiving" liability center;
- implementation of preventive measures for financial deviations, when based on the analytical results, proposals are made in the university to review the weak links of the scientific-educational activity.

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## **Աստղիկ Պողոսյան**

Հայցորդ, Հյուսիսային համալսարան

## **ՖԻՆԱՆՍԱԿԱՆ ՎԵՐԱՀՍԿՈՂՈՒԹՅԱՆ ՏԵՂԵԿԱՏՎՈՒԹՅԱՆ ՆԵՐԿԱՅԱՑՄԱՆ ՀԻՄՆԱԿՆԴԻՐՆԵՐԸ ՀԱՄԱԼՍԱՐԱՆՆԵՐՈՒՄ**

**Բանալի բառեր** - ֆինանսական վերահսկողություն, կրթական ծառայություններ, ֆինանսական արդյունքների պատասխանատվության կենտրոններ, նախահաշիվներ, շեղումների հաշվառում

Ֆինանսական վերահսկողությունն իրականացվում է անընդհատության սկզբունքով: Այդ նպատակով այն օգտագործում է տեղեկատվություն, որը ոչ միայն համակարգված է ներկայացվում բուհերում, այլև ձևավորվում է անխափան կերպով: Ֆինանսական հաշվառումը, օգտագործելով կրկնակի գրանցում, հաշիվների փոխկապակցում, իրականացնում է ֆինանսական հաշվետվությունների պատրաստում: Այնուամենայնիվ, հրապարակված ֆինանսական հաշվետվությունը հիմնականում ուղղված է արտաքին օգտագործողներին

և հանդիսանում է վերջիններիս տեղեկատվական բազան ողջամիտ որոշումներ կայացնելու համար, որը ոչ միշտ է իրականացվում արդյունավետ ձևով: Հոդվածում առաջարկվում են համալսարանի պատասխանատվության կենտրոններով ֆինանսական արդյունքների հաշվառման կազմակերպման ուղիներ:

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## **ПРОБЛЕМЫ ПРЕДОСТАВЛЕНИЯ ИНФОРМАЦИИ ПО ФИНАНСОВОМУ КОНТРОЛЮ В УНИВЕРСИТЕТАХ**

**Ключевые слова** - финансовый контроль, услуги образования, центры учета финансовых результатов, смета, учет отклонений

Финансовый контроль осуществляется на непрерывной основе. Для этого он использует информацию, которая не только систематически предоставляется в университетах, но и формируется бесперебойно. В бухгалтерском учете используется двойная запись, взаимосвязь счетов, составляется финансовая отчетность. Однако публикуемый финансовый отчет в основном ориентирован на внешних пользователей, и это база данных для принятия последними разумных решений, что не всегда реализуется эффективно. В статье предложены пути организации учета финансовых результатов по центрами ответственности вуза.

*Submitted: 17.09.2021*

*Accepted for publication: 15.11.2021*

## **HUMAN CAPITAL ADEQUACY IN THE CONTEXT OF ECONOMIC SECURITY AND COMPETITIVENESS**

**Abstract:** In the world practice, many indicators are used to assess the socio-economic progress of countries (economic activity, freedom, gender, development of human potential, etc.), which come in different dimensions, as a rule, are not correlated with each other. But on the other hand, individual socio-economic phenomena are closely r indirectly related to each other, which need to be studied in different assessments. The article discusses the assessment of the adequacy of human capital accumulation in terms of economic security and competitiveness.

**Keywords:** human capital, economic security, economic competitiveness, economic stability index, capital accumulation

**JEL classification:** B41

**Research aim:** Introduce human resource assessment methodology in the context of economic security and competitiveness.

**Research novelty:** a method for assessing the adequacy of human capital based on economic security and competitiveness has been proposed.

### **Introduction**

Estimates of economic resilience are currently being made in terms of human capital, economic security and competitiveness. Especially in the case of such assessments, usually is considers the role of human capital to be a priority, as it becomes key in the issues of non-risk-competitive security [1]. On the other hand, having a clear statistic on the components of human capital formation, it is not yet possible to analyze the adequacy of labor resources in the field of economic security,

competitiveness, in terms of sufficient availability, which requires the use of special methodologies.

### Research results

When conducting comparative analyzes of countries, the Republic of Armenia occupies above-average positions in terms of life expectancy of members of the population (see Table 1), which significantly improves the quality of human capital. However, with the growth of the employed in the economy in recent years, our country still has quite high unemployment rates.

**Table 1. Life expectancy comparison by countries (years) [2]**

Countries	Population	Men	Men
Armenia	79,5	73,1	79,5
Belarus	74,5	69,3	79,4
Kazakhstan	73,2	68,1	77,3
Moldova	70,9	66,8	75,1
Russia	73,6	68,2	78,2
USA	80,3	78,0	82,5
Austria	81,8	79,4	84,1
Belgium	81,7	79,4	83,9
Germany	81,0	78,6	83,3
Romania	75,3	71,7	79,2
Hungary	76,2	72,7	79,6

Comparing the average monthly nominal wage within the CIS countries, we can state, that the Republic of Armenia is significantly lower than its position in this indicator (see Table 2), which also contains risks of decreasing the quality components of human capital. The dynamics of household cash incomes in recent years show that the share

of wages is declining, instead household incomes from sales of all types are increasing, which is also a negative impact on human capital. in the process of forming quality components. At the same time, one of the most important factors in the development of quality human capital that ensures a safe and competitive environment is the need for adequate funding in the process of enforcing individual education, health, professional skills, moral, humanitarian and patriotic norms [3].

**Table 2. Average monthly nominal salary (USD) [2]**

Countries	2015	2016	2017	2018	2019
Armenia	319	321	344	358	380
Moldova	241	250	302	373	412
Kazakhstan	568	418	463	472	488
Ukraine	192	203	273	328	409
Russia	561	549	671	699	733
Uzbekistan	457	436	285	226	263
Azerbaijan	455	313	307	320	373

Therefore, the problem arises as to how to determine the sufficient limits of human capital while ensuring the necessary security and competitive levels of the country. [4] For this purpose, we propose to use the logic of deriving the index of economic stability, where the indicators of human capital, economic security and competitiveness are interrelated. Moreover, based on the coefficients, the force of influence of each factor on the growth of the stock of economic stability can be presented in a balanced way.

Thus, if the maximum coefficient of actual availability of economic stability is set at 1.0, the coefficient of minimum impact of human resources on balanced interactions in this process will be 0.5 points, the coefficient of economic security will be 0,3 points, and the coefficient of economic competition stock 0.2 points (see Table 3.).



**Table 3. Balancing the impact of economic capital, human capital, economic security, competitiveness**

Index	Coef- ficient	Index	Coefficient
Economic Stability	1,0	Human Capital Resource	0,5
		Economic security reserve	0,3
		Competitiveness level reserve	0,2
Balance	1,0	Balance	1,0

Naturally, any country strives to have the maximum resource of economic stability at any given time. And in this case, there is also a need to develop adequate human capital, that will contribute to economic stability. However, it is not always possible to create such a situation in reality, both optimistic and pessimistic scenarios occur, in which the balance of the impact of human capital, economic security and competition on economic stability is disturbed. Thus, if we assume, that in the best case scenario the country's economic stability index is above 0.8, and in the worst case scenario it is less than 0.8, we will have the following calculation.

Optimistic scenario when  $ECl > 0.8$

$$0.853 = [(3 * 0.891 + 2 * 0.764 + 0.915)] / 6:$$

$$0.853 = (2.673 + 1.528 + 0.915) / 6 = 5.116 / 6:$$

In this case, the adequacy of human capital in the process of developing the economic stability index is ensured, as the IFR component plays a role of more than 50% ( $2.673 / 5.116 > 0.5$ ). At the same time, the impact of the economic security component has decreased in the process of ensuring economic stability ( $1.528 / 5.116 < 0.3$ ).

Pessimistic scenario when  $ECl < 0.8$

$$0.616 = [(3 * 0.272 + 2 * 0.945 + 0.992)] / 6:$$

$$0.616 = (0.816 + 1.89 + 0.992) / 6 = 3.698 / 6:$$

In this scenario, the value of human capital in the process of developing the economic stability index is not ensured, as there the human capital index component plays a role of less than 50% ( $0.816 / 3,698 < 0.5$ ). Instead, the strength of the economic security component is significantly increased in the process of ensuring economic stability ( $1.89 / 3,698 > 0.3$ ).

Thus, in the context of economic security and competitiveness, we propose to determine the adequacy of the accumulation of human capital on the principle of balance, when security and competitive factors interact with human capital, creating the necessary level of economic stability of the country.[5] And if the adequacy of human capital, not on necessary level of accumulation, is violated, it carries the risk of falling economic security and competitive levels, which in turn has a negative impact on ensuring the level of economic stability of the country.

