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Comparing Efficiency, Asset Quality, and Liquidity between Islamic and Conventional Banks

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Abstract

Purpose *– This research aims to examine efficiency, asset quality, and liquidity by comparing a sample of 52 Islamic banks and 48 conventional banks in 21 countries.*

Methodology *– This study employs an unbalanced panel from 2005 to 2020, the analysis employs the Generalized Method of Moments (GMM).*

Findings *-The findings show that conventional banks have a more stable credit base than Islamic banks. But, in terms of cost relative to revenue, Islamic banks are more efficient. The results indicate that both banks face lower short-term liquidity risk. The study unveils that both Islamic and conventional banks are sensitive to shocks during the recent financial crisis and the COVID-19 pandemic. Despite greater volatility, Islamic banks demonstrate relative financial resilience, which likely may be attributed to their asset-backed financing models and ethical principles.*

Implication *- These insights suggest that policymakers and financial institutions should develop Shariah-compliant liquidity instruments and strengthen regulatory frameworks to enhance the resilience of Islamic banks during economic disruptions.*

Keywords: *Cost efficiency, Asset quality, Liquidity, Financial stability, Banking crisis.*

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1. INTRODUCTION

The Islamic banking system approves its existence year after year. Between 2009 and 2015, the total assets of the Islamic financial services system IFSI grew by 15%. El Qorchi (2005) drew attention to the growing number of financial institutions, with more than 300 institutions in more than 75 countries around the world. In addition, Islamic financial assets grew by some 100 billion dollars in the late 1990. By 2023, the global Islamic financial services industry expanded significantly, with total assets reaching 3.38 trillion dollars, driven by robust performance across Islamic banking, ṣukūk markets, and the Islamic insurance sector (IFSB, 2024).

Imam and Kpodar (2016) analysed the relationship between the development of the Islamic banking system and economic growth. They found that despite its relatively small size compared to the overall size of the financial system, Islamic banks are positively associated with economic growth. Angbazo (1997) indicated that the differences between interest rate risk and liquidity risk are exposed off-balance sheet. According to Abdull-Majid, Saal, and Battisti (2010), there is considerable variation in the relative efficiency of the Islamic economy among different countries.

Theoretically, Islamic finance stands in stark contrast to conventional finance. Adhering to Sharia-compliant finance, Islamic banks are required to operate under principles that include the prohibition of interest payments, profits and losses sharing (LLP), and prohibition of uncertainty of sales and speculation. This framework necessitates asset-backed financing and restricts the use of conventional financial instruments, which could result in increased operational costs and decreased efficiency.

The absence of interest-based instruments limits Islamic banks' access to traditional liquidity management tools, such as interbank markets and central bank facilities. Consequently, Islamic banks may maintain higher liquid asset buffers, which can affect profitability and overall efficiency. Islamic banks often exhibit higher capitalization and better asset quality due to their conservative risk-sharing approach. While this enhances stability, it may also constrain efficiency compared to conventional banks that can leverage riskier, higher-yielding assets. The governance framework in Islamic banking includes Shariah supervisory boards to ensure compliance with Islamic principles. This additional layer of oversight can introduce complexities and affect decision-making processes. It can potentially influence efficiency. Moreover, variations in regulatory environments across countries can lead to differences in how Islamic and conventional banks manage liquidity and operational efficiency. Furthermore, studies have shown that Islamic banks' liquidity is more sensitive to bank-specific variables, while macroeconomic factors have a greater influence on conventional banks. This difference underscores the need for tailored liquidity management strategies and highlights the importance of understanding the unique operational contexts of each banking system. However, the theory does not provide a definitive prediction regarding whether Islamic banks tend to be more liquid or more cost-efficient compared to their conventional counterparts.

This study analyzes the efficiency, asset quality, and liquidity of both Islamic and conventional banks by employing a variety of indicators from a sample that includes 21 countries featuring these types of banks. Consequently, data collection relies on the DATASTREAM database for financial metrics, the World Bank for macroeconomic variables, and the Worldwide Governance Indicators during the period 2005-2020.

