The impact of financial innovation in banks on financial performance - Dubai Islamic Bank as a model - an econometric study using the ARDL approach during the period 2013 - 2023

أثر الابتكار المالي في البنوك على الأداء المالي – بنك دبي الإسلامي أنموذجا –

دراسة قياسية باستخدام منهجية ARDL خلال الفترة 2013–2023

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Abstract:

Financial innovation is one of the important topics that requires significant attention and in-depth analysis, therefore, this study aims to highlight the impact of financial innovation on the financial performance of Dubai Islamic Bank during the period 2013-2023, using the distributed Autoregressive model (ARDL) and utilizing the Eviews 12 software, financial innovation indicators were represented by investments in Sukuk (IS), Murabaha (MRH), Musharakah (MSH), and Ijarah (IJR), while the financial performance indicator was represented by net profit margin (NPM).

The study's findings indicate a statistically significant positive impact at a 5% significance level of financial innovation on the financial performance of Dubai Islamic Bank, This indicates the existence of a co-integration relationship in the short and long term, which confirms the importance of adopting financial innovations in the banking sector.

Key words: financial innovation; financial performance; Dubai Islamic Bank.

ملخص:

الابتكار المالي هو أحد الموضوعات المهمة التي تتطلب اهتماما كبيرا وتحليلا معمقا، لذلك تهدف هذه الدراسة لإبراز أثر الابتكار المالي على الأداء المالي لبنك دبي الإسلامي خلال الفترة 2013–2023، باستخدام نموذج الانحدار الذاتي الموزع (ARDL)، وبالاستعانة ببرنامج Eviews 12، تمثلت مؤشرات الابتكار المالي في، الاستثمار في الصكوك (IS) والمرابحة (MRH) والمشاركة (MSH) والإجارة (IJR)، بينما مؤشر الأداء المالي تمثل في هامش الربح الصافي(NPM).

توصلت نتائج الدراسة إلى وجود أثر إيجابي ذو دلالة إحصائية عند مستوى دلالة 5٪ للابتكار المالي على الأداء المالي لبنك دبي الإسلامي، مما يدل على وجود علاقة تكامل مشترك على المدى القصير والطويل، وما يؤكد أهمية احتضان الابتكارات المالية في القطاع المصرفي.

الكلمات المفتاحية: ابتكار المالي؛ أداء المالي؛ بنك دبي الاسلامي.

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1. INTRODUCTION

In light of the transformations and changes that the financial system is going through, the banking sector in the world has witnessed significant developments and changes in recent times, especially after the global financial crisis in 2008, and the emergence of financial engineering and financial tools and the innovations that it produced as solutions to financial problems and preventing the occurrence of crises, financial engineering serves all aspects of the financial system, and plays a key role in financial innovation, especially in effective risk control, It not only builds a better social welfare system, but also promotes macro control over finance (Ye, 2022, pp. 50-51), As customers' needs and desires to use innovative financial products and services and meet customer demand increase, financial service providers are forced to adopt digital and innovative technologies, changing the way service providers operate (Chaturvedi, 2023, pp. 1-2).

Banks have embraced financial innovation with the aim of broadening and deepening their revenue channels and the need to better survive with customers, with a myriad of needs (Murebwa, 2022, pp. 56-57), play in ensuring the social and economic well-being of individuals by providing the opportunity for low-income people to benefit from financial services and introducing innovations in the financial system such as the use of advanced technology, as the banking sector dominates the financial sector and it is very difficult to obtain statistical information For non-bank financial institutions more than the banking sector (Idun, 2023, pp. 2-3), developing the payments infrastructure improves the bank's performance by generating more fees and revenue, increases the quality of financial activities, and improves relationships, customer loyalty, customer preferences, and employee performance (Hizkia, 2023, pp. 209-210), Financial technologies also help improve taxation, increase the liquidity of market-based products, reduce transaction costs, and reduce agency costs between executive management and shareholders of financial institutions (Deresa, 2022, pp. 55-56), In fact, the bank's performance depends on financial innovation because it has the ability to enhance the efficiency and profitability of the financial industry.

so banks use financial and regulatory innovations to save money and improve the sector, and for the company's innovative efforts to be fruitful, the market must respond positively, either by increasing sales or Increased customer happiness, or a more positive overall perception, (Wójcik-Czerniawska, 2023, pp. 106-107), From another perspective, Arab banks are still facing great challenges in the field of developing and innovating financial products that enable them to increase their profit rates and avoid potential financial risks, On this basis, we decided to study the following main problem: What is the impact of financial innovation on the financial performance of Dubai Islamic Bank in the long and short term during the period 2013-2023?

This study seeks to achieve a set of objectives, the most important of which is highlighting the important role of financial innovation in the financial performance of banks and highlighting the importance of financial innovation and its most important classifications, in addition to identifying the reality of financial innovations used in Dubai Islamic Bank and analyzing their impact on financial performance.

