DUPONT ANALYZES IN THE ASSESSMENT OF BANKING SYSTEM PROFITABILITY: ESTIMATING EVIDENCE FROM THE REPUBLIC OF ARMENIA

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Abstract

In recent years, the banking system worldwide and especially in the Republic of Armenia (RA) has undergone significant changes. In 11 years period (2014–2024) the banking system of RA went through various challanges: in fact of Equity normative level was increased many banks had to merge and acquire, Covid–19 pandemic led to changes in government policy, in 2020 there was a territorial conflict between Armenia and Azerbaijan which led some banks to change their territorial location. Besides, many changes in banking regulation strengthened the role of banks and banking regulation and led to a continuous rise in profitability.

The conducted research aims to discover:
*   What main factors impact the banking system's profitability in RA,
*   What factors have the most impact on the latter,
*   Whether banking system profitability in RA has the potential to rise in the predicted two years.

For that purpose, DuPont analyses were performed, and five–factor analyses were done to understand which indicators influence the RA banking system's profitability the most, to what extent and how. Next, the Trend Lines for three main indicators (ROE, ROS, and IB) were constructed to predict the profitability of the banking system for the next two years.

The analyses were performed using Excel's predictive tools for 2014–2024 data for the entire banking system. Analysed results let us conclude that the RA banking system is rapidly growing and ROE changes were driven not only by internal banking indicators but also by changes in legislation in RA.

Keywords: DuPont's analysis, Return on Assets (ROA), Return on Equity (ROE), Assessment and Estimation, Trend Line, Prediction.

ԲԱՆԿԱՅԻՆ ՀԱՄԱԿԱՐԳԻ ՇԱՀՈՒԹԱԲԵՐՈՒԹՅԱՆ ԳՆԱՀԱՏՈՒՄԸ DUPONT ՎԵՐԼՈՒԾՈՒԹՅԱՆ ԿԻՐԱՌՄԱՄԲ՝ ՀԱՅԱՍՏԱՆԻ ՀԱՆՐԱՊԵՏՈՒԹՅԱՆ ՕՐԻՆԱԿՈՎ

ԳԱՅԱՆԵ ՀԱՐՈՒԹՅՈՒՆՅԱՆ

Հայաստանի պետական տնտեսագիտական համալսարանի
կիրառական ֆինանսների ֆակուլտետի
ֆինանսական շուկաների և ինստիտուտների ամբիոնի դոցենտ,
տնտեսագիտության թեկնածու

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Համառոտագիր

Վերջին տարիներին բանկային համակարգն ամբողջ աշխարհում և, հատկապես, Հայաստանի Հանրապետությունում (ՀՀ) բազմաթիվ փո– փոխությունների է ենթարկվում: 11 տարվա ընթացքում (2014–2024թթ.) ՀՀ բանկային համակարգը բախվել է տարբեր խնդիրների. ավելացել է սեփական կապիտալի նորմատիվային մակարդակը, բանկերից որոշնե– րը ստիպված են եղել միավորվել, Covid–19 համավարակը հանգեցրել է պետական քաղաքականության փոփոխությունների, 2020 թ. տեղի է ու– նեցել տարածքային հակամարտություն Հայաստանի և Ադրբեջանի միջև, որի հետևանքով փոխվել են որոշ բանկերի տարածքային տեղակայու– մը: Բացի այդ, տեղի են ունեցել բանկային կարգավորման բազմաթիվ փոփոխություններ, որոնք ամրապնդել են բանկերի հուսալիությունը և բանկային կարգավորումը:

Ուսումնասիրության նպատակն է պարզել.
- որո՞նք են ՀՀ բանկային համակարգի շահութաբերության վրա ազդող հիմնական գործոնները,
- ո՞ր գործոններն են ամենամեծ ազդեցությունն ունենում վերջի– նիս վրա,
- արդյո՞ք բանկային համակարգի շահութաբերությունն ունի աճի ներուժ առաջիկա երկու տարիների ընթացքում:

