

THE IMPACT OF MODERN FINANCIAL TECHNOLOGIES ON THE FINANCIAL MARKET OF GEORGIA

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Abstract

This paper analyzes the impact of modern financial technologies (fintech) on traditional financial institutions (banks) in Georgia. The research involved both quantitative and qualitative methods. Assumptions were made based on the analysis of the financial indicators of the leading traditional Georgian bank, results of surveys with traditional bank customers, results of structured interviews with specialists of the National Bank of Georgia, and results of structured interviews with top management of financial institutions. These assumptions focus on whether banks have managed to adapt to the modern financial environment, what impact fintech has had on their financial stability, and whether the National Bank is capable of addressing the risks associated with fintech by introducing relevant regulatory norms. The article concludes with pertinent findings and recommendations.

Keywords: traditional banks, fintech, finance, Georgia, technologies

Introduction

i. *Relevance of research*

The financial industry is crucial in daily life, evolving through centuries due to political, geographical, and legislative changes. Authors suggest a new era for banks with the ascent of financial technology ('fintech'). (Berger, Allen N., 2002), (Yongwoon Shim, Dong-Hee Shin, 2016). Fintech is the intersection of the financial industry, information technology (IT), and innovation. The term fintech derives from combining finance and technology, encompassing the development of technology and innovation to support banking and financial services. Fintech also encompasses technologies such as cloud computing and mobile internet, which facilitate financial services including loans, payments, money transfers, and other banking services. (Ferdinando Giglio, 2021). In the age of digital technologies disrupting financial markets, traditional banks are likely to either compete or undergo restructuring (Xavier Vives, 2018). To keep pace with current trends and avoid losing competitiveness in a rapidly growing environment, traditional financial institutions embrace changes and strive to meet market demands. In the news, fintech is portrayed as disruptive, revolutionary, and equipped with 'digital weapons' that can break down barriers and challenge traditional financial institutions (World Economic Forum, 2017). Fintech brings opportunities to the market but also poses some risks. These risks must be addressed by regulators to ensure that consumers can benefit from innovation without compromising the stability of the financial sector (Maxime Delabarre, 2021).

ii. *The purpose of the research*

The purpose of the research was to determine the impact of modern financial technologies on the financial market of Georgia. In particular, we determined the following: (1) What are the risk factors

associated with the developed financial technologies in Georgia, and is the regulatory body (National Bank of Georgia) capable of addressing these risks by introducing appropriate regulatory norms. (2) Have banks managed to adapt to the environment, and what has been the impact on banks of offering new financial products and services to customers with the help of modern financial technologies.

Literature review

i. *Definition of fintech*

The term financial technology, or "fintech," describes a variety of innovative business models and emerging technologies that can potentially transform the financial services industry (IOSCO, 2017). Fintech refers to technology-enabled financial innovation that can lead to new business models, applications, processes, or products that are materially related to financial markets and institutions. More specifically, the Financial Stability Board (FSB) defines fintech as the new processes and products that become available for financial services due to advances in digital technology (The Financial Stability Board, 2017).

ii. *FinTech Opportunities and Threats*

Fintech brings opportunities and benefits to market players and consumers, but at the same time, it brings risks that must be adequately assessed and managed. The opportunity to impact essentially all services offered by traditional financial institutions, such as banks, comes through cost reductions brought about by advances in digital technology, improved and new product offerings for consumers, and limited regulatory burdens. In addition to opportunities, there are threats posed by fintech companies (Ahmed T. Al Ajlouni et al, 2018): Fintech competition intensifies market pressure on banks' market share and profit margins. Fintech firms heavily rely on information technology (IT), raising IT dependency across all market players (banks, insurance, fintech), thereby

increasing the risk of IT control failures due to limited expertise and outdated infrastructure. The automation and complexity of fintech services amplify challenges in compliance with Anti-Money Laundering (AML) and Counter Financing of Terrorism (CFT) regulations. Standardization is lacking, complicating compliance efforts. Platform-based fintech services face risks like platform failures and user fraud. Meanwhile, cyber threats escalate with greater API and cloud computing reliance among financial institutions.

iii. **fintech market in Georgia**

The financial technology market in Georgia is at the initial stage of development. According to today's information, the "Georgian Fintech Association" operates in our country, and as of 2022, it represents 21 fintech companies. The association estimates that there are approximately 50 companies operating in Georgia's fintech market. Additionally, there is a growing trend of international players showing interest in the market. It was determined that the impact of fintech on the Georgian market is growing and holds even greater long-term prospects (Lashkhi, 2023).

