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MULTIDIMENSIONAL ASSESSMENT OF FINANCIAL RESULTS OF COMMERCIAL BANKS USING ESG FACTORS

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Abstract: The study presents innovative approaches to assessing the financial results of commercial banks in the Republic of Armenia, which combine Environmental, Social, Governance (ESG) factors, reporting transparency and integrated risk analysis. The paper proposes a new assessment format, where the calculation of financial results is supplemented by mechanisms, that respond to profit distribution efficiency, external and internal influences, and ESG operational and structural risks. An adjusted calculation of capital adequacy with the inclusion of the ESG multiplier, ESG-RWA methodology, as well as a "green rating" system for classifying borrowers and partners have been developed. The study also presents the ESG-KPI internal reporting dashboard and a system of qualitative controllable indicators for the regulator, which improves the assessment of financial stability and ensures strategic monitoring of risks

Keywords: commercial banks, ESG integration, capital adequacy, stable rating, financial efficiency, reporting system, financial results.

JEL code: G 17

Research aims: the aim of the research is to scientifically substantiate and develop a conceptual and applied approach to improving the methodology for assessing the financial results of commercial banks of the Republic of Armenia by taking into account the ESG factors, aimed at integrating the principles of sustainable development into the system of financial analysis, banking risk management and management accountability.

Research novelty: is presented forms innovative approaches to ESG, which transform the assessment of financial results, including an adjusted calculation of risky assets, a ESG multiplier of capital adequacy, "green" rating, transparent accountability and a unified system of qualitative indicators for the regulator.

Introduction

The analysis of the financial performance of commercial banks is one of the key directions of economics and banking, but in modern conditions it requires a deep rethinking. Despite the existing theoretical and methodological framework, there are relatively few studies, that detail the features of the financial performance of commercial banks, taking into account the risk environment inherent in the banking system and the global structural changes characteristic of the last decade.

This problem is becoming more critical in the banking system of Armenia, due to both the peculiarities of the national market and the requirements of international integration. In recent years, the interest in sustainable development has clearly intensified on the agenda of the banking sector, which is expressed in the inevitability

of the integration of ESG factors. Environmental, social and governance risks affect the quality of banks' assets, the cost of capital and the accuracy of risk management, reformulating traditional financial assessment methods. In this context, it becomes clear, that being guided only by quantitative financial indicators is no longer sufficient, especially for developing economies, where market stability is sensitive to external and internal shocks. At the same time, new requirements imposed by international regulators, including the Basel Committee and the framework of initiatives on sustainable finance, create a need for Armenia to review the current methodology for assessing financial results. The inclusion of ESG factors in financial analysis not only increases the level of accountability, but also provides an opportunity to form strategies, that ensure long-term sustainability. The work aims to form a scientific-methodological holistic approach that will allow integrating ESG factors at the applied level, enhancing the accuracy and strategic value of assessing financial results.

Research results

The social responsibility of banks in modern financial systems is considered not only as a manifestation of charitable or social activity, but also as a factor of long-term financial stability and competitiveness (Gangi, 2018).

Based on the principle that "profit from sales is formed by calculating the difference between sales revenue, cost price, sales and administrative expenses" (Sargsyan, 2005), the calculation of profit from the sale of financial services can be expressed as follows:

FP = Interest income calculated using the effective interest rate method + Income from commissions and other fees + Other operating income - Interest expense - Expenses from commissions and other fees - Other operating expense - Net impairment losses on financial instruments - Personnel expenses - Other general administrative expenses

A system of ratios has been developed and put forward based on computational and analytical data and the following assessment has been proposed using quantitative-qualitative approaches:

- The impact of changes in prices for the provision of financial services is calculated using the following formula:

$$\Delta\, FCI_{year} = FSI_a - FCI_p$$

$FCIa_a$ – actual income from supplied service,

FSI_p - planed income from supplied service,

- *The impact of changes in interest expense* '

$$\Delta\, PE_{year} = PE_a - PE_p$$

PE_a and PE_p - represented the actual and planned values of interest expense, respectively.

- *The impact of changes in commissions and other service fees:*

$$\Delta\, CF_{year} = CF_a - CF_p$$

$\mathrm{CF_a}$ and $\mathrm{CF_p}$ represented the actual and planned values of commissions.

- *The impact of changes in the volume of financial services provision is determined through the growth ratio:*

$$\mathrm{SF_{yaer}} = \frac{\mathrm{SF_a}}{SF_\mathrm{b}}\, x\, 100 - 100$$

$\mathrm{SF_a}$- financial service planed value,

SF_b- financial service basic value.

