MUSEYIBOV, AYAZ *–MAMMADOV, YUSIF **–JAFAROV, JOSHGUN ***

Role of the banking sector in sustainable economic development – The case of Azerbaijan

Abstract: This study examines the role of the banking sector in Azerbaijan's economic development, focusing on its impact on credit expansion, GDP growth, and sectoral financial dynamics. The banking sector is crucial for financing small and medium-sized enterprises (SMEs), driving economic growth, and enhancing productivity through increased employment and investment. The study employs a panel VAR model to explore the relationship between regulatory capital, credit extension, and economic growth, highlighting how regulatory capital impacts loan-to-deposit ratios and GDP growth. Data from 2005 to 2022 indicates a strong positive correlation between bank loans and GDP growth, though the effect varies by loan size and capital regulation policies. The analysis reveals that bank loans and deposits significantly influence GDP, with deposits showing a stronger correlation. Despite improvements in the financial sector, including reforms and infrastructure modernization, Azerbaijan's banking system faces challenges in credit allocation and financial depth compared to regional and global benchmarks. The study identifies that a substantial portion of loans is directed towards households rather than productive sectors, impacting overall economic growth. Key sectors such as agriculture and manufacturing have seen decreased loan shares, affecting their development. The findings suggest a need for enhanced regulatory frameworks, better risk management, and targeted financial policies to improve sectoral credit distribution and support sustainable economic growth in Azerbaijan.

Keywords: Banking; Azerbaijan; VAR model; SMEs; sustainability.

Összefoglalás: A tanulmány a bankszektor szerepét vizsgálja Azerbajdzsán gazdasági fejlődésében, a hitelbővülésre, a GDP-növekedésre és az ágazati pénzügyi dinamikára gyakorolt hatására összpontosítva. A bankszektor kulcsfontosságú a kis- és középvállalkozások (KKV-k) finanszírozásában, a

* *Azerbaijan State University of Economics (UNEC), and Azerbaijan Technical Univeristy (ATU)*
E-mail: ayaz.museyibov@unec.edu.az

** *The Academy of Public Administration under the President of the Republic of Azerbaijan*
E-mail: mammadovyusif98@gmail.com

*** *The Academy of Public Administration under the President of the Republic of Azerbaijan*
E-mail: cosqunvcafar@gmail.com

gazdasági növekedés ösztönzésében, valamint a termelékenység fokozásában a foglalkoztatás és a beruházások növelése révén. A tanulmány VAR-modellt alkalmaz a szabályozói tőke, a hitelbővítés és a gazdasági növekedés közötti kapcsolat feltárására, kiemelve, hogy a szabályozói tőke hogyan befolyásolja a hitel-betét arányt és a GDP növekedését. A 2005 és 2022 közötti adatok erős pozitív korrelációt mutatnak a banki hitelek és a GDP növekedése között, bár a hatás a hitelek nagyságától és a tőkeszabályozási politikától függően változik. Az elemzésből kiderül, hogy a banki hitelek és betétek jelentősen befolyásolják a GDP-t, a betétek pedig erősebb korrelációt mutatnak. A pénzügyi szektorban bekövetkezett fejlődés, többek között a reformok és az infrastruktúra modernizálása ellenére Azerbajdzsán bankrendszere a regionális és globális összehasonlítási alapokhoz képest kihívásokkal küzd a hitelallokáció és a pénzügyi mélység terén. A tanulmány megállapítja, hogy a hitelek jelentős része inkább a háztartásoknak, mint a termelő ágazatoknak irányul, amely hatással van az általános gazdasági növekedésre. Az olyan kulcsfontosságú ágazatokban, mint a mezőgazdaság és a feldolgozóipar, csökkent a hitelek aránya, amely szintén elősegíti a fejlődésüket. A megállapítások arra utalnak, hogy a hitelek ágazati megoszlásának javítása és a fenntartható gazdasági növekedés támogatása érdekében Azerbajdzsánban fokozott szabályozási keretekre, jobb kockázatkezelésre és célzott pénzügyi politikára van szükség.
Kulcsszavak: Banki tevékenység; Azerbajdzsán; VAR-modell; kkv-k; fenntarthatóság.