Methodology

The research method used combines qualitative and quantitative approaches to investigate the impact of financial technologies on traditional financial institutions in Georgia. Notably, there is a scarcity of academic literature and statistical data on this topic in Georgia. Qualitative research employed a structured interview format, offering a formalized approach with predefined questions, both open-ended and closed, ensuring consistency in data collection (Collis, J., & Hussey, R., 2013). Interviews included representatives from traditional financial institutions and the National Bank of Georgia, yielding diverse and insightful data for thorough analysis. Quantitative research analyzed financial indicators from the last 5 years of "TBS Bank" through financial statements, examining the influence

of modern financial technology on traditional financial stability. Additionally, a questionnaire using a Likert scale was employed, facilitating efficient data collection with a sample size of 97 respondents calculated via the Raosoft platform. This method offers a cost-effective and timely approach compared to traditional methods, such as expert panels (Andrew T. Jebb, L.T., 2021). The questionnaire will be distributed online via Google Docs to reach a broad audience.

Based on the literature review, three hypotheses were identified:

— *Hypothesis 1: „Traditional banks in Georgia can adapt to the evolving environment by integrating modern financial technologies“.*

— *Hypothesis 2: „The current regulatory framework in Georgia effectively manages risks associated with modern financial technologies“.*

— *Hypothesis 3: „Increased competition resulting from the development of financial technologies in Georgia's financial market enhances the financial stability of traditional banks“.*

Quantitative and qualitative research results

Econometric findings obtained as a result of the survey of bank customers

As mentioned above, in order to obtain the data needed for the research and to prove "Hypothesis 1", a questionnaire model based on a Likert scale was developed, which is a 5-point scale (1. Strongly disagree, 2. Disagree, 3. Neutral, 4. Agree, 5. Completely agree). According to the selected methodology, the sample size was determined to be 97 people (customers of traditional bank services), but a total of 105 responses were collected from the questionnaire. Independent and dependent variables were distributed in the questionnaire. In general, the research model took the following form:

Variable	Description	N
independent variable	Offering a variety of modern financial services and technologies	X1
independent variable	Improved overall customer banking experience with the help of financial technology	X2
independent variable	Improving the services offered by financial technologies	X3
independent variable	Better management of finances using financial technologies	X4
independent variable	High level of security provided by financial technologies	X5
independent variable	Providing simplified banking processes	X6
dependent variable	Successful adaptation of traditional banks to the environment	Y1

The responses obtained through the questionnaire were statistically processed using SPSS. Statistically, variables were tested for correlation.

Correlations							
	Y1	X1	X2	X3	X4	X5	X6
Y1	1,000						
X1	0,968	1,000					
X2	0,951	0,966	1,000				
X3	0,916	0,925	0,919	1,000			
X4	0,932	0,941	0,958	0,901	1,000		
X5	0,948	0,951	0,946	0,901	0,933	1,000	
X6	0,948	0,950	0,973	0,895	0,965	0,931	1,000

Results of the regression analysis:

High correlations between Y1 and the independent variables suggest that these variables may be significant predictors of Y1 in the regression model. However, the presence of multicollinearity between independent variables can cause difficulties in the interpretation of regression coefficients. Based on the statistics provided, variables X1, X2, X4, and X6 exhibit low tolerance values (ranging from 0.032 to 0.129), indicating potential multicollinearity.

Additionally, these variables demonstrate high VIF values (ranging from 17,824 to 30,948), which further confirms the presence of multicollinearity. Therefore, there appears to be multicollinearity in the model, particularly among variables X1, X2, X4, and X6. To address multicollinearity, we aggregated these independent variables (X1,X2,X3,X4,X5,X6) under the name "Average Rating Score" and resulted in the following statistic:

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.969 ^a	0,940	0,939	0,315
a. Predictors: (Constant), average rating score				
b. Dependent Variable: Y1				

Based on the results, it appears that the predictor variable(s) in the model exhibit a very strong linear relationship with the dependent variable. The model explains a substantial portion of the variance in the

dependent variable, and the predictions made by the model are relatively accurate (indicating a low standard error of the estimate).

ANOVA ^a						
Model		Sum Squares	df	Mean Square	F	Sig.
1	Regression	157,558	1	157,558	1591,815	<.001 ^b
	Residual	10,096	102	0,099		
	Total	167,654	103			
a. Dependent Variable: Y1						
b. Predictors: (Constant), average rating score						

In summary, the ANOVA results confirm that the regression model is highly significant.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	0,166	0,102		1,625	0,107			
	average rating score	0,964	0,024	0,9694	39,898	0,000	0,9694	0,9694	0,9694
a. Dependent Variable: Y1									

In short, the average rating score shows a highly significant and strong positive relationship with Y1. Its standardized coefficient highlights its relative importance in predicting Y1, while its high t-value and low p-value underscore its critical role in the model. Therefore, it is reasonable to conclude that Y1 depends on the average rating score, implying that changes in the average rating score are associated with predictable changes in Y1.