### **Conclusion**

Ensuring the adequacy of the accumulation of human capital in the context of economic security and competitiveness, we propose to consider the necessary resource for economic stability of the country, taking the following steps. Calculation of human capital, economic security and reserves of economic competitiveness determining the economic stability index by their interconnection. Assessing the share of the impact of human capital accumulation on the development of the economic stability index. And finally, use balancing of safety impact links to detect inadequate accumulation of human capital.

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**Հրայա Սարգսյան**  
Ասպիրանտ, ԵՊՀ

**ՄԱՐԴԿԱՅԻՆ ԿԱՊԻՏԱԼԻ ԿՈՒՏԱԿՄԱՆ  
ՀԱՄԱՐԺԵՔՈՒԹՅՈՒՆԸ ՏՆՏԵՍԱԿԱՆ ԱՆՎՏԱՆԳՈՒԹՅԱՆ  
ԵՎ ՄՐՑՈՒՆԱԿՈՒԹՅԱՆ ՀԱՄԱՏԵՔՍՈՒՄ**

**Բանալի բառեր** – մարդկային կապիտալ, տնտեսական անվտանգություն, տնտեսական մրցունակություն, տնտեսական կայունության համաթիվ, կապիտալի կուտակում

Համաշխարհային պրակտիկայում երկրների սոցիալ-տնտեսական առաջընթացի գնահատման համար օգտագործում են բազմաթիվ համաթվեր (տնտեսական ակտիվության, ազատության, զենդեբային, մարդկային ներուժի զարգացման և այլն), որոնք հանդես են գալիս տարարնույթ ձևաչափերով և որպես կանոն, չեն փոխկա-

պակցվում միմյանց հետ: Սակայն մյուս կողմից, սոցիալ-տնտեսական առանձին երևույթներ միմյանց հետ ունեն սերտ կամ անուղղակի կապեր, որոնք ուսումնասիրման անհրաժեշտություն են առաջացնում տարբեր գնահատումների ժամանակ և բազմիցս ընդգծվում են հետազոտողների կողմից: Հոդվածում քննարկվում է մարդկային կապիտալի կուտակման համարժեքության գնահատումը տնտեսական անվտանգության և մրցունակության տեսանկյունից:

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## **АДЕКВАТНОСТЬ НАКОПЛЕНИЯ ЧЕЛОВЕЧЕСКОГО КАПИТАЛА В КОНТЕКСТЕ ЭКОНОМИЧЕСКОЙ БЕЗОПАСНОСТИ И КОНКУРЕНТОСПОСОБНОСТИ**

**Ключевые слова** - человеческий капитал, экономическая безопасность, экономическая конкурентоспособность, индекс экономической стабильности, накопление капитала.

В мировой практике для оценки социально-экономического прогресса стран используется множество показателей (экономическая активность, свобода, гендерное, развитие человеческого потенциала и т. д.), которые имеют разные измерения, и как правило, не взаимосвязаны. Но с другой стороны, отдельные социально-экономические явления тесно или косвенно связаны друг с другом, что требует изучения в различных исследованиях. В статье рассматривается оценка достаточности накопления человеческого капитала с точки зрения экономической безопасности и конкурентоспособности.

*Submitted: 10.09.2021*

*Accepted for publication: 15.11.2021*

## **ASSESSMENT OF RA DEFAULT PROBABILITY IN THE CONTEXT OF IFRS 9 "FINANCIAL INSTRUMENTS" STANDARD**

**Abstract:** IFRS 9 “Financial Instruments” requires a provision for expected credit loss<sup>1</sup> on financial instruments, but does not provide a strict guidance on its calculation. To assess one of the three components ECL calculation - the probability of default<sup>2</sup>, this article proposes to rely on the country's creditworthiness rating and S&P's annual research's data on default with some adjustments.

**Keywords:** Expected credit loss, probability of default, exponential smoothing, effective interest rate, sovereign risk, country ceiling

**Research aim:** Obtain PD indicators for ECL calculation in case of RA

**Research hypothesis:** Use of the country's creditworthiness rating and S&P's annual default survey in the PD assessment process

**Research novelty:** A robust PD assessment methodology has been developed, which also takes into account the specifics of the financial instrument.

### **Introduction**

The financial crisis of 2008 forced them to pay more attention paid to cash flows, including their possible losses. This led to the development of a new financial instruments standard - IFRS 9 “Financial Instruments”. It is widely used by companies in the banking and credit

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<sup>1</sup> Hereinafter called ECL

<sup>2</sup> Hereinafter called PD

markets. This standard requires ECL provision be presented in the financial statements for financial instruments to offset future losses.

In order to understand what advantage presents having an ECL, consider the following example. Suppose that during the 2008 financial crisis, Company “A” possessed a CDO [1] for which no ECL was elaborated.

In the event of default on that financial instrument, the loss will be recognized in full at the time of default, whereas in accordance with IFRS 9, starting from the recognition of the financial instrument ECL provision is required to calculate during its whole life. By encouraging the use of forward-looking scenarios, IFRS 9 aims to deal with the probable sudden losses by predicting them in advance and informing users of financial information.

According to IFRS 9, the ECL is a probability-weighted estimate of credit losses (present value of cash shortfalls) over the life of the financial instrument, [2, p. 133]:

The ECL calculation formula is presented below:

$$ECL = EAD \times PD \times LGD,$$

where:

EAD – Exposure at default – is the amount of money that would be at risk in the event of default on that asset;

PD – Probability of default – is the probability of default of the financial instrument,

LGD – loss given default – is the share of the value of the asset without collateral.

### **Research results**

Within the framework of this article, the calculation of assets' probability of default in Armenia will be considered.

Note that according to IFRS 9, financial assets are classified into three stages depending on the specificity of their initial value calculation (see Table 1).

If the difference between 12 month and lifetime PDs is not significant, then a 12 month PD also applies to financial instruments in Stages 2 u 3. This, of course, does not apply to instruments whose only payment is made at the maturity date of the financial instrument, in which case there is a significant difference between the 12 month and lifetime PD of the asset. For simplicity, we will continue further observations for 12-month PD.

**Table 1. 3 Stages of financial assets recognition**

	Stage 1	Stage 2	Stage 3
Specificity	Not deteriorated significantly since the initial recognition	Credit quality has deteriorated significantly since initial recognition, but there is no objective evidence of credit loss	There is evidence of impairment of the financial instrument
<i>PD used in ECL calculation</i>	12 month PD	Lifetime PD	Lifetime PD

With the purpose of perceiving the importance of accurate the choice of PDs should be, we can glance at the total amounts of the investment securities and loan portfolios of Armenian banks (see Table 2), for which ECL is calculated.

**Table 2. Total amount of securities u loan portfolios of Armenian banks 2019 and 2020 at the end of the year and their trend, kAMD**

	2020	2019	Growth (%)
Loan portfolio	4,091,947,767	3,563,943,284	14.8
Investment securities	872,856,232	616,186,012	41.7

As a source for the selection of PD can be the 3 major rating companies Moody's<sup>3</sup> EDF model [3]. However, it is not appropriate to apply, given the time and resources required by methodology for calculating the PDs. IFRS 9 defines that the prospective scenario used for the ECL calculation should be based on reasonably available information at the reporting date without requiring undue cost [2, p. 137]. Instead, it is proposed to base the PD's calculation on S&P's annual report called "Default, Transition, and Recovery" in 1 year horizon, where the probability of default corresponding each creditworthiness rating can be obtained.

In order to understand the meaning of the above-mentioned table, firstly, it is necessary to present its structure and the methodology used in its calculation. This table describes the average change in a country's sovereign risk over a 1-year horizon, taking into account rating modifiers. The left column shows the country rating at the beginning of the year, and the top column shows the rating at the end of the year. The "SD" column describes the country's selective default, in which case it is assumed that the country will not be able to meet at least part of its obligations. The "NR" column includes countries that were not rated by "S&P" at the end of the year. "S&P" usually separates the country's sovereign risk for local currency and foreign currency. The difference between the latter arises when there is a significant difference between the country's ability to service its debt in local currency and in foreign currency. This phenomenon is typical of countries with floating, non-freely convertible currencies. In the case of Armenia, it is expedient to use the table of changes in the country's sovereign risk in local currency.

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<sup>3</sup> The three credit rating agencies are "Moody's", "S&P" and "Fitch".