2. Theoretical framework of financial innovation and financial performance

According to gowland financial Innovation means introducing a new product to the market or the production of an existing product, but in a new way (Gowland, 1991, pp. 79-115), Benhalima see financial innovation as Imaging and positioning Engineering Techniques at Crossroads In the fields of economy and finance insurance, mathematics, legal and tax issues (Benhalima, 2016, p. 49)

, Tufano adds that financial innovation is the act of Creating and then popularizing new financial Instruments as well as new financial technologies, Institutions, and markets (tufano, 2003, pp. 307-335), Based on the previous definitions, we conclude that financial innovation is It is the creation or development of new financial products that increase liquidity, reduce risks, and generate shares, The concept of financial innovation has appeared relatively in recent economic analysis, contrary to the concept of innovation Industrial Financial innovation appeared because (SEDJAR, 2008, p. 56) , thus, innovation entails a multi-stage process in which new ideas must first be created, tested, put into production, and finally placed on the market to affect individuals, businesses, and society as a whole (Agarwal& S. – Zhang, 2020, pp. 353-367), that many financial innovations can serve multiple goals and fall under more than one category, and the functional approach classifies financial innovations according to their contribution to the functioning of the financial system, i.e. their purpose to: (Khraisha & Arthur, 2018, p. 4)

- reduce transaction costs;
- transfer and risk sharing;
- risk pricing;
- liquidity management and enhancement;
- enhance credit generation and availability;
- stock generation, insurance;
- asset and liability management;
- Financing of financial institutions.

Financial innovations are not a homogeneous group of new financial developments, so organizing their classification will be reasonable, and based on Table (1), financial innovations can be classified according to different criteria. One of the most important criteria for classification of financial innovations is our (Bennamoun, 2016, p. 116).

Table 1. Classification of the financial innovations

Criteria	**Types of financial innovations**
Sources of innovations	Supply-driven innovations Demand-driven innovations
Factors of innovations	External factors driven innovations Internal factors driven innovations
Motives of innovations	Adaptive innovations Aggressive innovations Defensive innovations Protective innovations Responsive innovations
Elements of the financial system	Financial market innovations Financial institutions innovations Financial instruments innovations Financial regulations innovations
Types of innovations	Product innovations Process innovations Risk-shifting innovations
Effect of innovations	Sustainable innovations Harmful innovations
Moment of creation	Ex-ante innovations Ex-post innovations
Underlying assets	Debt-linked innovations Equity-linked innovations

Source: *(Błach, 2011, p. 22)*

On the other hand, the bank's financial performance demonstrates the use of resources to achieve the bank's objectives, It encompasses a range of indicators that indicate the bank's position and its capacity to accomplish its goals, Evaluating the performance of banks enables the determination of their operational outcomes and overall financial state, additionally, it showcases the organization's ability to effectively utilize its available human, material, and financial resources to achieve the financial objectives set by the organization, This entails minimizing costs while maximizing gains (Beldi & Gaidi, 2021, p. 727), Pierre defined financial performance as the ability of managers to achieve their goals by increasing the annual sales rate and achieving specific financial ratios (Josée, 2018, p. 123), Generally speaking, the significance of financial performance can be confined to emphasizing the assessment of the company's status and operations through the evaluation of its liquidity, profitability, debt, and the profits it generates (Berrani Mokhtaria, 2021, p. 656).

One of the indicators used to assess financial performance is the return on assets (ROA), which represents the ratio of net income to total assets. It serves as a measure of the bank's profitability and the management's ability to generate income using the company's available assets (ALAMI YOUSSEF, 2021, p. 08), A higher ROA indicates better performance for the bank. The calculation for ROA is as follows: return on assets = results / average total assets > 1%. However, it is crucial to interpret this ratio accurately for the following reasons (DE COUSSERGUES, 2013, p. 565) :

- The ROA is heavily influenced by the credit institution since the net result incorporates the cost of risk Moreover, assets are shown net of provisions in the bank balance sheet;
- Assets are all placed on the same level when they are not Homogeneous in terms of risk;
- Off-balance sheet activities and provision of services, which Contribute to the formation of the result, are not taken into account.

Similarly, the return on equity (ROE) allows for an evaluation of a commercial bank's effectiveness in conducting its operations while providing financial resources to investor shareholders. However, the larger the proportion of private funds in a commercial bank, the more challenging it becomes to ensure high profitability of its capital (alekseevich , 2019, p. 18), The ROE indicates the result obtained by the bank from investing each unit of equity and is also known as the financial profitability ratio. It determines the return on equity, The calculation for ROE is as follows: ROE = results / average private fund > 15% (SENOUCI Kouider, 2022, p. 565). To make its capital profitable, a bank must enhance its operating results.