Նպատակին հասնելու համար իրականացվել է Դյուպոնի հինգ գործոնային վերլուծություն՝ պարզելու, թե որ ցուցանիշները որքանով և ինչպես են առավելապես ազդում ՀՀ բանկային համակարգի շահու– թաբերության վրա: Այնուհետև երեք հիմնական ցուցանիշների (ROE, ROS և IB) համար կառուցվել են միտման գծեր առաջիկա երկու տարիների համար բանկային համակարգի շահութաբերությունը կանխատեսելու նպատակով:

Վերլուծություն իրականացվել է Excel–ի միջավայրում կանխատես–

ման գործիքների միջոցով՝ ամբողջ բանկային համակարգի 2014–2024 թվականների տվյալների վերլուծության հիման վրա: Վերլուծված արդյունքները թույլ են տալիս եզրակացնել, որ ՀՀ բանկային համակարգն արագ զարգանում է, իսկ շահութաբերության փոփոխությունները պայմանավորված են ոչ միայն ներքին բանկային գործոններով, այլև ՀՀ օրենսդրության փոփոխություններով:

Բանալի բառեր՝ Դյուպոնի վերլուծություն, ակտիվների շահութաբերություն (ROA), կապիտալի շահութաբերություն (ROE), գնահատում և վերլուծություն, միտման գծեր, կանխատեսում:

Introduction

The economy of the Republic of Armenia is constantly growing. It is proven by indicators such as Gross Domestic Product, Share of Total Loans and Deposits in GDP, steady and regulated Inflation, and normal economic growth (Figure 1).
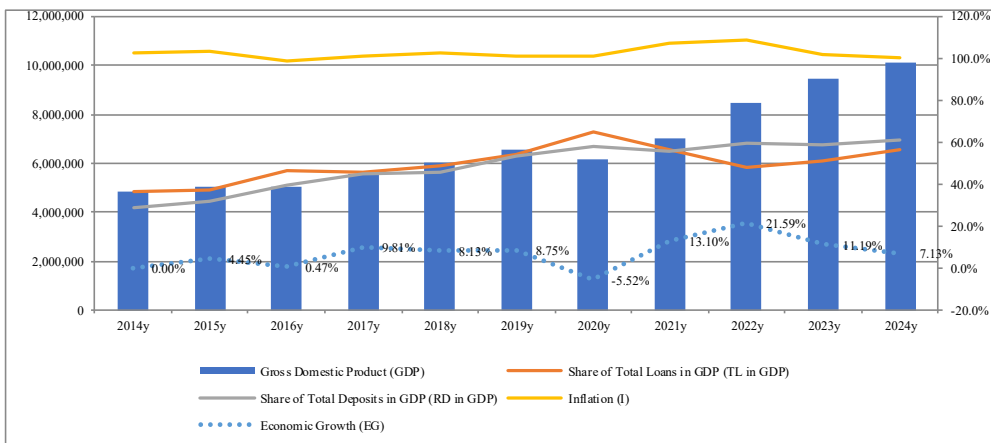
Figure 1. GDP (Left Axis), mln drams, TL in GDP, TD in GDP, I and EG in RA, %, for 2014–2024 (Right Axis)[1]

In these trends, the Banking system of RA plays the leading role. The share of latter remains constantly big for the past decade (83%–86%). That means that its performance and operating effectiveness affect the whole economy of RA. The share of Loans and Deposits tends to grow, which indicates that there are all the necessary conditions for the population to purchase the

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1 All figures are built by the author on the basis of retrieved data from www.armstat.am, www.cba. am and from the annual reports of 18 commercial banks' web pages operating in the Republic of Armenia

banking services and products (especially new ones). Moreover, the GDP of RA nowadays is more dependent on the population, Deposits, and Loans, which means that the trust in the RA banking system tends to stabilise. Many economists note that the banking sector is the backbone of any country's health (Zhongming et al., 2019; Rabaa & Younes, 2016) and is the engine of growth for any country's econony (Nimalathasan, 2008). Others note that the performance of the banking sector is an indicator of the health of the whole country and is crucial for its financial system (Trung, 2021).