- The impact of changes in bank direct costs is expressed as the following difference:

$$\Delta\, DC_{year} = DC_a - DC_p$$

DC_a and DC_p express the actual and planned amounts of direct bank expenses, respectively.

The impact of changes administrative costs:'

$$\Delta\, AC_{year} = AC_a - AC_p$$

AC_a and A express the actual and planned amounts of direct bank expenses, respectively.

Based on the definition that "profit from sales" represents the difference between revenue and expenses from sales, the following calculation formula has been developed and proposed, which is adapted to the banking activities of a specific bank, in this case, "Ameriabank" CJSC:

FP = *Interest income calculated using the effective interest method + Other interest income + Commission and other fee income + Net profit from other operations + Other operating income - Interest expense - Commission and other fee expense - Other operating expense - Net impairment losses - Personnel expenses - Other general administrative expenses*

FP_{2021} = 69992691 + 3144325 + 7144770 + 2465815 + 5920451 + 588832 – 32662210 – 2053290 – 106457 – 3805377 – 6157183 – 65466 – 13303851 – 7231329 = 23871721

FP_{2022} = 82169087 + 3951595 + 11729478 + 5875774 + 35460500 + 3709 + 939702 – 35661046 – 2594247 – 5289389 – 4587713 – 112215 – 28327332 - 8688985 = 54868918

FP_{2023} = 109840205 + 4925871 + 16967408 + 1770265 + 22562849 + 122951 + 723589 – 39741176 – 3200818 – 7901143 – 5421873 – 29467 – 32480252 - 10827802 = 57310670

FP_{2024} = 136794320 + 6795841 + 20210576 + 273779 + 23729562 + 258605 + 3866671 – 49770188 – 3957101 – 8819141 – 1586075 – 18752 – 41887053 - 11957780 = 73933264

$\Delta\, \mathrm{F}CI_{2022} = \mathrm{FCI}_a - \mathrm{FCI}_b =$ 54868918 – 23871721 = + 30997197

$\Delta\, FCI_{2023} = \mathrm{FCI}_a - \mathrm{FCI}_b =$ 57310670 – 54868918 = + 2441752

$\Delta\, FCI_{2024} = \mathrm{FCI}_a - \mathrm{FCI}_b =$ 73933264 – 57310670 = + 16622594

Based on the quantitative factors identified for the analysis, a comparative table has been developed, which allows assessing their direct impact on the change in profit from the sale of financial services of "Ameriabank" CJSC.

According to the Central Bank of Armenia, about 40% of the country's banking system's loan portfolio is in sectors that are vulnerable to climate change. This means that in the event of climate shocks, a significant portion of banks' assets could be at risk (Climate Change and Financial Risks 2025). Companies with a ESG rating tend to have lower β (beta), a measure of systemic risk, and are less susceptible to market shocks (Fiorini, 2025). The beta coefficient (a measure of the market risk of a bank's shares) is typically lower for financial institutions with high ESG stability, reflecting their lower susceptibility to systemic shocks (Tawfiq 2024).

Table 1. Factor analysis of profit from the sale of "Ameriabank" CJSC, 2021-2024 billion AMD

Source: *Author's own work.*

Indicators	2021	2022	2023	2024
1. Revenue from the provision of services (Interest income calculated at the effective interest rate + Other interest income + Income in the form of commissions and other payments)	8,281	9,785	13,173	16,380
2. Interest expense	32,662	35,661	39,471	49,770
3. Expenses in the form of commissions and other payments	20,532	25,945	32,008	39,571
4. Net profit from other operations	82,798	41,339	24,456	24,261
5. Other operating income	58,883	9,370	7,235	38,666
6. Other operating expenses	3,805	5,259	7,901	8,819
7. Net impairment losses	6,222	4,699	5,451	16,048
8. Administrative expenses (Personnel expenses + Other general administrative expenses)	20,535	37,016	43,308	53,844
9. Profit from the provision of banking services	23,871	54,868	57,310	73,933

As a result, companies with a strong ESG profile perform more sustainably and have a lower total cost of capital, gaining a competitive advantage (Wu S 2022). A study of Armenian banks showed that environmental measures and resource efficiency lead to an increase in return on assets (ROA), refuting the prejudiced opinion about the negative impact of CSR on profitability (Fang 2025).