**Table 3. Sovereign Local Currency Average One-Year Transition Rates With Rating Modifier (1993-2020) [4]**

(%)	--Rating one year later--											
	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	SD	NR
BB+	67.95	11.86	3.48	0	0.56	0	0.12	0.25	0	0.43	0.19	0
BB	15.75	62.46	14.11	2.35	1.65	1.02	0.47	0	0	0	1.41	0.16
BB-	1.19	8.35	72.52	12.41	2.6	0.76	0.38	0.65	0	0.27	0.54	0.33
B+	0.32	1.32	10.99	67.99	15.6	2.64	0	0	0	0.18	0.55	0.41
B	0	0.16	1.22	11.72	70.6	9.92	1.67	0.37	0	0.08	1.22	3.02
B-	0	0	0.76	2.73	15.41	68.04	6.02	1.52	0.19	1.08	4.12	0.13
CCC+	0	0	0	0.37	5.9	40.22	39.85	7.01	1.48	0.74	4.43	0
CCC	0	0	0	0	2.7	36.04	1.8	24.32	10.81	3.6	20.72	0
CCC-	0	0	0	0	0	2.78	0	0	83.33	0	13.89	0
CC	0	0	0	0	31.58	15.79	0	0	0	10.53	42.11	0

The rating obtained by “S&P” is a forward-looking opinion about the obligor's creditworthiness [5, p. 3], with the highest rating being AAA. 67.95% of the data in the top left of the list means that 67.95% of the countries with a "BB+" rating at the beginning of the year had a "BB+" rating at the end of the year, and 11.86% - a "BB" rating.

This study includes historic data from 1993-2020. The indicators presented in the table were obtained using the following methodology. First, the countries with the same rating in the survey were grouped into statistical pools, regardless of the size of the country or its debt. Each year it was observed how the ratings of the countries in the given statistical pool changed or which countries went to the default, and for each change the specific weight in the given group was calculated. For example, suppose country "A" was first rated in 2000, and it had a "B" rating until the beginning of 2005, a "C" rating in 2006-2010, and defaulted in early 2011. In that case, in 2000-2005 country "A" will be included in the statistical pool of countries with a "B" rating in the left column. During that time, the fact that it kept the same rating will be registered in the cell intersecting the "B" row and "B" column, while its transition in 2005-06 – in the intersecting cell of "B" row and "C" column. Similarly, in 2006-2010 country "A" will be included in the statistical pool of countries with a rating of "C". The event of default in 2011 will be registered in 2000-2005 as well as in the statistical pool with a rating of "C" in 2006-2010.

As the 12-month PD is considered in this case, we will use the above-mentioned table, but I would like to add that “S&P” represents the transition countries' ratings also in 3, 5, 10 and 15 year horizon in the same report. It is clear that in order to determine the PD rating in the ECL calculation, we will need the column of initial country ratings and that of “SD” from this table, which shows the probability of a selective or complete default within a 1-year horizon.

The above-mentioned table presents results deriving from historical series of 1993-2020 and its direct use in the ECL calculation may

contradict logic. For example, in one year 1.41% of countries with a "BB" rating have defaulted, whereas only 0.54% for countries with a "BB-" rating went bankrupt, although the latter presents a lower rating, which should be characterized by a higher default probability. It is clear that these data reflect actual cases, mainly describing countries' tendency to default, rather than predicting it logically. Therefore, it is more expedient to obtain an approximate function based on the actual cases and use its values in the ECL calculation. We will start the smoothing from the "BB+" rating, as the countries with higher ratings have not defaulted.

In this case, the approximation function is:

$$y = 0.0013e^{0.5475x},$$

where by placing the rank number instead of "x" the PD corresponding the given rating will be obtained. The values obtained from the actual and approximated function are presented in Table 4.

In addition, in order to get a more accurate PD, one the maturity of the asset should be taken into account. For example, if at the reporting date we have government securities with a maturity than 1 month, then the PD calculation for the given asset PD should be adjusted by the maturity period. It can be done by calculating the effective interest rate formula as described below.

$$\text{Maturity adjusted PD} = \text{PD annual}^{\text{days to maturity}/365} - 1$$

As for Armenia's rating, it was last revised on October 5, 2020 by Fitch, which is also one of the top 3 credit rating agencies. RA credit indicators in 2018-20 are presented in Table 5.

**Table 4. PD values of the actual cases and those obtained by approximate function**

<b>Approximate function <math>y = a * (e ^ b)</math>, where <math>a = 0.0013</math>, <math>b = 0.5475</math></b>		
<b>Rating</b>	<b>Actual data</b>	<b>Data obtained from approximate function</b>
AAA	0.00%	0.00%
AA+	0.00%	0.00%
AA	0.00%	0.00%
AA-	0.00%	0.01%
A+	0.00%	0.01%
A	0.00%	0.02%
A-	0.00%	0.03%
BBB+	0.00%	0.04%
BBB	0.00%	0.08%
BBB-	0.00%	0.13%
BB+	0.19%	0.23%
BB	1.41%	0.39%
BB-	0.54%	0.67%
B+	0.55%	1.16%
B	1.22%	2.01%
B-	4.12%	3.47%
CCC+	4.43%	6.00%
CCC	20.72%	10.38%
CCC-	13.89%	17.94%
CC	42.11%	31.03%

**Table 5. RA rating for 2018-20 by international rating agencies**

<b>Agency</b>	<b>Rating</b>	<b>Outlook</b>	<b>Date</b>
Fitch	B+	stable	Oct 05 2020
Fitch	BB-	negative	Apr 03 2020
Fitch	BB-	stable	Nov 22 2019
Moody's	Ba3	stable	Aug 27 2019
Moody's	B1	positive	Mar 09 2018

The above refers to the PD calculation of the country's sovereign risk-related assets. A similar approach can be used to evaluate private sector PD using 26<sup>th</sup> table of the 2020 Annual Global Corporate Default And Rating Transition Study"[6] published by S&P. However, only a few companies operating in Armenia are rated by international rating agencies, so it is necessary to use a different approach to give them a rating. Of course, it would be desirable for companies that do not have an external rating to have an internal rating system that would be used to evaluate the PD. Unfortunately, the latter is associated with high costs and the current financial market of Armenia do not present great demand for such a service. In this case, it may be appropriate to apply international best practice, according to which companies operating in the country can not have a higher rating than the that of the country. This phenomenon, called the "sovereign ceiling", is based on the fact that in most cases the proper functioning of companies is primarily linked to the situation in the country. If the country is declared bankrupt and the welfare of the population decreases, the company is unlikely to continue its proper functioning and service its financial obligations [7]. Typical examples of this are insurance and investment companies. However, multinational and decentralized companies may be an exception.

In this case, companies with no external rating are considered to be 1 level lower than the rating of the country, and in case of strict assessment - 2 ratings lower. It is also suggested to add a component of

PD coming from the company's business sector when evaluating the private sector PD according to Moody's EDF model [3], otherwise the same PD is used for all non-rated companies.

### **Conclusion**

Accurate calculation ECL as defined in IFRS 9 "Financial Instruments" is essential, given the current size of financial instruments in the Republic of Armenia and their development trend. In the absence of a strict guidance to the ECL calculation, it is proposed that in case of PD assessment, which is one of the three components of ECL, to rely on the country's external rating, which is the result of the latest assessment of 3 credit rating agencies.

By smoothing the the actual cases of probability of default recorded in the S&P's report, we can obtain a approximate function that will characterize the probability of default. The results obtained with the approximate function is subject to adjustment to the maturity of the financial instrument. For private companies that do not have an external rating, it is recommended to select a PD that is 1 level below the country rating and to add a PD component deriving from the company's field of activity.

The above-mentioned approaches together form a robust PD assessment methodology, which allows to make a optimal ECL calculation based on reasonably available information.