Introduction

The banking sector plays an important role in the management of financial resources and investments, the implementation of innovations and the protection of macroeconomic stability. In Azerbaijan, the banking sector acts as one of the main indicators of economic development, such as support for entrepreneurship and diversification of the economy. In addition to financial mediation, the banking sector plays a significant role in the implementation of strategic goals and objectives related to the sustainable development of the economy. By facilitating lending to emerging sectors such as agriculture, technology, and small and medium enterprises (SMEs), banks act as a catalyst for inclusive economic growth in creating employment and increasing productivity. Bank assets in Azerbaijan have grown significantly at a annual growth rate of approximately 10% from 2000 to 2023, reflecting the sector's expanding role in the national economy. The total assets of the banking sector as of January 2023 were about 27.6 billion US dollars, and the top five banks held about 60 percent of this total. In addition, the number of banks operating in the country has stabilized, competitiveness has been ensured and financial services have been improved in the country. Currently, there are 23 commercial banks operating in Azerbaijan, of which two are state banks, 11 are banks with foreign capital, and one is a branch of foreign bank. By influencing the economy, banks provide financial flows between economic sectors and entities by presenting the funds they attract from depositors and investors to borrowers. Funds received from banks in the form of loans include the introduction of various new products and services to business entities, the expansion of existing business networks, the creation of new business entities, the introduction of innovation and innovations, and as a result, economic growth and revival occur. Banks play one of the main roles in protecting the economic interests of the population and enterprises by attracting deposits and savings [1]. Another important aspect that characterizes the banking system is its influence on social processes and the values it creates. For example, by supporting mortgage loan borrowers, banks play an important role in improving the living conditions of the population. In the market economy, banks perform important functions by directing financial resources to the most effective and safe investments and users in the short and long term. On the other hand, the place and role of the banks in the economy is closely related to the quality of their mediation services. In the last 10 years, the rapid development of digital technologies, especially the technologies of the Fourth Industrial Revolution, has led to significant changes in the banking sector. These factors fundamentally changed the role of banks in the economy. In this context, the emergence and development of fintech technologies can be cited as an example. Thus, there is a complex relationship between the banking system and economic development. Besides being the basis of economic development, the banking system implements the effective regulation and management of the financial sector by using the opportunities of economic power in the country. In the analyzes carried out by the experts of the Central Bank on the CIS countries, the important influence of macroeconomic and institutional factors on banking crises was clarified [2]. Maintaining adequate prudential standards for credit institutions provides security in times of crisis for borrowers with a high payment capacity, despite limiting access to credit for low-income families [1].

Literature review

The banking sector plays a crucial role in the economic development of the country by attracting deposits and directing them to productive investments, which stimulates economic growth. The role of the banking sector in the economy of Azerbaijan continues to grow, and in the last few decades, Azerbaijan has entered a qualitatively

[1] Corina, S. (2018): *Young people perception of the role of banks in economy.* University Constantin Brâncuşi. *Economy Series,* pp. 1–8.

[2] Nabiyev, J.–Musayev, K.–Yusifzada, L. (2016): Central Bank of the Republic of Azerbaijan. Banking competition and financial stability: Evidence from CIS countries. *Working paper series,* 4., pp. 1–19.

new stage of development, transitioning from oil resource based economy to a diversified and inclusive economy.

In this regard, as a role of the the banking sector pays special attention to financial services that support small and medium-sized enterprises (SMEs), which are important for increasing employment and productivity. The granting of loans by the banking sector is the main mechanism in the economic development of financial institutions. Access to credit is critical to accelerating economic growth and development through business expansion, innovation and productivity. Regulatory capital links credit extension to GDP growth and promotes long-term economic growth [3]. This process not only facilitates investment in fixed assets, but also supports job creation and increases consumer purchasing power. In addition, a panel VAR model was used to examine the relationship between regulatory capital instruments, credit expansion and economic growth, and according to the corresponding model, regulatory capital reduces the loan-to-deposit ratio (which is used to capture volatile financing). At the same time, studies show that capital has a positive and persistent effect on GDP growth, while the loan-to-deposit ratio has a persistent negative effect on GDP growth over time. The effect of regulatory capital varies across loan sizes and is related to capital regulation policies [3]. In addition, channeling credit into productive investment rather than speculative activities is critical to ensuring that lending translates into sustainable economic growth. With the development of the financial system, diversified and strengthened financial instruments can facilitate trading and hedging. In this way, financial systems can influence resource allocation and thus economic growth by diversifying risks across industries and firms. In addition, the financial system can ensure economic stability [4].