In light of facts, the stability and effectiveness of the banking system are the first. It can be measured through different coefficients, which show the effectiveness of performance. At the same time, the simplest and most effective one is the ROE, which measures the profitability of shareholders' investments.

In this paper, we have studied the RA banking system ROE, its changes and the factors that impact the latter. It has been done by DuPont's multifactor analysis. The latter helps us understand the trends in the RA banking system's operational effectiveness and financial stability.

Theory and Methodology

The banking system plays a crucial role in the development of a financial system, especially in a country's economic growth. It generates resources and distributes them in different ways: by providing loans, buying securities, buying derivatives, investing in the real estate market, and others. On the other hand, the great variety of products and services provided by banks directly affects the profitability of the banking system.

Nowadays, the banking system of RA is rapidly developing. According to the research of the Black Sea Trade and Development Bank (BSTDB), the financial sector in Armenia is dominated by banks with an 83.8% share in total financial sector assets. Moreover, the size of the banking sector in Armenia is large relative to the economy, as banks' total assets to GDP equals 108%, a level that is close to the average for BSTDB member countries (BSTDB, 2023). This coefficient growth is accompanied by steady growth of ROE.

Let us also note that over the past decade, the RA banking system has navigated a complex landscape of socio–political challenges, economic shocks, and regulatory reforms, raising questions about its stability and long–term growth. So the main challenge now is to understand how changes in ROE affect the banking system performance as a whole.

ROE is typically defined as net income divided by the book value of equity. Therefore, a bank's ROE can be changed in two ways: through a change in net income or by operating with more or less equity. (Tijmen and Shahin, K., 2016). Moreover, ROE is a central measure of performance in the

banking industry, which is used to allocate capital within and across divisions. The reliance on this metric emerged from the risk management approach to banking, which underlies bank capital regulation (Moussu & Petit–Rome, 2014). So we can say that, as bank lending activities provide capital for the economy, they play an extremely important role in promoting production and business in enterprises (Pham, 2025). One common criticism against the use of ROE as a central performance measure is that it plays a role in inducing high leverage in banks (Goodhart, 2014; Thakor, 2013). This raises the issue that the effect of crisis ROE on bank risk may be driven by the impact of leverage. As can be seen, ROE is a complex coefficient, and many factors affect it.

ROE is calculated as follows (Bektas E., 2014; Kowoon Y., et al, 2022):

$$ROE = \frac{Profit_{after\ tax}}{Capital} \tag{1}$$

Besides many analyses and performances, there is one which can let us understand which factors (internal and external) affect ROE. This performance is known as a DuPont analysis or DuPont model.

The DuPont model was created in the early 1900s to assess the profitability of a business (Sheela and Karthikeyan, 2012). The DuPont system of financial analysis is based on ROE, with the components of this ratio being the net profit margin, the total asset turnover and the equity multiplier (McGowan and Stambaugh, 2012). According to DuPont analysis, ROE is a function of ROA (Return on Assets) and Leverage (The proxy variable being Equity Multiplier) (Narayanaswamy, 2017). A good attempt of adopting DuPont's model was made by Kusi, Ansah–Adu & Sai (2015) in the use of an econometric technique to test the significance of each of the components of the DuPont ratio on the ROE of banks in Ghana. Twenty five (25) banks were sampled for the period 2006 to 2012 and panel regression was used in the data estimation technique. Their findings show that all five elements of the five–step DuPont model have a positive and significant relationship with ROE, including tax burden and interest burden.