There is currently no uniform requirement to include ESR factors in Pillar 1 (minimum capital requirements), but supervisors are considering pilot adjustments to capital requirements. The Network for Greening the Financial System (NGFS) is exploring the feasibility of introducing a "green incentive" or "brown penalty"

factor into capital requirements (NGFS, 2023). The combined ESG-RWA ratio of a bank can be calculated as the ratio of adjusted RWA to baseline RWA. A value above 1 would indicate a high aggregate ESG risk of the portfolio. For internal use, this indicator can help all levels of the bank's management, especially the Board of Directors, to monitor the dynamics of the ESG risk profile. For example, reducing the share of "brown" assets will lead to a decrease in the ESG-RWA, which indicates a strengthening of the portfolio's sustainability.

Externally, during the dialogue with the Central Bank of Armenia, the bank will be able to justify its capital planning by demonstrating that it has taken climate and social risks into account in the valuation of assets. This is especially important, given that about 40% of the assets of Armenian banks are concentrated in climate-vulnerable sectors, and without high attention, their real risk is underestimated. The effective implementation of the ESG strategy should be accompanied by appropriate internal reporting, addressed to the Board of Directors and the bank's top management.

To monitor progress and risks in the field of CSR, the bank should develop a KPI panel that combines CSR metrics with traditional financial indicators. This panel is presented at Board meetings (for example, quarterly) and allows you to visually track the dynamics.

1. Environmental indicators (E)
2. Social indicators (S)
3. Governance indicators (G)

The peculiarity of such a panel is that ESG indicators are linked to financial metrics. For example, next to the indicator "share of green loans, %", its financial impact is presented: the profitability of the green portfolio is compared with the traditional portfolio or it is indicated how much money was saved due to preferential financing attracted for green projects.

The ESG KPI dashboard becomes a single "information dashboard" for the Board of Directors, where management sees how the bank is moving towards sustainability goals and how this affects key financial results. It is advisable to reflect the following components in internal reports:

1. Sectoral structure of the portfolio with ESG profile
2. ESG exclusion and prioritization policy
3. ESG scoring of borrowers
4. ESG covenants and loan terms
5. ESG incentives
6. Portfolio quality and ESG
7. Sustainable financing development

Based on what has been done, we put forward new approaches that can bring both scientific and practical innovation to the banking sector of Armenia. They concern the integration of ESG factors in various areas of financial management, from asset and liability management processes to regulatory reporting.

1. ESG impact factor in the weighted average cost of capital. The scientific innovation lies in the fact that non-financial parameters are integrated into the formula for the classical weighted average cost of capital.

1.1. Modified model. Instead of a single beta coefficient (β), two components are used:

β_{fin} — classical market sensitivity.

β_{ESG} — sensitivity to ESG factors, for example, corresponding to the dynamics of the ESG market index.

In this case, the cost of equity is calculated by the following formula:

$$R_e = R_f + \beta_{fin} \cdot MRP + \beta_{ESG} \cdot ESG_{RP}$$

where $ESG_{RP}$is the ESG-risk premium, which can be positive (in the case of a low ESG-profile) or negative (in the case of a high ESG-profile). This approach develops the Sustainable CAPM concept already presented in the scientific literature. For Armenian banking practice, β_{ESG} can be estimated by regression analysis of stock or bond returns against global ESG indices.

1.2. Fixed-factor adjustment: In a simplified version, the ERM impact factor can be viewed as a premium or discount to the weighted average cost of capital.

$$WACC_{ESG} = WACC_{base} - k \cdot \left(ESG_{score} - ESG_{peer\ avg}\right)$$

For example, if a bank's ESG score is 90 (out of 100), with a market average of 50, then the decrease in the weighted average cost of capital may be about 0.5–2 points. The coefficient is determined based on such empirical data. This model allows banks to quantitatively substantiate the effectiveness of ESG investments. Improving the ESG rating by X points reduces the weighted average cost of capital by Y points, increasing the bank's rating.

2. Inclusion in investment decisions. When evaluating new projects, loan transactions or M&A transactions, the ESG impact factor is included in the calculations.

3. Transparency for investors. As part of the communication strategy, the bank can openly present the impact of ESG on the cost of capital, for example: “2025 The implementation of the ESG objectives allowed to reduce the weighted average cost of capital by 0.3 t.p., which is equivalent to saving about X million drams on the cost of capital.

4. Regulation and supervision. The regulatory body can use ESG impact factors in macroprudential analysis: if the weighted average cost of capital of ESG leaders in the sector is low, this can be considered as an indicator of increased system stability.

The next innovation concerns the introduction of the ESG risk multiplier. The latter is a proposed tool designed to adjust capital adequacy ratios (N1, CAR), taking into account the profile of the bank's ESG risks. Its essence lies in quantitatively expressing the additional capital required in the presence of high ESG risks of the bank. The innovation lies in the introduction of a dynamic coefficient in regulatory calculations or internal assessments.