Although the banking system is recognized as one of the main drivers of economic growth, there are conflicting issues regarding the creation of loans in the economy [5]. Empirical research on the likelihood of bank crises as a result of high capital and liquidity requirements has been proven, although studies have produced mixed results (BIS, 2010). The impact of these requirements on bank activity is primarily reflected in their balance sheets. For example, banks reduce interbank loans and increase the purchase of government securities to meet high liquidity requirements. Overall, higher capital and liquidity requirements reduce aggregate consumption, investment and aggregate output by restricting lending activities, even as they increase the resilience of the banking sector and reduce crises [6].

[3] Stewart, R.–Chowdhury, M.–Arjoon, V. (2021): Interdependencies between regulatory capital, credit extension and economic growth. *Journal of Economics and Business*, 117., pp. 1–22.

[4] Bayraktar, Y.–Ozyilmaz, A. (2023): The role of institutional quality in the relationship between financial development and economic growth: Emersging markets and middle-income economies. *Borsa Istanbul Review,* 23., (6.), pp. 1–19.

[5] Vinh, X. (2018): Bank lending behavior in emerging markets. *Finance Research Letters,* (27.), pp. 1–6. https://www.scopus.com/record display.uri?eid=2-s2.0-85045201068&origin=inward&txGid=8e055973af61036697541d5b39cc54ad

[6] Bank for International Settlements. (2016): *Literature review on integration of regulatory capital and liquidity instruments.*

Data and methodology

In the article, literature from various sources was reviewed, the research methodology was referred to a reliable database. The database is based on macroeconomic indicators and specific indicators of the banking sector, including regression analysis referred to GDP growth, bank assets, deposit portfolio and non performing loans. Annual reports and sustainability reports of influential institutions such as the Central Bank of Azerbaijan, the State Statistics Committee of Azerbaijan, the World Bank and the International Monetary Fund were reviewed in the article. This comprehensive database has enabled a detailed analysis of the role of the banking sector in managing economic growth and will help to better understand its effects on the economic development of Azerbaijan.

In the conducted analysis, it is reflected that there is a strong correlation between the loans given by the banking sector and the relevant figures of GDP. On the one hand, this shows the positive effect of the expansion of bank loans on the growth of GDP. Admittedly, this result shows the importance of additional factors. Data on the volume of bank loans granted from 2005 to 2022 are collected and adapted to a common format.

Table 1. Credit, Deposit portfolio and NPL ratios in the banking sector, GDP trends

Date	Credits (million manat)	Deposits (million manat)	GDP (million manat)
2005	1441.0	1368.7	12522.5
2006	2362.7	2162.2	18746.2
2007	4681.8	4127.2	28360.5
2008	7191.3	6460.2	40137.2
2009	8407.5	6379.1	35601.5
2010	9163.4	7625.8	42465.0
2011	9850.3	9447.0	52082.0
2012	12243.7	10699.2	54743.7
2013	15422.9	12475.8	58182.0
2014	18542.6	15453.4	59014.1

2015	21730.4	23431.4	54380.0
2016	16444.6	22091.0	60425.2
2017	11757.8	20599.1	70135.1
2018	13020.3	21870.4	80092.0
2019	15298.2	24746.0	81896.2
2020	14530.4	23666.9	72578.1
2021	17119.8	29027.7	93203.2
2022	20184.0	36249.8	133825.8

Source: Compiled by the author (based on the information of the Central Bank of the Republic of Azerbaijan and the State Statistics Committee).

The effect of different parameters on GDP is evaluated by Pearson correlation coefficient:

$$r = \frac{\sum (x_i - \overline{x})(y_i - \overline{y})}{\sqrt{\sum (x_i - \overline{x})^2 \sum (y_i - \overline{y})^2}}$$

The conducted analyzes show that there is a strong correlation between the loans granted by the banking sector from 2005 to 2016 and the dynamics of the corresponding historical indicators of GDP. So, if we evaluate the impact of bank loans on GDP, it shows that there is a very strong positive relationship at the level of 0.772. If we evaluate the level of influence of other variables through the same method, the correlation coefficient for for deposits is at the level of 0.935. Thus, although all three variables have a positive correlation effect on GDP, credit and deposits have a stronger effect on GDP. Considering all these mentioned, we can construct a multivariate linear regression model between the mentioned variables and GDP. It is possible to get acquainted with the regression statistics of the established model in *Table 1*.