Du Pont analysis takes into account three or five indicators to measure a firm's profitability: ROS, ROA, ROE, IB and TB. ROA offers a different take on management effectiveness and reveals how much profit a company earns for every dollar of its assets. Return on Sales (ROS) – measures how profitable a firm's sales are after all expenses, including taxes and interest, have been deducted. Interest Burden (IB) shows how interest expense impacts a bank's profits, and Tax Burden (TB) shows how the state affects banks' activity. As we can see, DuPont analysis provides a detailed breakdown of ROE, revealing the key drivers of a company's financial performance. DuPont analysis gives a more insightful and actionable understanding of a company's financial performance.

It empowers stakeholders to make better decisions and drive improvements. Moreover, it can identify a company's strengths and weaknesses.

Generally, DuPont analyses can be performed in three and five–factor analyses. The three–factor analysis is the following (Doorasamy M., 2016):

$$ROE = \frac{Profit_{after\ tax}}{Gross\ Income} * \frac{Gross\ Income}{Assets} * \frac{Assets}{Capital} = Return\ On\ Sales * Asset\ Turnover *$$
$$Leverage = ROS * AT * L \tag{2}$$

The Five–factor analysis is the following:

$$ROE = \frac{Profit_{after\ tax}}{Profit_{before\ tax}} * \frac{Profit_{before\ tax}}{EBIT} * \frac{EBIT}{Gross\ Income} * \frac{Gross\ Income}{Assets} * \frac{Assets}{Capital} = Tax\ Burden\ (TB) *$$
$$Interest\ Burden\ (IB) * ROS_{IB} * AT * L \tag{3}$$

Let us note that (Universalcpareview.com):

$$EBIT = Operating\ Income - Other\ Expenses \tag{4}$$

The DuPont analysis allowed us to determine how the RA banking system's strategy has changed over the past 11 years and which operations have led to the most significant change in ROE.

Research Meth ods

The object of our research is the Banking system of the Republic of Armenia as a whole. For that purpose:

• The data of 18 banks operating in the Republic of Armenia have been studied. Annual data from 2014 to 2024 were analysed. The necessary data were obtained from each bank's annual report on the bank's web page.

• DuPont five–factor analysis has been performed, so ROE, ROA, ROS, L, IB and TB have been calculated, and their trends have been presented in a Figure.

• Using the assessment, trend forecasting and identification methods, the features of the presented data set have been identified. In particular, based on graphs created in Excel, trend lines have been constructed so that they make it possible to represent deviations of actual data from the predicted ones. For that purpose, a Polynomial trend line was built, which is used when the data presented in the series has a simultaneous trend of growth and decrease. In such cases, the graph has one or more extreme (maximum and minimum) points. Of great importance for the accuracy of forecasting is not only the coefficient of determination (R^2), which should be greater than 0.8, but also the correct choice of the degree (order) of indicators, which should be one more than the number of extreme points. Thus, the possible values of the

ROE, ROS and IB have been predicted.

• Thus, it has been analysed what factors impact the change in the RA banking system ROE the most, and what are the apparent reasons for the latter.

Results

It is widely known that only Profit after Tax (PAT) is not an effective coefficient to measure the banking system's efficiency. To understand how the RA banking system develops its profitability, ROE was calculated for the observed 11 years (Figure 2).