As for the net profit margin (NPM), it is a profitability ratio used to measure the total net profit of the company, and it is considered an important indicator in evaluating the profit performance of banks (Jennifer, 2022, p. 219)

3. LITERATURE REVIEW

Financial innovation has emerged as a significant factor with a profound impact on the demand for money at various levels - global, regional, and national. Studies have revealed that money, ATMs, and real GDP positively influence money demand, and their effects are statistically significant. Consequently, it has been observed that financial innovation has a positive influence on money demand within the EAC region (Edwin Kipchirchir, 2023, pp. 12-22), in the Chinese banking sector, enhancing the profitability of commercial banks has become a crucial aspect driving financial innovation and reform. this is seen as a key strategy to improve competitiveness (Xu, 2022, pp. 1-9).

A study focusing on the State Bank of India demonstrates that numerous financial innovations have taken place within the institution, these innovations have not only had a positive impact on the bank's financial performance but have also contributed to overall economic growth in the nation (Cha231) Similarly, research by Charles reveals that digital financial innovation significantly influences the long-term development of the financial system, Automated teller machines (ATMs), point-of-sale (POS) systems, mobile payments (MP), and mobile banking are considered significant contributors to the long-term development of the financial system (Charles O.Manasseh, 2023), Based on the analysis using the ARDL model, it is confirmed by Olawale Ashiru that POS banking service has the most significant impact on deposit money bank performance due to the high volume and value of transactions witnessed in the banking sector. Therefore, there is a need to make more mobile and e-banking services available (Ashiru, 2023).

The relationship between financial innovation and financial performance was examined using an error correction model. Findings suggest that automated teller machines and branch expansion negatively affect financial performance in the long run. On the other hand, variables such as mobile banking, internet banking, debit cards, prepaid cards, and point-of-sale terminals have a positive impact on the financial performance of commercial banks in the long run. In the short run, automated teller machines, point-of-sale terminals, mobile banking, and branch expansion were found to positively influence commercial bank performance. However, variables like internet banking, debit cards, and prepaid cards were found to have a negative impact on the sector's financial performance (Deresa Goshu Desalegn, 2022, pp. 55-56).

It was also found that Financial innovation in Islamic banks has been found to have a significant impact on enhancing and improving profitability. A field study conducted at Algerian Salam Bank supports this notion (Boubeker SAIDI, 2022, pp. 286-275), In addition, Kashida's study on the impact of financial innovation on the profitability of Islamic banks concluded that there is a statistically significant effect of Islamic financial innovations, such as Murabaha, Ijarah, Istisna'a, Musharaka, Mudaraba, agency, and sukuk of Dubai Islamic Bank, on its profitability. (habiba kechida, 2021) .

Studies have indicated that customer purchasing intentions significantly increase when customers are satisfied with the quality of e-banking services, Factors such as reliability, efficiency, responsiveness, communication, security, and privacy were found to have a significant and positive impact on customer purchasing intentions (Khatoon, 2020), in the era of digitization, Narcisa explores the dynamic nature of the banking sector and how technology investments successfully meet customer needs and provide access to new operators who aim to implement innovative strategies successfully (Narcisa Roxana Moşteanu, 2020, pp. 307-315),

The advent of electronic banking, the rise of fintech companies, increased crypto volume, and blockchain technology have significantly transformed traditional banking businesses, Understanding and justifying the fundamental principles for future bank development and identifying measures to minimize financial risks associated with the implementation of financial innovations have become crucial (Druhov, Druhova, & Pakhnenko, 2019, pp. 167-177).

4. MATERIALS AND METHODS

The study used quarterly time series data for the period 2013-2023. Data were collected from the source (dubai islamic bank, 2023) , and the research variables were determined in Table 2 and analyzed using the Eviews12 statistical analysis package.

To measure financial performance, we chose the net profit margin, which measures the net profit generated from sales. Financial innovation contributes to changes in the level of financial performance through new financial tools and services. Therefore, one indicator cannot be considered sufficient to measure the impact of financial innovation on financial performance, so we chose four indicators to measure it, respectively: Investment in Sukuk (IS), Murabaha (mrh), Musharaka (msh) Ijarah (ijr).

An autoregressive distributed time lag (ARDL) model is used to model the relationship between economic variables in a time series preparation (Kripfganz & Schneider, 2018, p. 2) to analyze cointegration in the long and short run when the time series is constant I(0) or integral of difference I(1), and it may be a mixture of time series constant at the level and first difference, and the ARDL/EC model is useful for predicting and separating long relationships term for short-run dynamics (Kripfganz & Schneider, 2018, p. 3)

(Investment in Sukuk, Murabaha, Ijara, and Musharaka) is a function of the financial innovation function in the case of the ARDL data logarithm model, which can be expressed as follows:

$$NPMit= f(ISit, MRHit, IJRit, MSHit)\ldots\ldots...(1)$$

The standard ARDL data model is as follow:

$$\Delta NPMt = \beta 0 + \beta 1\, IS + \beta 2\, MRH + \beta 3\, IJR + \beta 4 MSH\ \mu t \ldots\ldots (2)$$

The main idea of this paper is to find the impact of financial innovation on the development of financial performance in Dubai Islamic Bank, by understanding the current empirical studies, to analyze the effect between the variables, we perform the autoregressive test for the distributed time gaps.