1. Pillar 2 surcharge: The bank independently assesses its gross ESG risk (e.g. based on ESG-RWA or stress test results) and sets a risk multiplier m. If $m > 1$, the bank holds capital with an additional buffer. For example, the bank has calculated that climate and other ESG risks add +10% to its profile (i.e. expected losses in a stress scenario are 1.1 times higher than without ESG factors), therefore $m = 1.1$. In this case, instead of the 12% capital requirement, the bank targets 13.2%. This approach can be included in the ICAAP and discussed with the regulator during the supervisory review (SREP).

2. Integration into internal limits. For example, before launching a new loan product in a high ESG risk sector (e.g., mining lending), the bank models that its risk multiplier will increase from 1.1 to 1.2. If this is not permissible (capital is limited), the product is not launched or is launched in a small volume.

3. For counterparties. For example, if the bank finances a leasing company, it can set a condition that the m of its portfolio does not exceed 1.1, otherwise the loan interest rate will increase. This encourages the bank's counterparties to also manage ESG risks.

We recommend:

- ✓ Regular submission of ESG reports to the Central Bank. For example, the “ESG-1” form with a quarterly frequency, which includes:
- ✓ share of green assets,
- ✓ portfolio vulnerability to climate risks,
- ✓ recording of major ESG events,
- ✓ inclusion of ESG in public reports of banks,
- ✓ reporting according to taxonom,
- ✓ dialogue with the Central Bank in the language of ESG KPIs
- ✓ digital platform for ESG monitoring
- ✓ Promotion of improvements.

Conclusion

The results of the study show that the financial results of commercial banks are formed by the interaction of multi-layered factors and require the complex application of both quantitative and qualitative assessment methodologies.

Financial results act not only as a measure of profitability, but also as an important indicator of the stability, risk positioning and competitiveness of the bank. The structural features of income in the banking sector, the diversity of risks, asset and liability management mechanisms and the requirements of the regulator form the environment where the assessment of financial results should also include an analysis of operational efficiency and structural balance.

Attention is also paid to the growing role of ESG factors, which are becoming a fundamental element of risk management and strategic planning. ESG policy contributes to risk reduction, optimal use of resources, strengthening customer confidence and increasing investment attractiveness.

The study proves that the inclusion of ESG factors in financial valuation and capital adequacy calculations makes it possible to identify risks that are not reflected in traditional financial indicators. Overall, the results show, that the Armenian banking system is in a transformation phase, where increasing efficiency and profitability is possible only if the financial valuation system is supplemented with innovative structural, operational and ESG-oriented approaches.

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Զավեն Մարգարյան
Հայաստանի պետական տնտեսագիտական համալսարան
հայցորդ

Բանալի բառեր - առևտրային բանկեր, ԲՍԿ ինտեգրում, կապիտալի համարժեքություն, կայուն վարկանիշավորում,

ֆինանսական արդյունավետություն, հաշվետվողական համակարգ, ֆինանսական արդյունքներ:

Հետազոտությունն առաջ է բերում ՀՀ առևտրային բանկերի ֆինանսական արդյունքների գնահատման նորարար մոտեցումներ, որոնք համատեղում են Բնապահպանական, սոցիալական, կառավարչական /ԲՍԿ/ գործոնները, հաշվետվողական թափանցիկությունը և ռիսկերի ինտեգրված վերլուծությունը: Աշխատանքում առաջարկվում է գնահատման նոր ձևաչափ, որտեղ ֆինանսական արդյունքների հաշվարկը համալրվում է շահույթի բաշխման արդյունավետության, արտաքին և ներքին ազդեցությունների և ԲՍԿ գործառնական ու կառուցվածքային ռիսկերին արձագանքող մեխանիզմներով:

Մշակվել են ԲՍԿ բազմապատկիչի ներառմամբ կապիտալի համարժեքության ճշգրտված հաշվարկ, ԲՍԿ-RWA մեթոդաբանություն, ինչպես նաև վարկառուների և գործընկերների դասակարգման «կանաչ վարկանիշային» համակարգ:

Հետազոտությամբ ներկայացվում է նաև ԲՍԿ-KPI ներքին հաշվետվողական վահանակ, ինչպես նաև կարգավորողի համար նախատեսված որակական վերահսկելի ցուցիչների համակարգ, որը բարելավում է ֆինանսական կայունության գնահատումը և ապահովում ռիսկերի ռազմավարական մոնիթորինգ:

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