Table 2. Regression statistics of the model

SUMMARY OUTPUT	
Regression Statistics	
Multiple R	0.936724075
R Square	0.877451993
Adjusted R Square	0.861112259
Standard Error	10703.15572
Observations	18

ANOVA					
	df	*SS*	*MS*	*F*	*Significance F*
Regression	2.00	12303595934.70	6151797967.35	53.70	0.00000015
Residual	15.00	1718363136.25	114557542.42		
Total	17.00	14021959070.95			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	19398.11087	6073.44044	3.193924607	0.01	6452.879005	32343.34274	6452.879005	32343.34274
Credits	-0.46980651	0.848983723	-0.553375168	0.59	-2.279372481	1.339759461	-2.279372481	1.339759461
Deposits	2.88719519	0.492750397	5.859346245	0.00	1.836922579	3.9374678	1.836922579	3.9374678

If we look at the significance coefficient (p value equivalent) of the F parameter given in the ANOVA part of the table, we can see that it is equal to 0.00000015. This means that the constructed model can be considered statistically significant. The R2 performance of the established model is 87%. If we look at the regression statistics of the model, we see that only the p-value of the effect of the deposit independent variable satisfies the appropriate confidence interval condition (95%). Thus, it is possible to model the linear regression relationship between deposits and GDP in the form given below:

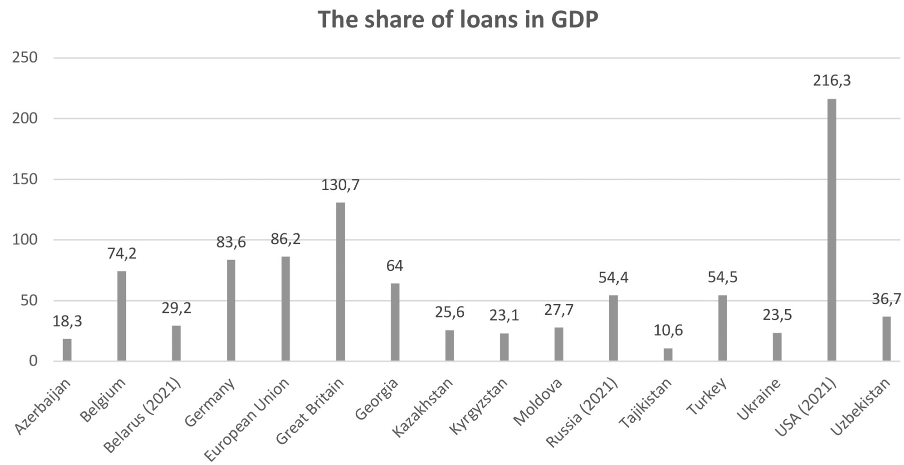
$$GDP = Deposits * 2.887 + 19398.11$$

Results and analysis

The Interrelation between the Banking Sector and Economic Development

In recent years, the improvement of the legal and regulatory framework in the financial and banking sector, modernization of the financial infrastructure, institutional development and the implementation of initiatives implemented by the state have led to significant progress in the financial and banking sector of the country. Considering the country's reliance on a bank-based financial architecture, the banking system plays an important role in financing the economy. The reforms carried out during the last decades led to a significant improvement in indicators of access to finance, and the role of the financial sector in the economy was significantly strengthened. Nevertheless, it is considered important to continue complex measures in order to reach the achievements of benchmark countries in this field. According to the results of 2022, the ratio of bank assets to GDP was 35.2 percent, which reflects the special weight of the banking sector in the economy and the financial depth of the banking sector. The specific weight of the credit portfolio in GDP was 14.6 percent, and its ratio to non-oil GDP was around 28 percent. According to the analyzes in the database of the World Bank, the ratio of loans given to all sectors by the financial sector in our country, except for central governments, is 14.7 percent of GDP. The relevant indicator is 67.4 percent in Georgia, 38.6 percent in Kazakhstan, and 49.6 percent in Ukraine (WBG 2023). Furthermore, in 2022, weight of loans given to the private sector in GDP in Azerbaijan was 18.3 percent. This figure is 64 percent in Georgia, 25.6 percent in Kazakhstan, 23.1 percent in Kyrgyzstan and 36.7 percent in Uzbekistan. In more developed countries, this indicator is higher, which means that there are more credit opportunities in the private sector. For example, 74.2 percent is in Belgium, 83.6 percent is in Germany, 86.2 percent on average is in the European Union, 130.7 percent is in Great Britain (WBG 2023).