Based on 4 hypotheses:

Hypothesis 1: There is a statistically significant effect at 5% between investment in sukuk and net interest margin;

Hypothesis 2: There is a statistically significant effect at 5% between Murabaha financing and net interest margin;

Hypothesis 3: There is a statistically significant effect at 5% between Ijarah financing and net interest margin;

Hypothesis 4: There is a statistically significant effect at 5% between Musharaka financing and net interest margin.

5. RESULTS AND DISCUSSION

5.1.Unit Root Tests for the Variables:

The unit root test is performed as the first step to study the stability of the time series data in order to ensure its degree of integration at level I(0) or from the first difference I(1) because the ARDL model applies only at these degrees and cannot be used in the case of integrated data of degree I(2), the (AdF) test (David.A.Dickey&WayneA.Fuller, 1981, pp. 1057-1072), and the (pp)

test (Phillips.P&Perron.P, 1988, pp. 335-345) were used, the results were according to the table below.

The values in parentheses represent the probability p (value) at the 5% level, where the results of the table below show that all variables are stable at level I(0) (IS, IJR, MSH, MRH, NPM) because p(value) is less than the 5% significance level except for (IS) which is stable at level I(1) because p(value) greater than the level of significance 5%, and therefore the results allow the possibility of applying the ARDL model, which is a modern approach that combines autoregressive (AR) models and distributed time gap models.

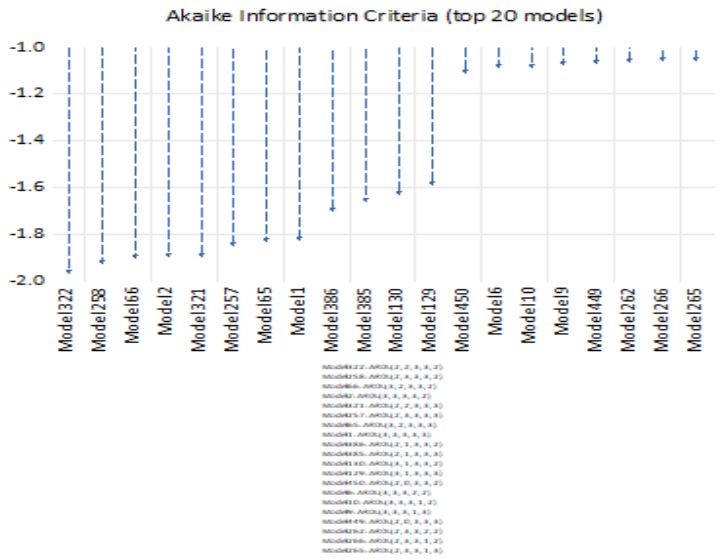
Table2. unit root test

variables	Dicky-Fuller (ADF)				Phillips-Perron (PP)				Results
	At level		At first difference		At level		At first difference		
	Inter-cept	Trend and intercept	Inter-cept	Trend and intercept	intercept	Trend and intercept	Inter-cept	Trend and intercept	
IS	-0.500472 (0.8777)	-1.954156 (0.6017)	-5.742964 (0.0001)	-5.682097 (0.0004)	-0.487623 (0.8803)	-1.950302 (0.6037)	-5.750966 (0.0000)	-5.682097 (0.0004)	I(1)
MRH	-5.136268 (0.0002)	-5.043894 (0.0017)	-8.818044 (0.0000)	-8.669861 (0.0000)	-5.131695 (0.0002)	-5.040919 (0.0017)	24.08712 (0.0001)	-27.17817 (0.0000)	I(0)
IJR	-4.293961 (0.0021)	-5.725248 (0.0003)	-4.707337 (0.0009)	-4.663678 (0.0050)	-4.292356 (0.0021)	-8.574368 (0.0000)	24.98632 (0.0001)	-27.35790 (0.0000)	I(0)
MSH	-5.176089 (0.0002)	-5.157980 (0.0012)	-8.919701 (0.0000)	-8.762897 (0.0000)	-5.176089 (0.0002)	-5.157966 (0.0012)	-26.02448 (0.0001)	-28.10352 (0.0000)	I(0)
NPM	-5.660340 (0.0001)	-5.574319 (0.0004)	-8.934024 (0.0000)	-8.766877 (0.0000)	-5.725938 (0.0000)	-5.634314 (0.0004)	-29.95790 (0.0001)	-29.18668 (0.0000)	I(0)

Source: *prepared by researchers based on the Eviews12 program.*

The following graph represents the criterion for selecting the order of variables based on the Akaike Information Criterion (AIC), where the optimal interval length was determined according to the AIC, among our top 20 models. The best model for this study is the model ARDL(2,2,3,3,2).