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**ՀՀ ԴԵՖՈՒՆՏԻ ՀԱՎԱՆԱԿԱՆՈՒԹՅԱՆ ԳՆԱՀԱՏՈՒՄԸ  
ՖՀՄՍ 9 «ՖԻՆԱՆՍԱԿԱՆ ԳՈՐԾԻՔՆԵՐ» ՍՏԱՆԴԱՐՏԻ  
ՀԱՄԱՏԵՔՍՏՈՒՄ**

**Բանալի բառեր** - ակնկալվող պարտքային կորուստ, դեֆոլտի հավանականություն, աստիճանային համահարթեցում, արդյունավետ տոկոսադրույք, երկրի սուվերեն ռիսկ, սուվերեն ռիսկի առաստաղ

ՖՀՄՍ 9 «ֆինանսական գործիքներ» ստանդարտը պահանջում է ֆինանսական գործիքների գծով ձևավորել ակնկալվող պարտքային կորստի պահուստ, սակայն չի սահմանում վերջինիս հաշվարկի հստակ ուղեցույց: ԱՊԿ հաշվարկի 3 բաղադրիչներից մեկի՝ դեֆոլտի հավանականության գնահատման համար սույն հոդվածը առաջարկում է հիմնվել երկրի վարկարժանության վարկանիշի և «S&P»-ի կողմից հրապարակվող, դեֆոլտի հավանականության հետազոտության տվյալների համահարթեցված և մարման ժամկետով ճշգրտված ցուցանիշների վրա:

**Генрик Манукян**  
Магистрант, Французский университет в Армении

## **ОЦЕНКА ВЕРОЯТНОСТИ ДЕФОЛТА РА В КОНТЕКСТЕ СТАНДАРТА МСФО (IFRS) 9 «ФИНАНСОВЫЕ ИНСТРУМЕНТЫ»**

**Ключевые слова** - ожидаемый кредитный убыток, вероятность дефолта, экспоненциальное сглаживание, эффективная процентная ставка, суверенный риск, страновой потолок

МСФО (IFRS) 9 «Финансовые инструменты» требует создания резерва на ожидаемые кредитные убытки по финансовым инструментам, но не дает четких указаний по его расчету. Для оценки одного из трех компонентов расчета ожидаемых кредитных убытков - вероятности дефолта в статье предлагается опираться на рейтинг кредитоспособности страны и данные ежегодного исследования S&P по дефолту с некоторыми корректировками.

*Submitted: 01.10.2021*

*Accepted for publication: 15.11.2021*



## **ANALYSIS OF SOME POSITIVE AND NEGATIVE ASPECTS OF RA PUBLIC PROCUREMENT**

**Abstract:** In this article, is covering some problems during the participation of the private sector in public procurement, from the submission of bids to the execution of the contract, is made small references to the problems that arise along the way, their possible solutions, artificial obstacles and other details.

**Keywords:** Public procurement, problems, private sector, application, electronic system, guidelines, laws, government agency, obligation, entrepreneur.

**JEL classification:** K23

**Research aim:** identify shortcomings in the procurement process in Armenia.

**Research novelty:** proposals were made to improve the procurement regulation process in the Republic of Armenia.

### **Introduction**

According to the RA Procurement Legislation, any natural person, individual entrepreneur or legal entity can participate in state procurement. Exceptions are not so many and, as a rule, do not apply to a wide range of people willing to participate. There are some exceptions and they refer to persons:

- Who were declared bankrupt by the court on the day of submitting the application;
- As of the day of submitting the application, have up to one percent of the overdue liabilities for the revenues controlled by the tax

body, but not more than fifty thousand AMD of the Republic of Armenia;

- Who or whose executive representative during the last three years started from bid submitting day has been convicted for terrorism financing, child exploitation or human trafficking.

However, public procurement regulation requires more in-depth analysis.

### **Research Results**

As we have seen, there are not many exceptions. Almost everyone can participate in public procurement. However, the procedure for participating in public procurement, while becoming easier, is still difficult. The requirement to submit some documents, which was once the basis for the rejection of the application, has now been removed from circulation altogether or at least classified as a non-mandatory document.

We emphasize more than once that the legislative system of public procurement is constantly changing and is constantly being tested.

Public procurement is carried out in two ways: paper-based or electronic. This division was made on the basis of the RA Government Decision N 386-N of April 6, 2017 and, to put it mildly, is a little incomprehensible. Why the purchases of kindergartens, schools, theaters, hospitals, some other NGOs, SNCOs are paper-based, when in our time the full integration of the electronic system can be a way to promote the business environment? Paper-based type procurement has many risks, it is not practical, and finally does not correspond to the spirit of the 21st century.

The electronic public procurement system is "a system that ensures the implementation of electronic purchases through the website "www.armeps.am" ". The invitations published via this system appear in the webpage "www.procurement.am". This web address is the same as "www.gnumner.am".

Anyone wishing to participate in public procurement electronically must register on the "www.armeps.am" website as a supplier, which is not a difficult task. The first complication arises when the supplier tries to participate in the first electronic purchase. It immediately becomes clear that it is necessary to study a number of guidelines, laws, legislative acts and a whole invitation. Because of this, many businesses pay for procurement organizations or individuals to prepare and submit document packages for themselves. Publishing the same invitation is also a headache for the procurement coordinator. Government agencies have to retain trained staff, an entire unit, or in some cases an entire department, to regulate procurement. The source of these and other problems is the result of improper or outdated software code of the above electronic system.

We will try to develop the view that just creating an optimal, easy, modern, accessible electronic system for use can solve a number of problems in a short time.

Transferring paper-based public procurement to a fully electronic field and creating an accessible electronic system can reduce a huge portion of state budget expenditures. Reducing the number of procurement coordinators can be a basis for easing the state's exaggerated apparatus. This reform will increase the the private sector integration level in public procurement. As a result of all this, both the state and the business environment will benefit.

Can the electronic system be considered the basis of the problems in public procurement? Definitely can not. The electronic system has nothing to do with, for example, incorrect conclusion of the contract, delay of money transfers, incorrect or incomplete drafting of technical specifications of procurement items, acquisition of one procurement item instead of another procurement item, artificial barriers, corruption, unfounded and untimely actions. This series can be continued more. Each of the problems needs in-depth study. This is one of the reasons for the constant changes in the procurement legislation.

Another reason for unprofessional public procurement is the bad work of improperly trained employees. As a result, the state or the community and the supplier suffer financial and time losses. In many cases, a mistake made by a procurement specialist can lead to appeals or litigation. As a result, financial and time losses for both parties become inevitable.

Imagine a supplier who has invested a lot of money to import an item from a foreign country and deliver it to the customer. Imagine a customer whose issue solutions like for example garbage disposal or transportation issues depend on the item offered by the supplier. The human factor of the procurement coordinator, the wrong operation of the electronic system can be costly for the customer, the supplier and, consequently, for the ordinary citizen.

In fairness, it should be emphasized that currently the level of improvement in public procurement is incomparably higher, if you will, than it was a few years ago. This is evidenced by the constant expansion of the supply chain and only one of the latest changes, according to which the threshold for applications for participation in procurement in excess of ten million, was raised to twenty-five million by the government.

Some of the problems in the field of procurement are not general. They are more localized and stem from the work in progress being carried out by a specific government agency. In many cases, the entire state system suffers as a result of the mistakes of one agency. At the same time, in addition to financial or temporal loss, the damage has a direct impact on the state's reputation. Good reputation should always be a priority.

## **Conclusion**

Thus, some current issues of RA public procurement we can emphasize, such as defects of the electronic system, unpreparedness of procurement specialists, omissions made in the procurement process

by specific bodies of the state system, omissions in public procurement affect the state's reputation in the business environment. In many cases, reputation is more important than financial losses.

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**Արշակ Ներսիսյան**

«Կոնվերս բանկ» ՓԲԸ գնումների մասնագետ

**ՀՀ ՊԵՏԱԿԱՆ ԳՆՈՒՄՆԵՐԻ ՈՐՈՇ ԴՐԱԿԱՆ ԵՎ  
ԲԱՑԱՍԱԿԱՆ ԿՈՂՄԵՐԻ ՎԵՐԼՈՒԾՈՒԹՅՈՒՆ**

**Բանալի բառեր** - պետական գնումներ, խնդիրներ, մասնավոր հատված, դիմում, էլեկտրոնային համակարգ, ուղեցույցներ, օրենքներ, պետական մարմին, պարտավորություն, ձեռնարկատեր

Հոդվածում անդրադարձ է կատարվում մասնավոր հատվածի կողմից պետական գնումների մասնակցությանը: Վերլուծվել են այդ ճանապարհին առաջացած խնդիրները, դրանց հնարավոր լուծումները, ինչպես նաև արհեստական խոչընդոտները: Քննության է առնվել պետական գնումների կարգավորման ՀՀ օրենսդրական դաշտը:

## **ОБ АНАЛИЗЕ НЕКОТОРЫХ ПОЛОЖИТЕЛЬНЫХ И ОТРИЦАТЕЛЬНЫХ СТОРОН ГОСУДАРСТВЕННЫХ ЗАКУПОК РА**

**Ключевые слова** - государственные закупки, частный сектор, заявка, электронная система, руководящие принципы, законы, государственный орган, обязательство, предприниматель

В статье рассматривается участие частного сектора в государственных закупках. Были проанализированы проблемы, возникшие в этом процессе, их возможные решения, а также искусственные препятствия. Исследована законодательная сфера регулирования государственных закупок РА.