Data presented in Figure 4 shows that ROE in the RA Banking System has grown nearly 10 times. In fact, equity in the RA banking system is managed more efficiently. We can highlight some years when ROE has decreased (2017, 2020, 2023). All these years were connected either with changes and or supplements in jurisdiction or depression and war. We will consider the ROE change in each year to understand the main dynamics in the RA banking system.
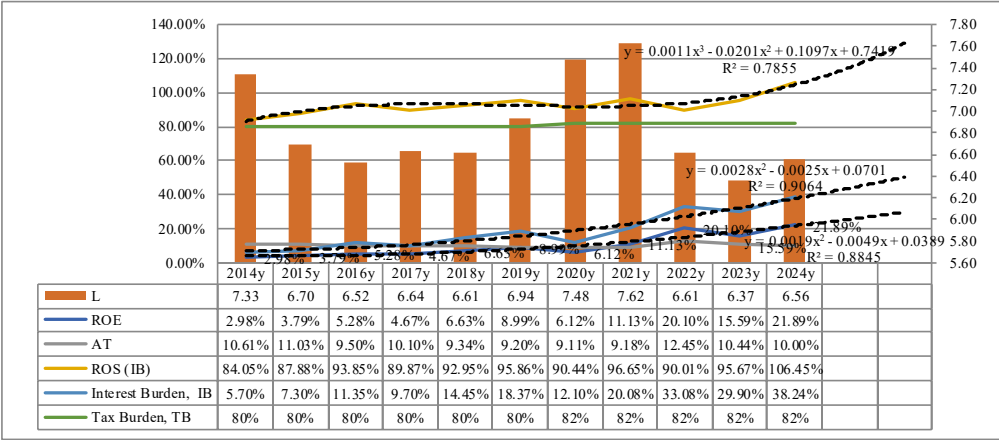

	2014y	2015y	2016y	2017y	2018y	2019y	2020y	2021y	2022y	2023y	2024y
L	7.33	6.70	6.52	6.64	6.61	6.94	7.48	7.62	6.61	6.37	6.56
ROE	2.98%	3.79%	5.28%	4.67%	6.63%	8.99%	6.12%	11.13%	20.10%	15.59%	21.89%
AT	10.61%	11.03%	9.50%	10.10%	9.34%	9.20%	9.11%	9.18%	12.45%	10.44%	10.00%
ROS (IB)	84.05%	87.88%	93.85%	89.87%	92.95%	95.86%	90.44%	96.65%	90.01%	95.67%	106.45%
Interest Burden, IB	5.70%	7.30%	11.35%	9.70%	14.45%	18.37%	12.10%	20.08%	33.08%	29.90%	38.24%
Tax Burden, TB	80%	80%	80%	80%	80%	80%	82%	82%	82%	82%	82%

Figure 2. ROE, ROA, ROS, IB, TB, % (Left Axis), L (Right Axis) for 2014–2024[2]

Figure 2 shows that in 2015, ROE grew. It was mainly due to L reduction and IB rise. It means that Assets to Capital reduced and Profit After Tax to EBIT increased. In the first case, both Assets and Capital increased, but Capital increased faster than Assets. It means that though the banking system was expanding, it was not due to risk but to financial stability enforcement. In the second case, PAT increased faster than EBIT. And it means that interest income operations had slightly increased, which led to offering new products and services, as well as increased population involvement.

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2 All figures are built by the authors on the basis of retrieved data from the annual reports of 18 commercial banks' web pages operating in the Republic of Armenia

In 2016, ROE continued to grow. And again it was due to L reduction and IB raise. The reasons were the following. The number of customers served in the commercial banks of Armenia grew by 7.2% in 2016, primarily due to an increase in the number of natural person customers by 7.3% relative to 2015. In 2016, the share of interest–earning assets in total assets grew by 2.5 percentage points and reached 75.0%. In 2016, the gross income of the banking system grew by 9.3% and gross expenses by 1.5%. Within gross income, interest income grew by 2.7%, and non–interest income by 1.8%. Banking system interest income grew primarily due to an increase in income from loans to the economy (including overdraft, credit lines, and credit cards): their share in total interest income was 80.8% (compared to 84.6% in 2015) (CBA, Financial stability report, 2016). In 2016, the Armenian banking system experienced structural changes, consolidation, and increased focus on financial stability.Key changes included an increase in the minimum capital requirement for banks, leading to a reduction in the number of banks and an increase in market concentration.