Findings obtained as a result of the study of financial indicators of TBC Bank

As mentioned above, in order to obtain the data needed for the research and to test hypothesis 3, the

financial indicators presented in the financial statements published by the leading traditional financial institution ("TBS Bank") in the last 5 years were also analyzed. Independent and dependent variables were defined for the analysis, as follows: In the methodology of quantitative research, the independent variable is "the increase in competition caused by the development of financial technologies in the financial market of Georgia", and the dependent variable is "the financial stability of traditional banks". This stability is confirmed by the following financial indicators: "ROE", "ROA", "cost-to-income ratio", and "net profit margin". The results are as follows:

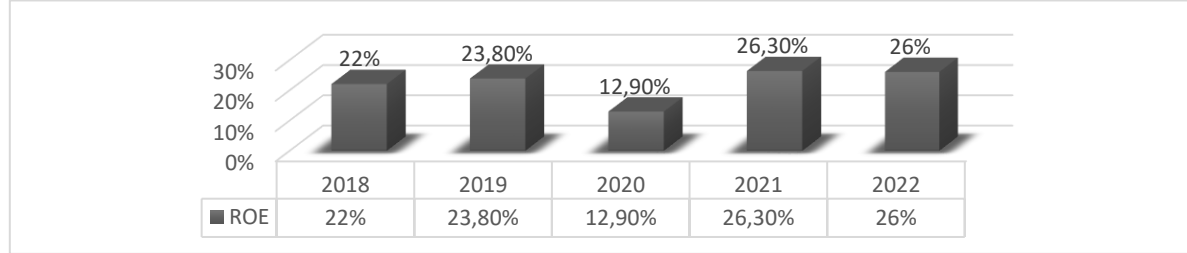


Table 1: TBC Bank's return on equity from 2018 to 2022

Source: TBC Bank's management report for the year ended 2022

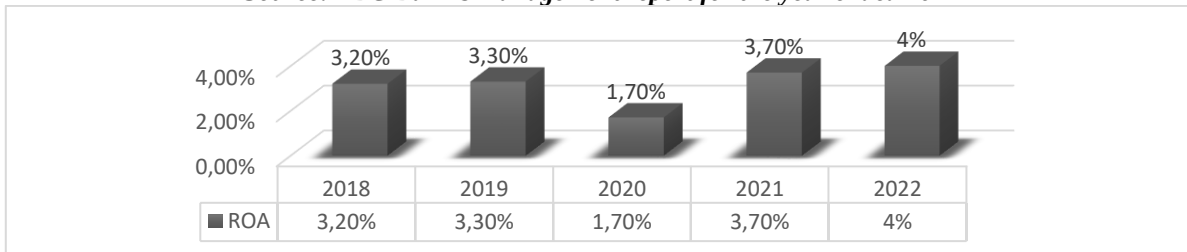


Table 2: TBC Bank's return on average total assets from 2018 to 2022

Source: TBC Bank's management report for the year ended 2022

Based on the tables mentioned above, it was found that TBC Bank increased its revenues by minimizing costs. A significant increase was observed in the cost-

to-income ratio from 2018 to 2022. After 2018, TBC Bank managed to significantly increase ROE.