Figure.1. Akaike Information Criteria (top 20 model)



Source : *Outputs of the Eviews12 program*.

5.2. Bounds Test: This test is based on the following hypothesis:

- **Acceptance of the null hypothesis H0**: means that there is no cointegration relationship between the study variables (the long-term equilibrium relationship);
- **Acceptance of the alternative hypothesis H1**: It means that there is a cointegration relationship between the variables of the study.

For this the test is performed by comparing the calculated Fisher statistic with the critical values suggested by Pesaran and al (M. Hashem Pesaran, 2001, pp. 289-326) .

- **if:** Fcal ≥ Fupper, the null hypothesis is rejected and the alternative hypothesis is accepted, that is, there is a cointegration relationship (long-term relationship);
- **If:** Fcal ≤ Fupper, the null hypothesis is accepted and the alternative hypothesis is rejected (there is no cointegration between the variables of the study);

- The critical value ≤ Fcal ≤ Fupper In this case, the test is considered to be indeterminate (the uncertainty zone).

Table 3. Results of the Bounds Test

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
		Asymptotic: n=1000		
F-statistic	102.0363	10%	2.2	3.09
k	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37
Actual Sample Size	28	Finite Sample: n=35		
		10%	2.46	3.46
		5%	2.947	4.088
		1%	4.093	5.532
		Finite Sample: n=30		
		10%	2.525	3.56
		5%	3.058	4.223
		1%	4.28	5.84

Source: *Outputs of the Eviews12 program*.

Based on the results of the limits test shown in the above table, where the calculated value is greater than the upper limit of the critical values at the 5% level, Fcal > Fupper, and therefore we reject the null hypothesis H0 and accept the alternative hypothesis H1, that is, there is a long-term cointegration relationship between the parameters of Sample.

5.3. Results of Estimating Error Correction Model:

The table below shows the results of estimating the short-run cointegration relationship, based on the corresponding probability of the model parameters at the 5% level, as it shows that the error correction coefficients have a negative and significant sign at the 5% level, which indicates a statistically significant positive effect for the previous years for each of (IS , MRH, MSH, IJR) on the current years of NPM, which confirms the short-run equilibrium relationship towards the long-run equilibrium.

Table 4 . Results of estimating long-term and short-term

ARDL Long Run Form and Bounds Test
Dependent Variable: D(LNNPM)
Selected Model: ARDL(2, 2, 3, 3, 2)
Case 2: Restricted Constant and No Trend
Date: 06/10/23 Time: 02:36
Sample: 2013Q1 2023Q1
Included observations: 28

Conditional Error Correction Regression

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.321320	0.761628	5.673792	0.0001
LNNPM(-1)*	-0.562301	0.064271	-8.748839	0.0000
LNIS(-1)	0.873824	0.068429	12.76982	0.0000
LNMRH(-1)	-0.556235	0.048958	-11.36158	0.0000
LNMSH(-1)	-0.113677	0.027146	-4.187549	0.0015
LNIJR(-1)	-0.392766	0.030811	-12.74755	0.0000
D(LNNPM(-1))	-0.273054	0.046981	-5.811954	0.0001
D(LNIS)	-0.376490	0.343016	-1.097588	0.2958
D(LNIS(-1))	-0.664031	0.315495	-2.104724	0.0591
D(LNMRH)	-0.004502	0.012498	-0.360207	0.7255
D(LNMRH(-1))	-0.414996	0.054711	-7.585267	0.0000
D(LNMRH(-2))	-0.260009	0.040059	-6.490575	0.0000
D(LNMSH)	-0.007704	0.012210	-0.630977	0.5409
D(LNMSH(-1))	0.072898	0.017834	4.087532	0.0018
D(LNMSH(-2))	0.051856	0.012022	4.313494	0.0012
D(LNIJR)	9.71E-06	0.012754	0.000761	0.9994
D(LNIJR(-1))	0.343910	0.015014	22.90548	0.0000

* p-value incompatible with t-Bounds distribution.

Levels Equation
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNIS	1.554014	0.236485	6.571297	0.0000
LNMRH	-0.989213	0.053847	-18.37067	0.0000
LNMSH	-0.202164	0.061332	-3.296232	0.0071
LNIJR	-0.698498	0.118925	-5.873426	0.0001
C	7.685066	0.923303	8.323452	0.0000

EC = LNNPM - (1.5540*LNIS -0.9892*LNMRH -0.2022*LNMSH -0.6985*LNIJR + 7.6851)

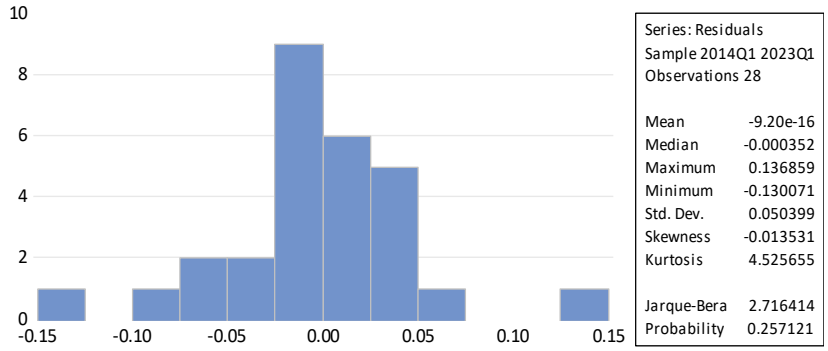
Source : *Outputs of the Eviews12 program*.