In 2017, ROE was 4.67%, which was mainly due to ROS and IB. There were some changes and supplements in the RA legislation. In 2015,the Central Bank announced that it would tighten the rules: the minimum threshold of total capital of banks is set to be AMD 30 billion since January 1, 2017.If we look closer at ROS, it is evident that PAT has decreased (from 30 billion in 2016 to 28.9 billion in 2017). On the contrary, Interest and Non–Interest Incomes have increased by 4.5% and 37.4% respectively. That means that though banks in RA continued to enlarge their investment policy, PAT decreased. The fact was because of Interest Expenses. The latter increased by 3% due to the Deposits raised more rapidly than Loans. In 2015–2016 changes and supplements to RA Law "On Guaranteeing Remuneration of Bank Deposits of Individuals" introduced new stipulations and limits to guaranteed deposits, as follows: if the depositor holds only a dram denominated deposit with the insolvent bank, the amount of the guaranteed deposit will be AMD 10 million; if the depositor holds only a foreign currency denominated deposit with the insolvent bank, the amount of the guaranteed deposit will be AMD 5 million. All these changes contributed to the increase of confidence in the banking system of RA.

In 2018, ROE increased and reached 6.63% due to an increase in ROA, ROS and IB. The L was nearly on the same level, which means that Assets and Capital increased by the same level. ROA increased due to notable changes in the RA banking system, includingincreased lending, particularly in consumer and mortgage sectors, driven by both economic growth and state programs. Compared to 2017, 2018 consumer loans increased by 37%, and the share of total loans became 25%, up from 21% in previous years. (Ghalayan I.,

Arustamyan T., 2019) Legislative changes were made by the Government's initiative to smooth the barriers of the banking system and to free the banks from unnecessary burden, which allowed getting rid of a considerable sum of non–performing loans.

In 2020, ROE was 6.12% and the decline was due to Du Pont's all factors. In 2020, there was a change in Taxing Legislation, which led to a decrease in the rate for Profit Tax (from 20% to 18%). This factor is a reason for PAT to rise. L was high in 2020 and 2021. Mainly, it was due to all banks (except Ameriabank, EvocaBank, AcbaBank, ArtsakhBank, ByblosBank). The largest share of large leverage was due to Ardshinbank. Its deposits grew faster than loans. If the leverage ratio rises, it is either due to an Increase in Assets or an Increase in Capital. In our case, Assets grew by 14.17% and Capital by 5.81%. In Ardshinbank, Assets grew by 27.17% and Capital by 12.05%. It means that the RA banking system, and especially Ardshinbank, increased its riskiness. Banks of RA started to invest more not only in Loans but also in Armenian or International corporate bonds with or without rating. It was due to the Pandemic that the population in RA was unable to borrow or return the existing Loans.

In 2021, the Leverage ratio had also risen, but in this case, Assets grew by 4.42% and Capital by 6.38%. It means that, though the risk was higher in 2020, banks were able to gain more Income to increase their Capital. Higher Leverage led RA banks to almost double the PAT. That meant that the RA banking system managed its risks effectively. From 2022, L dropped, equaling the 2018 year's point, and it continues to decrease to the present. In the last three years, the RA banking system's Capital increased faster than its Assets. That was because of retained earnings and especially the rise in non–interest income (foreign exchange swaps). In 2020 additional changes and supplements to RA Law "On Guaranteeing Remuneration of Bank Deposits of Individuals" introduced new stipulations and limits to guaranteed deposits, as follows: if the depositor holds only a dram denominated deposit with the insolvent bank, the amount of the guaranteed deposit will be AMD 16 million; If the depositor holds only a foreign currency denominated deposit with the insolvent bank, the amount of the guaranteed deposit will be AMD 7 million. These changes also led to ROE rising for the following years.