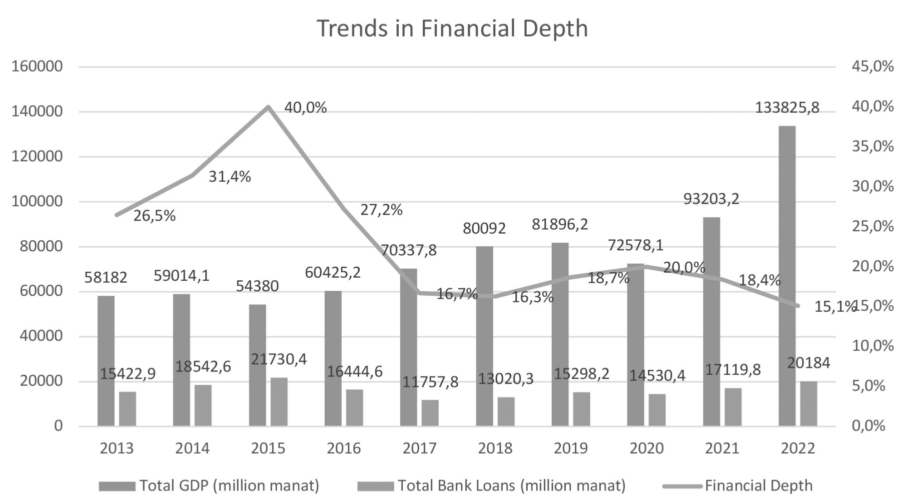
Figure 1. The share of credits provided to the private sector as a percentage of GDP by countries, 2022.



Source: WBG, 2023.

Statistical analyzes show that 55.9% of the loans provided by the banking sector in the country are directed to households. Among the economic sectors, the trade and service sector makes up the largest share of credit investments with 16.4%. Other important sectors of the loan portfolio include construction and real estate – 5.4%, industry and processing sector – 5.3%, and transport and communication sector – 3.9%. The Figure below shows that one of the main reasons for low credit investments in economic sectors is the allocation of credit resources to households and consumer loans, which actually leads to the restriction of access to financial resources for economic sectors (CBAR 2022). In the last ten years, the GDP in Azerbaijan has more than doubled from 58 billion manats in 2013 to 133 billion manats in 2022, and the total credit investments in the economy have increased from 15 billion manats to 20 billion manats. As a result, the financial depth of loans decreased from 26.5 percent in 2013 to 15.1 percent in 2022.

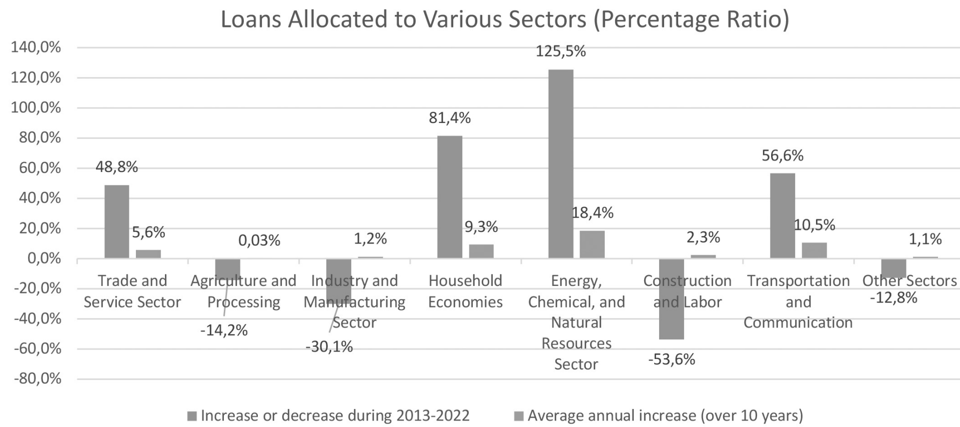
Figure 2. The interrelation between credit allocation to the national economy and GDP trends, financial depth, 2013–2022



Source: Compiled by the author (based on the information of the Central Bank of the Republic of Azerbaijan and the State Statistics Committee).