5.4. Test the validity of the estimated model

We test the validity of the estimated model through the following statistical tests:

5.4.1. Test of Normal distribution of residuals: Through the table, we find that the value corresponding to the Jarque-Bera test is 2.71 , that is, it is greater than the 5% level of significance, so the residuals of the model follow a normal distribution.

Figure.2. Test of Normal distribution of residuals



Source : *Outputs of the Eviews12 program.*

5.4.2. Heteroscedasticity Test (ARCH):

The table below shows the ARCH test, and according to the table, **F-statistic= 9.351301 > 5%** , so the residuals does not suffer from the problem of variance heterogeneity.

Table 5 . Test of Heteroscedasticity

Heteroskedasticity Test: ARCH

F-statistic	9.351301	Prob. F(1,25)	0.0053
Obs*R-squared	7.350089	Prob. Chi-Square(1)	0.0067

Source : *Outputs of the Eviews12 program.*

5.4.3. Error autocorrelation test:

Using the Breusch-Godfrey Serial Correlation LM test we found that the corresponding probability for this test is greater than the 5% level of significance, **F-statistic 0,864109 >5%** We therefore reject the null hypothesis that there is no autocorrelation of errors.

Table 6 : Test of Error autocorrelation

Breusch-Godfrey Serial Correlation LM Test:
Null hypothesis: No serial correlation at up to 2 lags

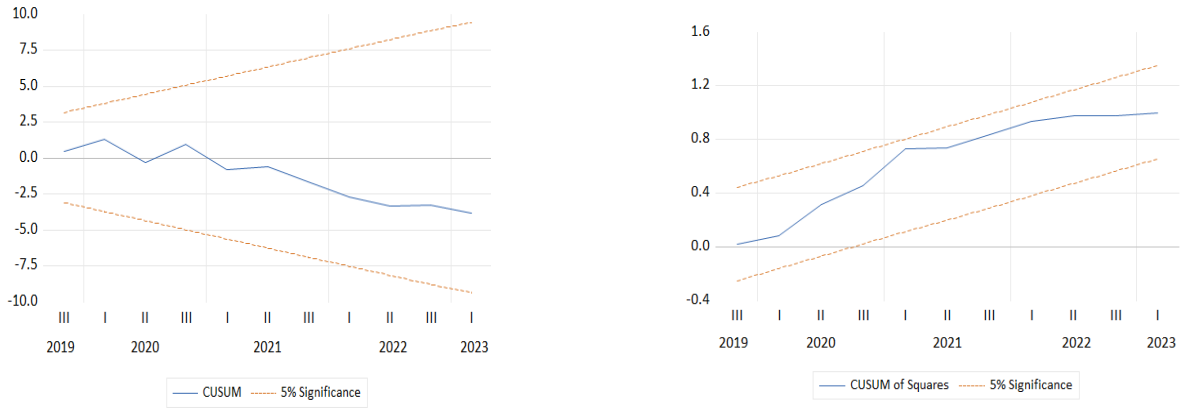
F-statistic	0.864109	Prob. F(2,9)	0.4536
Obs*R-squared	4.510545	Prob. Chi-Square(2)	0.1048

Source : *Outputs of the Eviews12 program.*

5.4.4. Test for structural stability of the model:

In order to test, the structural stability of the estimated model parameters, we use the cumulative sum of residuals (CUSUM) test, where if the graph of the CUSUM statistic falls within the critical limits at the 5% level of significance, then the model is structurally stable, but if the graph moves outside the critical limits, the parameters are unstable, through The results of this test show that the model is stable during most of the study periods, as the graph is within the critical limits at the 5% level of significance Therefore, the parameters of the model are structurally stable.

Figure.3. Test for structural stability of the model



Source : *Outputs of the Eviews12 program*.

6. CONCLUSION

Financial innovation is an essential and important step in the economic sector as a whole, especially the banking sector, as it is an effective way to solve financial problems and transfer the risks of price changes. It is also a great incentive for banks to increase liquidity and profitability, which is the primary goal they seek to meet the desires of customers in light of the work of modern technology that contributes to attracting investors and increasing the bank's competitiveness in the banking market, and thus enhancing banking efficiency.