In 2022, additional changes in other laws were made that led to more confidence in the RA banking system. The most important addition was the introduction of a new Law on "About non–cash transactions". According to the Law starting from July 1, 2022, transactions on the alienation of goods, alienation of property, use of goods, use of property, performance of works and services, payment of passive income, provision and receipt of loans made by individual entrepreneurs and organizations in the territory of the Republic

of Armenia for an amount exceeding AMD 300,000, if one of their parties is a person, carried out in a non–cash form. This means that the Central Bank of Armenia is strengthening regulations in banks and the population, also preventing money laundering and terrorist attempts. Nowadays, to conduct risk mitigation in the banking system, most of Loans are issued in RAI to prevent dollarisation.

In 2023, ROE decreased to 15.59% mainly due to the IB decrease. In 2023, the PAT slightly reduced due to a decrease in Non–Interest Income (by 27%). Mostly it was due to the decrease in exchange operations in AmeriaBank and ArdshinBank.

From Figure 4, it can be seen that ROE has the same trend as ROS and IB. But if we generate Trend lines, we can see that for the upcoming years (2025 and 2026), their dynamics are different. Though IB and ROS are increasing, ROE is tending to increase, but at a slower rate.

Data in Table 1 shows that in 2026, ROE will decline, though ROS and IB tend to increase. It means that TPAT tends to increase, so the decline is due to Capital, which will also increase but faster than PAT.

Table 1

Actual and Predicted coefficients in the RA banking system, %, for 2014–2024[3]

	Actual coefficients			Predicted coefficients		
Year	ROE	ROS	Interest Burden, IB	ROE	ROS	Interest Burden, IB
2014y	**2.98%**	3.83%	5.70%	**3.59%**	83.26%	7.04%
2015y	**3.79%**	5.13%	7.30%	**3.67%**	88.97%	7.63%
2016y	**5.28%**	8.52%	11.35%	**4.13%**	91.98%	8.78%
2017y	**4.67%**	6.98%	9.70%	**4.97%**	92.95%	10.49%
2018y	**6.63%**	10.75%	14.45%	**6.19%**	92.54%	12.76%
2019y	**8.99%**	14.09%	18.37%	**7.79%**	91.41%	15.59%
2020y	**6.12%**	8.97%	12.10%	**9.77%**	90.22%	18.98%
2021y	**11.13%**	15.91%	20.08%	**12.13%**	89.63%	22.93%
2022y	**20.10%**	24.41%	33.08%	**14.87%**	90.30%	27.44%
2023y	**15.59%**	23.46%	29.90%	**17.99%**	92.89%	32.51%
2024y	**21.89%**	33.38%	38.24%	**21.49%**	98.06%	38.14%
2025y				**25.37%**	106.47%	44.33%
2026y				**29.63%**	118.78%	51.08%

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3 Data presented in the table are calculated by the author

It follows that RA banking systems' financial stability tends to grow. And it does approve the fact that the Central Bank of RA provides its second main objective: ensuring financial stability. If we try to understand the main reasons for the increase in IB and ROS, they are as follows. The increase of IB can be due to:

• Profit After Tax (PAT) increase or
• EBIT decrease or
• Both coefficients increase, but the growth rate of PAT will surpass.

Table 4 data show that ROS will increase in the upcoming two years. That means that

• PAT will increase, and the sum of Interest Income (II) and Non–Interest income (NII) will decrease
• The growth rate of PAT will surpass.

Observed data show that in the recent 11 years, the RA banking system's Income growth rate (Interest Income (II)– 3.27 times, Non–Interest Income (NII)– 4.89 times) surpasses the Expenses growth rate (Interest Expenses (IE) – 2.85 times, Non–Interest Expenses (NIE) – 2.14 times). This means that PAT has a stable growth rate. In the case of Income, it may decrease due to a decline in NII (especially due to a decrease in foreign exchange swap volume). It means that PAT growth rate will surpass even in the worst–case scenario. Let us return to IB. If PAT is increasing, it may exceed the EBIT growth rate. Again, it can be due to a decrease in foreign exchange swap volume. So, if PAT is tending to increase, it means that ROE is tending to decrease due to other factors. This can be because the RA banking system's Capital growth rate will be higher. From another point of view, it is a good condition because the RA Banking system is becoming more financially stable.