*Submitted: 11.10.2021*

*Accepted for publication: 15.11.2021*

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## **EFFECT OF COVID-19 ON REAL ESTATE PRICE CHANGE**

**Abstract:** Rising real estate prices are usually accompanied by high economic growth, and vice versa, the sharp decline in housing prices affects consumer confidence, the decline in construction, consequently creates low economic growth. This situation is altered also by external influences, such as the Covid-19 pandemic. The article analyzes the changes in real estate prices in Armenia, which have been affected by the 2020-2021 Covid-19 pandemic. Actual real estate price data were collected from online sources. The study used Laspeyres price indexing to understand price change. The analysis shows that the growing Covid-19 pandemic cases have had a significant impact on the real estate price index, leading to lower house prices.

**Keywords:** real estate, Laspeyres Price Index, price change, house price index

**JEL code:** R31

**Research Aim:** Construct and analyze Covid-19 effect on house prices via Laspeyres price index

**Research Hypothesis:** There will be a lagged effect between covid-19 cases and house prices. This means that when Covid-19 cases rise then after some period the house prices will decrease

**Research Novelty:** Analysis is done on a scraped dataset of houses in Yerevan for the years 2019, 2020 and 2021 and house price change explained by the of Covid-19 rates

## **Introduction**

Real estate represents a significant portion of most people's wealth, and has a direct connection with economic growth of the country. There are many factors that cause house price changes every year, however there are rare events which effects are not straightforward from the beginning. In 2020, almost every country in the world experienced a Covid-19 pandemic which had severely impacted lives of human beings as well as economies of the countries. Armenia has been one of the victims of Covid-19, and this analysis is concentrated on effects of the pandemic on the house prices.

### **Factors affecting Armenian real estate market**

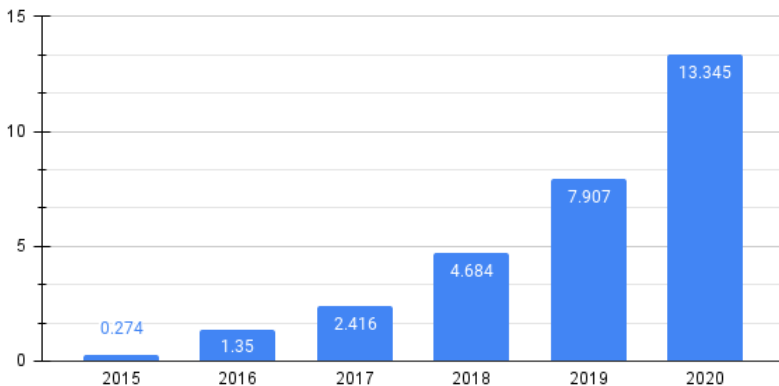
Armenian real estate market is affected by many macro and micro economic factors as well as external forces such as pandemics and anomalies. During 2020 Armenian real estate market was subjected to several external "shocks". The first was the COVID-19 pandemic spread in the world at the beginning of the year, to which some restrictions were introduced. Then the war in Artsakh and post-war political crisis. Transactions in the real estate market have been affected by the anticipation of changes in the legislation on the repayment of interest on mortgage loans at the expense of income tax, in particular with regard to the abolition of this mechanism. The stated factors were directly connected with the decline of tourism in Armenia. According to the data of the Statistical Committee, 375 216 tourists visited Armenia in 2020, which is 80.2% less than in 2019. The passive tourism turnover had caused the landlords to lower the prices of rental houses [1].

In 2020, the total number of transactions in the real estate market amounted to 158,659, which was 27,402 or about 15% less than the previous year. In the first two months of the year, the number of transactions increased by an average of 21% compared to the same months of 2019, but in March the annual growth rate decreased to 1.5%, and already in April the number of transactions dropped quickly to



2,892, 5.6 times less compared to the same month of the year. The reason was the declared state of emergency due to the COVID-19 pandemic and strict restrictions, which came into force on March 16, 2020. In general, uncertainty due to the COVID-19 pandemic and economic constraints has been a significant factor in the activity of the real estate market, which has forced people to refrain from large financial costs for some time. However, after the removal of severe restrictions on movement, the number of transactions since May has increased almost 4 times compared to April, remaining 28% lower than in May 2019. The monthly growth continued until October, from 14,397 transactions registered in June to 18,239 transactions in September. Moreover, the number of transactions registered in July 2020 already exceeded the index of the same month of the previous year by about 1%. In September, the growth rate compared to September of the previous year reached 17.1% [1].

Mortgage Income Tax Refund Program had positive effects on the houses causing overall activness in the market. (See Figure 1)



**Figure 1. Mortgage Income Tax Refund in billion drams**

Other factors include but are not limited to the devaluation of the dram against the US dollar. For comparison, if in January of in 2021 the

average exchange rate of 1 US dollar was 521.2 drams, compared to 479.21 drams in January 2020.

### **Effect of war conditions**

The academic research papers describe the external factors and the determinants of house prices throughout the years. One of the determinants of it is the state of war conditions.

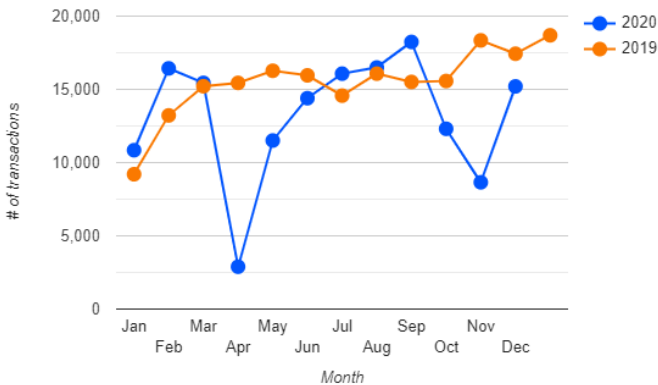
Robert J. Shiller (2007) wrote a paper called “Understanding recent trends in house prices and home ownership”, states that during World War II the residential construction had been sharply curtailed and the percentage out of GDP was as low as 4.3%, below the average of postwar 4.8%. This led to decreased houses prices and the situation was altered after the phenomenal baby boom, which translated into a sharply increased demand for housing after the war had decreased the supply. Overall the paper described the negative effect of war on housing market and the increasing demand of post war situation [2].

Katharina Knoll, Moritz Schularick and Thomas Steger (2014) also described the relationship of war and house price index in their paper called “No Price Like Home: Global House Prices, 1870–2012”. They discovered that during the World War I, Belgian house price index fell nearly by 60% and reached the same level only mid-1960s. Same pattern is observed during the World War II, where the price index decrease was around 18% [3].

The 44-day Artsakh war of 2020, stopped the annual growth trend of the real estate market. In October, a 32.9% decrease in transactions was registered, a 32.5% decrease in the same month of the previous year compared to the previous month. The rate of decline was maintained in November, when the number of transactions reached 8,654.

In parallel with the hostilities, second wave of the outbreak of the COVID-19 had an impact on decline. At the same time, in December, transactions increased by 75.7% compared to the previous month, but,

nevertheless, transactions were 18.7% less than in December of the previous year [1]. (See Figure 2)



**Figure 2. Number of transactions in the real estate market in 2019 & 2020**

### **Background information and Data description**

Resources for the analysis are collected from the publicly available online sources. The data gathering is done via web-scraping techniques, that is, by automatically getting or importing specific information from the website. The data is mainly scraped from real-estate.am and myrealty.am websites. There are observations for each month and the points of interests are the listed houses and the respective prices. The time range of the data is starting from April 2019 up to April 2021.

### **Methodology**

We have calculated a House Price Index (HPI) from the available data. It measures the price changes of residential housing as a percentage change from some specific start date (which has HPI of 100) and can be used not only for macroeconomic analysis but also as a guide for the individual buyers, who are searching for the home. The index is calculated using the Laspeyres Price Indexing method [4].

The formula for the Laspeyres Price Index is as follows:

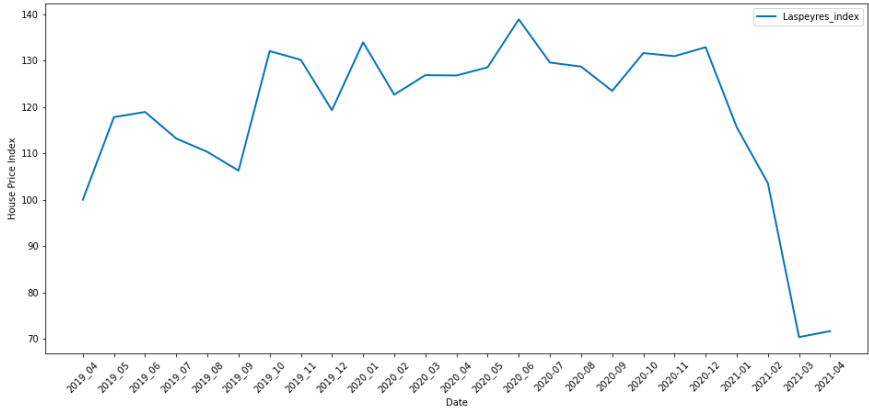
$$\text{Laspeyres Price Index} = \frac{\sum(P_{i,t} \times Q_{i,0})}{\sum(P_{i,0} \times Q_{i,0})} \times 100$$

Where  $P_{i,0}$  is the price of the individual item at the base period and  $P_{i,t}$  is the price of the individual item at the observation period.  $Q_{i,0}$  is the quantity of the individual item at the base period.