As a sample, Dubai Islamic Bank was chosen to conduct this study, and quarterly data was used during the period 2013-2023, analyzed through Autoregressive distributed lag model ARDL test to determine the impact of financial innovation on financial performance of the bank, as the ARDL test confirms the existence of long-term co-integration in all cases of the tested models. More specifically, the F statistics for each model tested are greater than the critical value of the upper limit at the 5% level of significance. These study results provide conclusive evidence in favor of The long- and short-term association between financial innovation and financial performance. The study revealed that financial innovation positively affects the financial performance of Dubai Islamic Bank in the short and long term, which is also statistically significant.

The results of the study are in line with (Ashiru, 2023), (habiba kechida, 2021) and (Deresa Goshu Desalegn, 2022), With reference to the estimated parameters of the model, we concluded that there is a statistically significant positive effect between the indicators of financial innovation (IS), (MRH), (MSH), (IJR), and the financial performance index (NPM) in the long and short term, which proves the validity of the hypotheses, this indicates that the introduction of new financial assets and services leads to an increase in the returns and profitability of the bank, which contributes to improving its financial performance, The results also show that there is a direct relationship between financial innovations and financial performance in the long and short term, so that any shock in the financial services provided or at the level of investments made by Dubai Islamic Bank within the framework of encouraging financial innovation leads to a positive development of the bank's financial performance, in addition to the existence of a co-integration relationship between financial innovation and financial performance in the long and short term, and the existence of a statistically significant effect of the previous years of financial innovation on the current years of financial performance.

In view of the results reached, it is clear that financial innovation is an important element in improving the financial performance of the bank. Therefore, governments must make the banking sector more oriented towards financial innovation in order to provide new financial services that attract a larger number of customers and investors, thus achieving the largest possible return. It reflects positively on economic development, because the banking sector is closely linked to the economic sector.

7. Bibliography List :

Kripfganz, S., & Schneider, D. (2018, september). ardl: Estimating autoregressive distributed lag and equilibrium correction models. London Stata Conference. Retrieved from https://ideas.repec.org/s/boc/usug18.html

(2023, mai 05). Retrieved from dubai islamic bank: https://www.dib.ae/ar

Agarwal& S. – Zhang, J. (2020). FinTech, Lending and Payment Innovation. ASIA-PACIFIC JOURNAL OF FINANCIAL STUDIES, 49(3). doi:https://doi.org/10.1111/ajfs.12294

ALAMI YOUSSEF, B. S. (2021). PERFORMANCE FINANCIÈRE BANCAIRE : UN ESSAI D'ANALYSE DANS LE CONTEXTE BANCAIRE MAROCAIN. Revue D'Études en Management et Finance D'Organisation, 6(2).

alekseevich , z. a. (2019). impact of the payroll project on financial performance -Activities of the bank-. russian, finance, money circulation and credit. Retrieved from https://elar.urfu.ru/bitstream/10995/76259/1/m_th_a.a.zagoruiko_2019.pdf

Ashiru, &. B. (2023). Financial innovation and bank financial performance: Evidence from Nigerian deposit money banks. Research in Globalization, 6. doi:https://doi.org/10.1016/j.resglo.2023.100120

Beldi, M., & Gaidi, K. (2021). Evaluating financial performance of some Arab Banks: A static Panel Data Approach (2012-2019). Abaad Iktissadia Review, 11(02).

Benhalima, A. A. (2016). L'INNOVATION FINANCIERE MOTEUR DE COISSANCE DE LA FINANCE ISLAMIQUE. Revue Algérienne d'Economie et de Management, 7(2).

Bennamoun, H. (2016). Innovations financières et stabilité du system financier :le cas des crédits default swap (CDS). Revue des Sciences Humaines, 27(4).

Berrani Mokhtaria, H. I. (2021). The role of corporate governance in improving the banks Financial Performance empirical evidence from listed banks in the Saudi market. Journal of Economic Integration, 9(2).

Błach, J. (2011). FINANCIAL INNOVATIONS AND THEIR ROLE IN THE MODERN FINANCIAL SYSTEM – IDENTIFICATION AND SYSTEMATIZATION OF THE PROBLEM. Financial Internet Quarterly „e-Finanse, 07(03).

Boubeker SAIDI, A. B. (2022). The impact of financial innovation on improving the profitability of islamic banks : Alsalam Bank of Algeria. Journal of Contemporary Economic Studies, 7(1). Retrieved from https://www.asjp.cerist.dz/en/article/196350

Charles O.Manasseh, a. a. (2023). Impact of digital financial innovation on financial system development in Common Market for Eastern and Southern Africa (COMESA) countries. Asian Journal of Economics and Banking. doi:DOI 10.1108/AJEB-04-2022-0041

Chaturvedi, A. (2023). Role of financial innovations towards nurturing financial growth -A study of SBI. International Journal of Research in Engineering & Management (IJREM), 6(1). doi:DOI: 10.13140/RG.2.2.24975.66728

David.A.Dickey&WayneA.Fuller. (1981). Likelihood Ratio Statistics for Autoregressive Time Series with a Unit Root. Econometrica, 49(4). doi:https://doi.org/10.2307/1912517

DE COUSSERGUES, S. &. (2013). Gestion de la banque Du diagnostic à la stratégie. (7, Ed.) france, dunod.