To understand which indicators impact ROE the most and to what extent, Regression analyses were performed (Table 2).

Table 2.

Regression statistics: Dependent Variable: ROE[4]

Explanatory Variables	ROE
Leverage	0.01**
	0.0045
Asset Turnover	1.18***
	0.2825
ROS(IB)	0.13
	0.0671

4 Data presented in the table are calculated by the author

Interest Burden	0.53*** 0.0437
Tax Burden	0.06 0.2566
Interception	-0.38 0.2263
Number of observations	**11**
Adjusted R2	**0.998**

Figures in parentheses show standard errors, ** $0.01 < p \leq 0.05$ and *** $p < 0.001$.

From Table 2, it can be seen that L, AT and IB are valuable from the point of view of p–value. Moreover, AT and IB have the most impact on ROE. It can be assumed that if:
➤ AT is changed by 1 point, then 1.18 points will change ROE
➤ IB is changed by 1 point, and 0.53 points will change ROE.

Discussing the results, we can conclude that the RA banking system generates a continuously rising ROE. It is due to different factors. Mainly, it is due to changes and additions in legislation, leverage limitation, risk mitigation and other factors. Du Pont's five–factor analysis lets us understand that ROE has the same trend as ROS and IB. It means that the banking system in RA is still mainly dependent on Interest Income and Interest Expenses. These analyses are new due to ROE prediction based on Du Pont's five–factor analysis. This type of analysis shows that banks in RA tend either to increase retained earnings or share capital. But in our case, the first statement is true, and this is the proof that the RA banking system is increasing its financial stability.

Conclusions

The analysis in the Results stated that DuPont's factors do impact the banking system's profitability in the Republic of Armenia. AT and IB are the factors that have the most impact on ROE. Moreover, the banking system's profitability has the potential to rise in the next two years if ROS and IB are managed effectively.

From 2014 to 2024, the Republic of Armenia underwent significant changes in the banking system. The latter can be divided into two main directions. The first one is related to changes in legislation, and the second one to changes in internal banking factors. The Republic of Armenia has all the potential to be an emerging country. The GDP, GDP per capita, constant regulated inflation, rising economic growth and growing ratio of Assets to GDP show that conditions in the banking system are improving from year to year. This was due to an increase in the minimum capital requirement for banks, leading to a reduction in the number of banks and an increase in

market concentration. Also, the threshold of total capital of banks was set to be AMD 30 billion since January 1, 2017. In 2015–2016 and in 2020, changes and supplements to the RA Law "On Guaranteeing Remuneration of Bank Deposits of Individuals" introduced new stipulations and limits to guaranteed deposits. In 2022, the transparency of the banking system has increased due to an important addition in legislation: the introduction of a new Law on "About non–cash transactions". All these changes indicate that there is great potential for the population to trust the banking system. Though the rising quantity of bank clients adds supplementary riskiness, on the contrary, the appropriate management raises ROE.

In the case of internal banking indicators, AT and IB impact ROE the most. It means that if the RA banking system expects a rise in ROE, it should not only increase its assets but also allocate them in a way that can generate more income (especially Non–Interest Income) and also invest in such products that can generate interest income. The latter can be performed by revival of the securities market, especially by legislation changes that can enable banks to invest in securities. This can be through the distribution of allocated means in different sectors of an economy: green markets, education, industry and others. The legislation may be changed in a way that banks have privileges for investing in the securities market (for example, additions to tax legislation).

The results of the research can be valuable for ROE prediction for the Central Bank of the Republic of Armenia. The extent of impact can be a substantial value for changing the strategy of banking system development in the future, considering unpredictable challenges. The coefficients of AT and IB can be a good base to justify the appropriate changes of ROE in the future.

In our further research, we are going to analyse how AT and IB can be changed optimally so that ROE will generate more effectiveness.

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