### **Analysis**

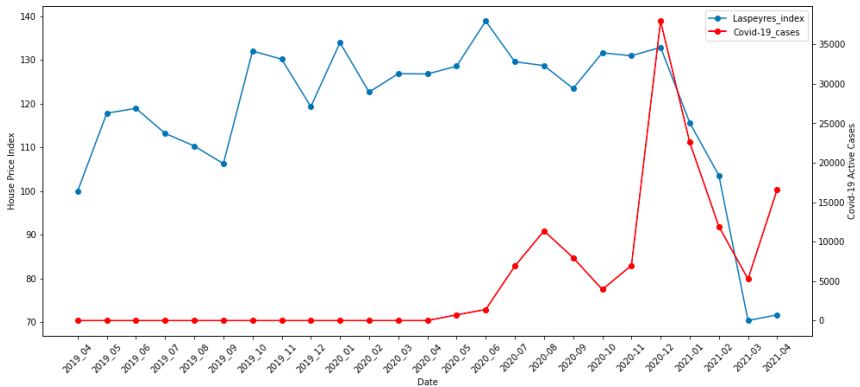
To calculate the Laspeyres index it is important to define the base period. For this analysis, the price of the previous month is taken as base. For instance, to calculate the HPI for the May of 2020, I took the house prices of April 2020 as a base and applied the formula to calculate it. The key explanations for the index are: If HPI is more than 100 this means that house prices have increased compared to previous month, if HPI is 100: house prices have not changed and if HPI is less than 100: the house prices have decreased. Python programming language is used to perform calculations and visualization. Graph 1 illustrates the House Price Index values for the overall date range. There is an increasing trend from April 2019 up to May of 2020 following a sharp decrease after November 2020. (See Figure 3)

The Covid-19 effect should be observed as well therefore it is good to compare the House Price index with active cases of the pandemic in Armenia.



**Figure 3. House Price Index during 2-year period**

It is expected that because of increasing cases, economic activity of people will decrease and big purchases such as houses will decrease as well. Moreover, the Government has imposed restrictions to prevent Covid-19 spread, which even more discourages economic activities. All of the above will lower the real estate demand and prices will fall. Graph 2 illustrates the relationship described. After the high increase of Covid-19 cases starting from October 2020, falling of House Price Index is observed. Eventually the blue line crosses the 100 HPI baseline and goes lower bringing a decrease of real estate prices. Even though starting from December 2020 the Covid-19 cases are decreasing, change of HPI is only seen from March of 2021, which is the lagged result.



**Figure 4. House Price Index vs Covid-19 cases**

### Conclusion

In this paper we have tried to understand the effect of Covid-19 on the House prices of Yerevan. Data is gathered from online sources and Laspeyres price indexing method is used to calculate House Price Index (HPI) for the available period. As illustrated in the analysis section higher Covid-19 cases drives the HPI below 100 baseline making house prices to fall.

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**Մարկ Համազասպյան**  
տնտեսագիտության բակալավր, Հայաստանի Ամերիկյան  
Համալսարան

## **COVID-19- ի ԱՋԴԵՑՈՒԹՅՈՒՆԸ ԱՆՇԱՐԺ ԳՈՒՅՔԻ ԳՆԵՐԻ ՓՈՓՈԽՄԱՆ ՎՐԱ**

**Բանալի բառեր** - անշարժ գույք, Լասպեյրեսի գների ինդեքս, գնի փոփոխություն, անշարժ գույքի գների ինդեքս

Անշարժ գույքի գների աճը, որպես կանոն, ուղեկցվում է տնտեսական բարձր ակտիվությամբ: Եվ հակառակը, բնակարանների գների կտրուկ անկումն ազդում է սպառողների վստահության վրա, նպաստում է շինարարության անկմանը և ձևավորում է տնտեսական ցածր աճ: Նման իրավիճակը մեծապես փոփոխվում է արտաքին ազդեցություններից՝ ինչպիսին է, օրինակ, Covid-19 համավարակը: Հոդվածում վերլուծվում են Հայաստանում անշարժ գույքի գների փոփոխությունները՝ հաշվի առնելով 2020-2021 թթ.-ի ընթացքում Covid-19 համավարակի ազդեցությունները: Անշարժ գույքի գների փաստացի տվյալները հավաքագրվել են առցանց մատչելի աղբյուրներից: Հետազոտությունում օգտագործվել է Լասպեյրեսի գների ինդեքսավորումը, գնային փոփոխությունը հաս-

կանալու համար: Վերլուծությունը ցույց է տալիս, որ Covid-19 համավարակի ընթացքում համաճարակային իրավիճակի սրումը էական ազդեցություն է թողնում անշարժ գույքի գների ինդեքսի վրա՝ հանգեցնելով բնակարանների գնանկմանը:

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## **ВЛИЯНИЕ COVID-19 НА ИЗМЕНЕНИЕ ЦЕН НА НЕДВИЖИМОСТЬ**

**Ключевые слова** - Недвижимость, индекс цен Ласпейреса, изменение цен, индекс цен на недвижимость

Рост цен на недвижимость обычно сопровождается высоким экономическим ростом. И наоборот, резкое снижение цен на жилье отрицательно сказывается на потребительском доверии, в свою очередь спад строительства приводит к низкому экономическому росту. Эту ситуацию сильно меняют внешние воздействия, такие, как пандемия Covid-19. В статье анализируется изменение цен на недвижимость в Армении, на которое повлияла пандемия Covid-19 2020-2021 годов. Данные о фактических ценах на недвижимость были собраны из онлайн-источников. В исследовании использовалась индексация цен Ласпейреса, чтобы понять изменение цен. Анализ показывает, что растущая пандемия Covid-19 оказала значительное влияние на индекс цен на недвижимость, что привело к снижению цен на жилье.

*Submitted: 18.10.2021*

*Accepted for publication: 15.11.2021*



## **TECHNOLOGY AS A COMPETITIVE ADVANTAGE IN A BANKING MARKET**

**Abstract:** Until recently, much of the industry's attention has been on improving Return on Equity (ROE) as many financial institutions deal with economic uncertainties, restrictive regulatory environment, intense competition, technology-driven disruptions, and legacy processes to meet changing customer requirements. However, more and more banks are putting a new focus on innovation as many financial institutions re-deploy savings from efficiency initiatives and strategic cost programs into investments — including in technology [1].

**Keywords:** Banking, technology, API, FinTech, digital banking system

**JEL classification:** G21, G32, D53

**Research aim:** find out how technology / digital technology may have an impact in terms of increasing competition and contestability of banking markets

**Research hypothesis:** Study COVID-19 pandemic influence and technology transformations in large financial institutions

**Research novelty:** The strategic importance of technology as a driver of competitive advantage

### **Introduction**

The new decade calls for a renewed outlook to building economic moats. There was once a time in the banking industry when ‘product and pricing innovation’ were the popular means of differentiation. After a time, when most of the banks adopted the product and pricing flexibility,

the innovative banks looked to technology investments to drive efficiency and growth. Today, the banking sector in most of the countries is competitive and challenging. The product, pricing and efficiency have become table-stakes, and no longer adequate to assert a competitive edge among the peers.

The neo-normal for the banks is to champion the trifecta of Customer Experience (CX), Omnichannel engagement and a Platform business model [2].

- The CX principles put the customer at the center of transactions, conversations, products and services. The endeavor involves reimagining the customer journeys to make banking experiences contextual, ubiquitous and invisible.
- The omni-channel engagement takes a holistic approach to channel modernization with an objective to create coherent experiences across all the channels. This requires an application to orchestrate omnichannel administration.
- The final state of platform business model will involve the bank to curate a platform wherein their own, and 3<sup>rd</sup> party products and services can be listed, explored and consumed by customers.

An interesting observation is that, technology has a vital role to play in building each one of these economic moats – CX, multi-channel integration and platform business models. Banks recognize the role of technology in amplifying the effectiveness of their business transformation initiatives as well as the impact on their level of competitiveness.