Deresa, G. D. (2022). Greening Bank Financial Innovation for Better Financial Performance. Evidence from Ethiopia. Economics & Working Capital, 1(2).

Druhov, O., Druhova, V., & Pakhnenko, O. (2019). THE INFLUENCE OF FINANCIAL INNOVATIONS ON EU COUNTRIES BANKING SYSTEMS DEVELOPMENT. Marketing and Management of Innovations(1). doi:http://doi.org/10.21272/mmi.2019.3-13

Edwin Kipchirchir, A. K. (2023). Effect of Financial Innovation on Money Demand in the East African Community. Asian Journal of Economics, Business and Accounting, 23(9). doi:DOI: 10.9734/AJEBA/2023/v23i9959

Gowland, d. (1991). Financial Innovation in Theory and Practice. financial markets and institutions(2).

habiba kechida, f. k. (2021). The impact of Islamic financial innovation on the profitability of Islamic banks- Standard study for Dubai Islamic Bank for the period 2005-2019-. Journal of the New Economy, 12(3).

Hizkia, W. C. (2023). UNDERSTANDING THE FACTORS OF FINANCIAL INNOVATION IN INDUSTRIAL REVOLUTION 4.0 ERA. JIMEA | Jurnal Ilmiah MEA (Manajemen, Ekonomi, dan Akuntansi), 7(2). doi:https://doi.org/10.31955/mea.v7i2.2986

Idun, C. A.-A. (2023). Financial Outreach, Financial Innovation and Sustainable Development in Africa. research square. doi: https://doi.org/10.21203/rs.3.rs-2538099/v1

Jennifer, W. E. (2022). Determinant Effect of CASA and NPM on Market Ratio of Banks Listed in IDX. Business and Finance Journal, 7(2). doi: https://doi.org/10.33086/bfj.v7i2.3490

Josée, P. (2018). Gestion financière des PME : théories et pratiques (2 ed.). Québec: université de Québec.

Khatoon, e. a. (2020). The Mediating Effect of Customer Satisfaction on the Relationship Between Electronic Banking Service Quality and Customer Purchase Intention: Evidence From the Qatar Banking Sector. SAGE Open, 1(2). doi:https://doi.org/10.1177/215824402093588

Khraisha, T., & Arthur, K. (2018). Can we have a general theory of financial innovation processes? A conceptual review. springer open, 4(1). doi:https://doi.org/10.1186/s40854-018-0088-y

M. Hashem Pesaran, Y. S. (2001). Bounds Testing Approaches to the Analysis of Level Relationships. Applied Econometrics, 16(3). doi:DOI: 10.1002/jae.616

Murebwa, R. M. (2022). The nexus between technological financial innovation and financial performance of commercial banks in Zimbabwe. Skyline Business Journal, 18. doi:DOI:10.37383/SBJ180104

Narcisa Roxana Moşteanu, A. F. (2020). DIGITAL TECHNOLOGIES' IMPLEMENTATION WITHIN FINANCIAL AND BANKING SYSTEM DURING SOCIO DISTANCING RESTRICTIONS – BACK TO THE FUTURE. International Journal of Advanced Research in Engineering and Technology (IJARET), 11(6). doi:10.34218/IJARET.11.6.2020.027

Phillips.P&Perron.P. (1988). Testing for a Unit Root in Time Series Regression. Biometrika, 75(2). doi:http://dx.doi.org/10.1093/biomet/75.2.335

SEDJAR, N. (2008). PROBLEMATIQUE DU FINANCEMENT: L'INNOVATION FINANCIERE. Revue des Sciences Économiques et de Gestion(8).

SENOUCI Kouider, G. B. (2022). Evaluation de la performance financière des banques commercialesCas de la Banque Nationale d'Algérie. les cahiers du POIDEX, 11(01).

tufano, p. (2003). financial innovation In : constantinides G, Harris M, Stultz R, (eds) handbook of the economics of finance (1 ed.). Amsterdam: elvisier.

Wójcik-Czerniawska, A. (2023). Financial innovations and new tools in finance. Journal of Management and Financial Sciences JMFS(46). doi:https://doi.org/10.33119/JMFS.2022.46.8

Xu, B. S. (2022). Financial innovation system reform in Chinese banking: the impact on bank profitability. AQUACULTURE. doi:https://doi.org/10.1051/e3sconf/202338102035

Ye, H. W.-K.-Y. (2022). Discussion on the Role of Finance in Financial Innovation and Its Application. Frontiers in Business, Economics and Management, 6(3). doi:DOI: https://doi.org/10.54097/fbem.v6i3.3310