The analysis of the data shows that the specific weight of agricultural loans in the total loan portfolio of the banking sector has decreased in the last decade. Thus, the relevant indicator has decreased from 4.8% in 2013 to 3.1% in 2022. During the last ten years, the trade and service sector (2 percent increase in the share of the portfolio), energy, chemical and natural resources sector (1.3 percent increase in the share of the portfolio), transport and communication sector (0.6 percent increase in the share of the portfolio) had slight increases in the share of loans granted. On the other hand, the share of the industry and manufacturing sector in the total loan portfolio decreased significantly from 9.8% in 2013 to 5.3% in 2022. The largest decrease was in the share of the construction and real estate sector (15.3 percent in 2013, 5.4 percent in 2022).

Figure 3. Trends in credit allocations by sectors over the last decade (growth and average annual increase)



Source: CBAR, 2023.

As for loans allocated to specific sectors, an increase of 48.8% was recorded in the trade and service sector, 125.5% in the energy, chemical and natural resources sector, and 56.2% in the transport and communication sector whereas there has been a decrease in loans granted to other sectors. As a result, the highest average annual growth in loans to sectors over the past ten years was in the energy, chemical and natural resources sector (18.4 percent average annual growth), transport and communications (10.5 percent), and households (9.3 percent). A decline was observed in loans to agriculture (-0.03 percent), while the industry and manufacturing sector was also selected with low average annual growth rates (1.2 percent) (CBAR 2023).

The financing of the agricultural sector, which serves as a source of employment in the country's economy (over 30 percent in all periods), does not match the development trends of agriculture and lags far behind. Although the GDP of agriculture doubled from 3.1 billion manats to 6.3 billion manats in the last ten years, there was no increase in loans in the sector. Instead, the volume of agricultural loans decreased by 14.2 percent from the level of 2013, from 733.25 million manats to 629.09 million manats.

Conclusion and recommendation

The comprehensive analysis presented in the article examines the important role of the banking sector in Azerbaijan's economic development and highlights its importance in facilitating financial flows, promoting innovation and promoting inclusive development through strategic lending. Banks can finance infrastructure projects, support small businesses, promote financial inclusion, help create jobs, encourage savings and investments, support international trade, etc. instruments capable of promoting economic growth. The banking sector plays an important role in economic development by facilitating access to finance, expanding access to credit and promoting financial inclusion. By mobilizing resources for investment and providing credit to various sectors of the economy, banks enable businesses to invest in new technologies, expand operations, and enter new markets, which leads to economic growth. In addition, banks facilitate the flow of capital into the economy by offering various investment products to investors. The reforms and strategic projects carried out so far have played a key role in increasing the stability of the banking sector and its ability to respond to domestic and international economic dynamics.

However, the banking sector needs to be regulated and further improved. Developing a robust regulatory framework and risk management practices against banking crises is critical. In addition, comparative analysis with regional and global benchmarks, particularly in terms of financial depth and credit availability for economic sectors, reveals areas in need of improvement. Implementation of regulatory reforms, improvement of digital banking services, and sustainable banking practices have not only increased operational efficiency for Azerbaijani banks, but also expanded their reach to underserved populations. It has played an important role in promoting financial literacy, encouraging savings, investment and supporting the growth of small and medium enterprises (SMEs), which are important for diversifying the economy and reducing dependence on oil.

In order to increase the role of the banking sector in Azerbaijan, as a result of continuous economic reforms, it may be considered appropriate to consider the following recommendations to increase the efficiency of the country's banking system:

- Expanding access to credit for non-oil sector, agriculture, energy, technology and other strategically important sectors, along with innovative lending models, can increase the inclusion of the banking sector and stimulate economic growth;
- It is important to develop specialized financial services in relevant fields and to increase the role of the banking sector in diversifying the economy in order to improve access to finance, especially taking into account the importance and the rele in the economic development, for SMEs;

- Increasing financial literacy: Capacity building for both the banking sector and the entrepreneur, holding educational events and investing in financial literacy programs can significantly increase the effectiveness of financial intermediation;
- Continuous improvement of the legal and regulatory framework is essential to increase the stability and resilience of the banking sector. This includes adopting international best practices in risk management and regulation to reduce the risk of banking crises and ensure sustainable development;
- Accelerating adoption of digital banking services and fintech can significantly improve the efficiency and accessibility of financial services. This transformation should focus on integrating advanced technologies to simplify banking operations, improve customer satisfaction and expand financial inclusion.