### **Literature review**

Initially, the adoption and utilization of technology by banks was primarily to automate the back office, thus, computers were introduced as ledger-posting machines (Kannabiran and Narayan, 2005: 365). With transactional banking being embryonic of e-banking use, compliant transactional banking systems need to cater for customers' specific

business processes and workflow through integration with customers' Information Communication Technological systems. Concurrently, business environments continue to experience heightening deregulation and regulation, technological developments, globalization and consumer preferences and expectations, disintermediation and remediation, intertwiningly [3]. Amidst, these contemporary, modified and complicated service and product delivery conditions, across industries, e-banking stand to drive global banking industry and business at large (Mia et al., 2007: 36). The concept of technological marketing is therefore inevitably proliferated in the new economy [4] and abounds a large part of the contemporary marketing practices as firms strive for superiority in the face of extreme competitive environments [1], [5], [6]. Conspicuously, the financial sector has continuously embraced heightening competition, globalization and incessant technological developments, consequently spurring an increase of links and networks within the industry [7].

### **Research Methodology**

Competitive advantage accrues to the firm that is best able to deliver the right product or service to the marketplace at the right price and time. The question that begs is how successful firms incorporate technology into their corporate and business strategies to achieve competitive advantage and also the organizational structure that supports and flows from the strategy.

A second way to achieve competitive advantage is to use information technology as organizational support for a firm's products or services (whether technology-based or not).

Banking is undergoing transformation from being based in physical branches to using information technology (IT) and Big Data, together with highly specialized human capital. Even before this transformation began, banks and markets had become intertwined, with a higher proportion of intermediary activities becoming market based. Banks face

greater competition from other intermediaries, increasingly digital, in their core businesses, such as payment and advisory services. A change in the use of technology in developing new services and business models has been unfolding with the rise of the FinTech sector, which can be considered as the use of innovative information and automation technology in financial services.

Digital technology may have a large impact in terms of increasing competition and contestability of banking markets. Banking will move toward a customer-centric platformbased model, and incumbents will have to restructure [8]. This digital disruption offers the potential to improve efficiency with innovation, enhanced supply diversity, and a more competitive financial system. This disruption will put pressure on the margins of incumbents, perhaps leading to increased risk taking, and will start a competition to capture the rents in the sector.

The COVID-19 pandemic accelerated technology transformations in large financial institutions, as employees moved to remote work and as customers shifted to digital channels. Customers have come to expect uninterrupted, personalized digital products and services, adding to pressure as large financial institutions rework processes, accelerate investments, and explore new applications. Technology transformation has been ongoing for some time, and the barriers and challenges are well known: the scale and cost of major upgrades, the complexity created by legacy technology, institutional inertia, and regulatory and compliance requirements.

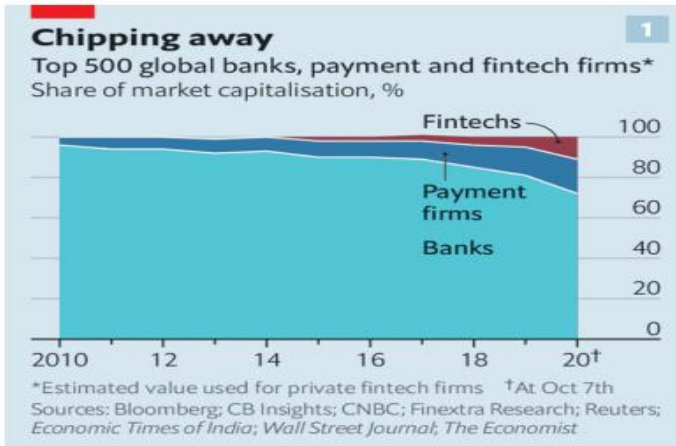
### **Research results**

Though many of these underlying challenges persist, attitudes are shifting; leaders recognize the need to move more quickly and to try new things. At the same time, technology has advanced in ways that make fundamental transformations faster and less costly, while also expanding opportunities for experimentation.

At the Financial Services Leadership Summit held on November 10–12 at 2020, financial institution directors and executives, regulators, investors, and EY experts discussed how financial institutions have adapted to the pandemic and the options for firms as they accelerate broader systems upgrades to support new approaches. They also discussed the implications that the path forward has for talent and culture needs. This View Points synthesizes key themes that emerged in conversations in advance of and during the summit. The View Points explores the landscape from the following perspectives:

- Technology transformation is a strategic imperative
- Ways of addressing critical technology needs are evolving
- The changing nature of work has implications for talent and culture
- Evolving risks and opportunities require effective governance.
- The threat from tech companies may be approaching a tipping point Fintech, and big tech companies continue to expand financial services offerings and gain market share (see The Economist’s analysis in Figure 1, below), and the various emerging models in the sector may represent increased opportunities for them to do so.

Technology companies do not have to offer financial services of their own; many are embedding offerings from insurers, banks, and challengers directly in their platforms. The institutions have already got the applications of convenience for many customers, and they can just be the portal and get the transaction and customer data. The challenge for financial institutions is figuring out how to maintain the customer interface and prevent that. Today Armenian digital payment sector is well developed to meet the demands of not only its customers but also international standards.

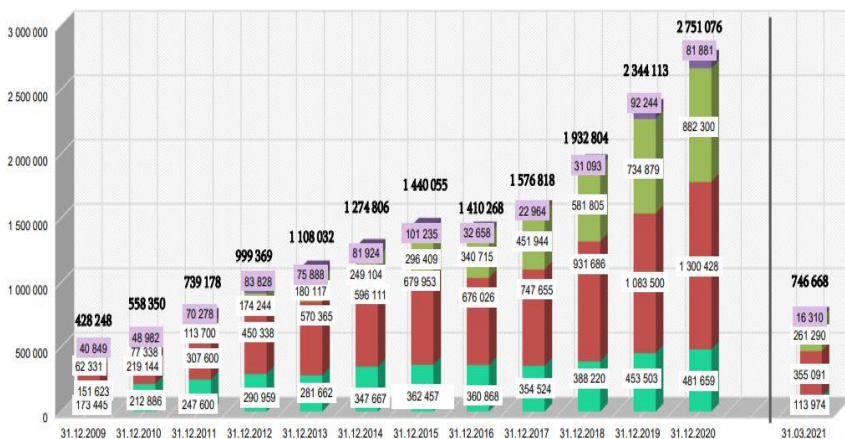


**Figure 1. The Economist's analysis, The Economist, October 8, 2020**

However, because of local mentality, particularly the habit of paying cash, these technologies are mostly used by the young generation or tech-savvy adults only. The situation changed by pandemic, changed the perception of online payment systems wholly.

Currently, various delivery services and online stores are actively promoting their services, encouraging people to pay online in Armenia. The increase of non-cash payments, especially in online trading, utility payments against the impact of the current situation is natural. It should be noted that the government and the Central Bank of the Republic of Armenia have repeatedly strongly recommended non-cash payments.

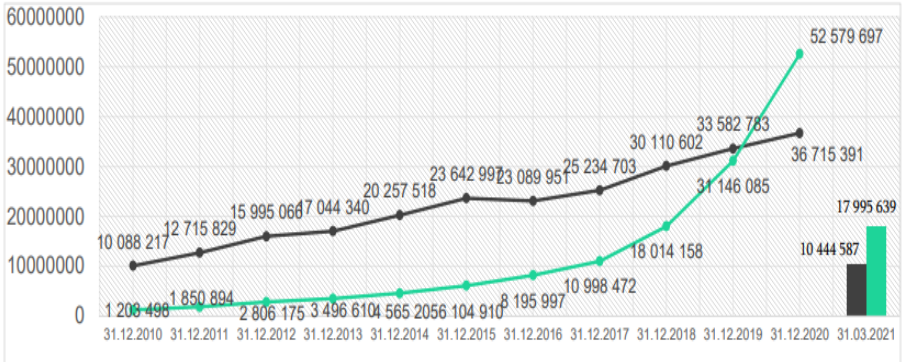
Many banks, in turn, offer online stores to use their specially developed tools to accept card and QR payments. These solutions allow accepting card payments without any additional investments and integrations – a retailer may not even have a website.



**Figure 2. Volume of card operations via different payment systems**

The operations were mostly made via Visa cards, and compared with the same period of the last year it was increased by 5,84 %. The next is via MasterCard, and in this year, it was increased by 16,7 %. We see that in the first quarter of 2021, the operations via cards were 746,668 million AMD, and compared with the same period in 2020 was increased by 15.9 %: Arca was decreased by 1.8 %, Visa increased by 18.3 %, MasterCard by 26.3 %, Other cards decreased by 23.3 %.