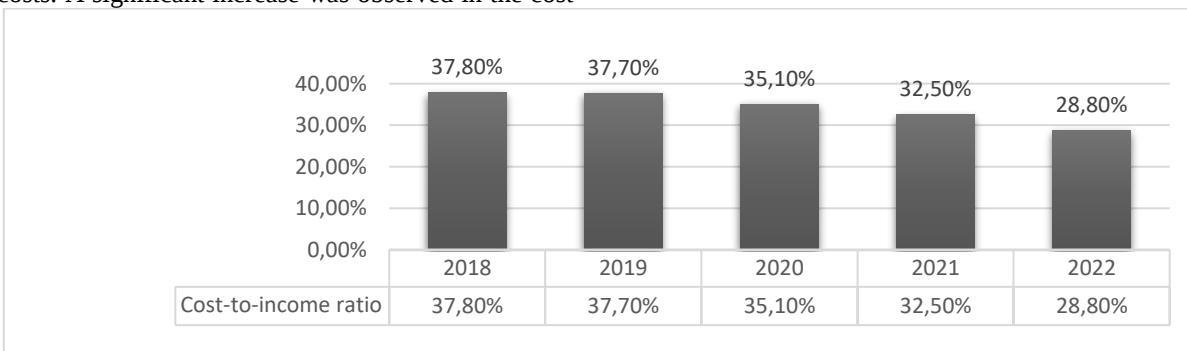


Table 3: TBC Bank's cost-to-income ratio from 2018 to 2022

Source: TBC Bank's management report for the year ended 2022

In 2022, net profit growth was driven by a 24.8% increase in net interest income, reaching 1,243.1 million GEL. Higher interest income from loans contributed significantly, rising by 356.7 million GEL or 19.1%, supported by a 5.3% expansion in the credit portfolio to 902.7 million GEL and a 1.0 percentage point increase in interest rates. Conversely, interest expenses grew by 12.6%, totaling 109.4 million GEL, mainly due to a 19.9% increase in the deposit portfolio, which reached 2,957.2 million GEL, and a slight rise in deposit interest rates. As a result, the net interest margin (NIM) for 2022 improved to 5.9%, up 0.9 percentage points from the previous year. The Bank of Georgia's 2022 report underscores significant strides in digitization, particularly in adopting modern financial technologies. The Georgian Fintech Association, representing 21 companies, notes growing interest from international players, with approximately 50 fintech firms active in the Georgian market as of 2022.

Qualitative analysis findings related to traditional financial institutions

In-depth interviews with traditional financial institution leaders reveal: Respondents define fintech as using innovative technologies like apps to improve

financial services, replacing traditional methods for faster transactions. Competition in Georgia's financial market has heightened with traditional banks adopting fintech and new fintech firms entering. Despite this, respondents do not see fintech as a major threat due to Georgia's underdeveloped startup ecosystem, lacking elements like an innovative workforce and venture capital. Respondents view fintech firms more as partners than competitors, advocating collaboration in the digital era. Traditional banks prioritize customer trust, cost reduction, personalized service, speed, usability, availability, and flexible design to retain customers amidst fintech competition. Security and data privacy are critical concerns in fintech-enabled services, requiring regulatory oversight to protect consumers and integrate fintech into daily financial operations. Respondents highlight consumer trust issues in some fintech companies, suggesting actions to enhance confidence in Georgia's fintech sector. Traditional banks are proactive in innovation, swiftly adopting successful market products that align with customer needs, ensuring competitiveness in the evolving fintech landscape.

Qualitative analysis findings related to regulatory body (NEB).

The structured interview with National Bank of Georgia representatives confirmed regulatory measures and practices concerning financial technologies (fintech):

1. Regulatory frameworks include: (1) Regulatory laboratory framework (Order No. 110/04, May 25, 2020); (2) Open banking inclusion rules (Order No. 80/04, May 3, 2023) (3) Credit information bureau rules (Order No. 193/04, August 27, 2018); (4) Risk management for data-based models (Order No. 151/04, August 17, 2020); (5) Credit register rules (Order No. 88/04, July 6, 2021); (5) Credit information bureau procedures (Order No. 195/04, August 27, 2018); (6) Digital Bank and Financial Innovation Office regulations.
2. Requirements for information systems: (1) Policies ensuring system adequacy and security aligned with international standards (NIST, ISACA, ISO); (2) Tailored system implementation and regular evaluations; (3) Impartial audits to maintain system efficiency; (4) Information security policy integration with business strategies.
3. Separate units address fintech regulation, cybersecurity, and data privacy risks comprehensively.
4. Consumer protection regulations: (1) Rules safeguarding consumer rights (Order No. 32/04, Order No. 01/04); (2) Law on Protection of User Rights ensures transparency in financial services.
5. Money laundering and terrorist financing prevention governed by the AML Law.
6. Ongoing communication with accountable parties through seminars, guidelines, and a dedicated portal supports risk management and compliance efforts.

Conclusion

Quantitative research confirms traditional banks in Georgia effectively adapt to the evolving environment by integrating modern financial technologies. Users perceive these banks have enhanced banking experiences, improved service quality, strengthened financial management, ensured robust security, streamlined processes, and expanded into diverse financial services. This adaptation meets changing customer expectations in the digital age. Moreover, banks significantly increased their credit portfolios through digital channels amidst heightened market competition, boosting net profits and overall stability. Respondents note increased market competition with fintech firms emerging, yet they do not foresee these firms posing a major threat soon due

to Georgia's nascent startup ecosystem and consumer trust issues. Collaboration between traditional banks and fintech firms is seen as beneficial for competitiveness in the digital realm. The National Bank of Georgia mandates cybersecurity measures and provides ongoing guidance to ensure banking sector security and compliance with international standards. Research supports hypotheses that banks can adapt to new technologies, regulatory frameworks manage associated risks effectively, and market competition enhances banks' stability.

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