In the first quarter of 2021, the number of operations in cash was 10, 444,587 AMD, and compared with the same period of the last year was increased by 12.3 %. Non-Cash operations number was 17,995,639 AMD and compared with the same period of the last year were increased by 73.5 %.



**Figure 3. The volume of cash and non-cash operations**

Compared with the previous year period, the online transactions in Armenia registered a noticeable growth of 14.6% during the first 6 months of 2020 with the amount of 5 769 900 000 AMD or 11.8 million USD. Moreover, the majority of Armenian online transactions are concentrated in Yerevan. During the first 2 quarters, the online transactions in the capital reached 5 billion 712 million AMD or 99% of the total amount. According to the Central Bank of Armenia statistics, online transactions with a banking card have increased more than ten times during the last 5 years from 25 billion AMD to 338 billion AMD during the pre-pandemic 2019.

Particularly, online payments were made for vehicle orders (during the 2019 car boom), however, in January 2020, when Armenian buyers stopped buying vehicles abroad, the online trade turnover was almost as high. In December 2019, the number of transactions was 44 billion AMD, and in January 2020 – about 34 billion. Today more people pay online for utilities, food, education, or entertainment.

The online payment infrastructure in Armenia is well developed to allow businesses to integrate new tools into their infrastructures and be competitive and successful in this digital era. In 2018, the global FinTech sector was estimated at \$127.66 billion and is expected to reach a



\$309.98 billion annual growth rate (24.8%) by 2022. One of the strategic directions of banks is the introduction of the latest technological solutions, which is an ongoing process.

According to the official, customers' expectations and demands push the market towards the latest FinTech trends, moving the banking system to a faster, safer, contactless, and cashless future. From a cybersecurity point of view, the Armenian online banking system is secure enough to meet the highest technological demands of international online banking standards.

Armenian online banking system is digital transformation oriented now and this leads to grand changes in banking labor force reformation – demands for tech and finances savvy specialists rise, reforming the whole system. As the coronavirus closes the doors of many banking branches, digital banks are using this feature to change the way customers view the digital banking system. In Armenia banks like Evoca, Ineco, Ameria and other lead companies implement innovative technologies widely towards the online banking system. They are confident that this positive change in the virus-driven mobile banking system will have a long-term impact in the years to come.

The digital disruption of banking promises to lead to a general increase in efficiency and service by helping to overcome information asymmetries (using big data and AI/ML techniques and blockchain technology), providing a user-friendly consumer interface and a higher standard of service, and ultimately replacing obsolete technology.

Banking will thus move to a customer-centric platform-based model, and that can be a new step in competing with each other. All these changes present challenges to incumbents since they will have to update their technological platforms, reduce branch overcapacity in the current low-profitability environment (particularly in Europe and Japan, where there are still legacy assets to dispose of), and try to reach the new standard of service by competing with the new entrants that are encroaching on the most profitable lines of business. Incumbents will

have to restructure, and consolidation will occur. Incumbents will also face heavy regulatory scrutiny and compliance duties and will have to overcome the tremendous damage to their reputation caused by 2007-2009 financial crisis. They will face the dilemma of whether to compete head-to-head or cooperate with entrants. In the case of FinTech, this dilemma will be resolved by acquisition or partnership.

There is no doubt that the short-run impact of the digital disruption will be to erode the margins of incumbents and increase the contestability of banking markets. The long-run impact will depend on what market structure ultimately prevails. Banking could move from the traditional oligopoly to a new form in which a few dominant platforms control access to a fragmented customer base if a few BigTech firms, together with some platform transformed incumbents, monopolize the interface with customers and appropriate rents.

Many banks are also investing in the development of application programming interfaces. An API is a set of technology guidelines and tools that enables software developers to build connections between two systems, allowing for speedier transactions and facilitating data access and analysis. For banks, APIs represent an important improvement in tools such as payment hubs and treasury workstations. APIs are increasingly becoming an essential part of banks' corporate offerings because they solve some challenges in meeting individual companies' needs around bank connectivity. APIs also have the potential to accelerate transactions, just in time for real-time payments. "API is at the heart of real-time banking," Citi's Bose said. "We are seeing a significant amount of interest from our clients."

Banks may offer APIs directly, such as the payment APIs Citi offers customers of its CitiConnect platform. Fintechs are working with banks to help clients optimize their cash management and other capabilities. From the point of view of banks and technology providers, APIs can minimize issues of having to tweak systems for each separate corporate client. For banks, which are seeing disruption to their business, as well

as high levels of competitiveness, the possibilities inherent in new technologies offer a way to retain existing customers and attract new ones - if only they can keep abreast of the rapid pace of digital change, which can lead to raising their competitive level.

### **Conclusion**

Technology is driving competitive advantage in financial services. It is clear that there is now a need more than ever to reimagine the role of technology within the banking and financial sector, and it's imperative for businesses to understand how to utilize new platforms and understand the impacts of new regulations in order to stay competitive and compliant in a crowded market. Technology is the essential variable determining competitive advantage in financial services today. This has not always been true; things like profitability, history, and scale all played much bigger roles before, but that is not the case anymore.

The strategic importance of technology as a driver of competitive advantage and the scale of transformation efforts means that technology continues to command significant board attention and oversight. Boards must ensure technology transformation is getting sufficient investment and is tied to the broader strategy, while also ensuring risks are managed effectively. As banks invest to upgrade systems that will drive competitiveness, boards need to remain abreast of rapidly changing possibilities.

Armenian online banking system is digital transformation oriented now and this leads to grand changes in banking labor force reformation – demands for tech and finances savvy specialists rise, reforming the whole system. Compared with the previous year period, the online transactions in Armenia registered a noticeable growth of 14.6% during the first 6 months of 2020 with the amount of 5 769 900 000 AMD or 11.8 million USD.

Banks globally recognize the need for digital transformation as their end-user expectations change. Putting off digital transformation is no

longer an option as the Covid-19 pandemic has dramatically accelerated this shift, changing end-user expectations, and is now changing the competitive landscape. Banking is one of the industries, which involve both high information content of the product and high information intensity of process. The nature of the industry implies that it is highly competitive. Therefore, in order to cope up with the rising competition Banks can reflect on the use of API, FinTech and other innovative and digital transformations as a competitive tool.

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## ՏԵԽՆՈԼՈԳԻԱՆ ՈՐՊԵՍ ՄՐՑԱԿՑԱՅԻՆ ԱՌԱՎԵԼՈՒԹՅՈՒՆ ԲԱՆԿԱՅԻՆ ՇՈՒԿԱՅՈՒՄ

**Բանալի բառեր** - Բանկային գործ, տեխնոլոգիա, API, FinTech, թվային բանկային համակարգ

Մինչև վերջերս ոլորտի ուշադրությունը կենտրոնացած էր սեփական կապիտալի ROE ցուցանիշի բարելավման վրա, քանի որ շատ ֆինանսական հաստատություններ բախվում էին տնտեսական անորոշությունների, սահմանափակող կարգավորող միջավայրին, ինտենսիվ մրցակցությանը, տեխնոլոգիական խափանումներին և հաճախորդների փոփոխվող պահանջներին համապատասխանող գործընթացների վերանայմանը: Այնուամենայնիվ, ավելի ու ավելի շատ բանկեր ուշադրություն են դարձնում նորարարությանը, քանի որ շատ ֆինանսական հաստատություններ արդյունավետության նախաձեռնություններից և ռազմավարական ծախսերի ծրագրերից խնայողությունները վերաբաշխում են ներդրումների մեջ, այդ թվում՝ նորագույն տեխնոլոգիաների ոլորտում:

## **ТЕХНОЛОГИИ КАК КОНКУРЕНТНОЕ ПРЕИМУЩЕСТВО НА БАНКОВСКОМ РЫНКЕ**

**Ключевые слова:** Банковское дело, технологии, API, FinTech, система цифрового банкинга

До недавнего времени большая часть внимания отрасли была направлена на повышение рентабельности капитала (ROE), поскольку многие финансовые учреждения сталкиваются с экономической неопределенностью, ограничительной нормативной средой, интенсивной конкуренцией, сбоями, вызванными технологиями, и устаревшими процессами для удовлетворения меняющихся требований клиентов. Однако все больше и больше банков уделяют внимание инновациям, поскольку многие финансовые учреждения перенаправляют сбережения от инициатив по повышению эффективности и программ стратегических затрат на инвестиции, в том числе в технологии.

*Submitted: 25.10.2021*

*Accepted for publication: 15.11.2021*

Հրատարակության է երաշխավորել «Հաշվապահության Ոսուցման Միջազգային Կենտրոն» կրթական հիմնադրամի Գիտական Խորհուրդը

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