2. LITERATURE REVIEW

Over time, several works have presented the principles of interest-free Islamic finance and traced the evolution of Islamic economic thought, providing a theoretical basis for the development of modern Islamic banking, such as Ali and Oseni (2019), Siddiqi (1973), Chapra (1985), Kahf (2003) and Islahi (2014).

Eyih and Bouchetara (2021) examined the impact of banking regulations on the financial stability of Islamic and conventional banks in Mauritania. Their findings reveal that Islamic banks exhibit greater stability, whereas conventional banks are larger and more profitable. A notable difference was also observed in the Merton distance between the two types of banks. Similarly, Beck, Demirgüç-Kunt, and Merrouche (2013), using data from 22 countries between 1995 and 2009, found that Islamic banks, while less profitable, demonstrate higher asset quality and stronger intermediation. During times of crisis, they also tend to have stronger capitalization, better asset quality, and lower disintermediation.

In addition, Mirza, Rahat, and Reddy (2015) compared the business model, efficiency, asset quality, and stability of Islamic and conventional banks. They found that Islamic banks have higher asset quality and greater financial stability than their conventional counterparts. According to Bitar, Pukthuanthong, and Walker (2019), Islamic banks tend to be less efficient than conventional banks because of stricter capital and liquidity management standards stemming from Shariah compliance requirements.

Bader and all (2008) studied the cost, revenue, and profit of efficiency by comparing a sample of 43 Islamic and 37 conventional banks over the period between 1990 and 2005. They aimed to evaluate the average efficiency of overtime of these banks according to their size, age, and region using static and dynamic panels. The results suggest that there is no significant difference in efficiency between Islamic and conventional banks. Salman (2013) analysed the liquidity position and risk management practices of Islamic financial institutions, highlighting the need to develop new instruments and infrastructures for liquidity risk management. In contrast, several scholars, including Visser (2009), Hamza and Saadaoui (2013), and Weil (2013), argue in favour of engaging in higher-risk investment opportunities. Dolgun, Mirakhor, and Ng (2019) proposed a method for calibrating the liquidity coverage ratio specifically for Islamic banks, considering the specificities of Sharia-compliant financial instruments. In the context of Islamic finance, Aassouli, Ebrahim, and Basiruddin (2018) explored the role of Unrestricted General Investment Accounts (UGIT) in promoting liquidity management and sustainable development. Ziky, Rafia, and El Hamidi (2024) explored the potential of Muḍarabah as a financing and liquidity management tool for Islamic banks in Morocco, highlighting expectations and obstacles.

El Gamal and Inanoglu (2003) reviewed 32 studies on banking efficiency from 1985 to 2005, focusing on methodologies like Data Envelopment Analysis (DEA) and Stochastic Frontier Analysis (SFA). While DEA was used to assess technical efficiency and SFA for cost efficiency, the authors concluded that no method was superior overall. Imam and Kpoodar (2016) investigated the link between Islamic banking development and economic growth using data from 52 countries between 1990 and 2010. Their findings indicated a positive correlation, despite Islamic banks' relatively small size within the broader financial system.

Othman and Mersni (2014) conducted a study in the Middle East region, they showed that there was no difference between Islamic and conventional banks, according to the provision variable for loan losses. In contrast, Beck, Demirgüç-Kunt, and Merrouche (2013) have shown that the commercial models of Islamic banks differ from those of conventional banks only in terms of the best quality of assets. Thus, Saeed and Izzeldin (2014) evaluated the efficiency of the default risk relationship between Islamic banks and their conventional counterparts in the countries of the Gulf Cooperation Council. They showed that the relationship is negatively linked.

Karim, Naeem, and Abaji (2022) examined Islamic fintech's role in Pakistan during COVID-19, and highlighted the strong stakeholder support for its adoption. The study shows that integrating fintech can help Islamic banks align with social objectives like poverty reduction and sustainable development, beyond mere profit-making.

Viverita, Bustaman, and Danarsari (2023) examined the liquidity creation of 85 Indonesian banks during the COVID-19 pandemic and found that Islamic banks created more liquidity, especially excluding off-balance sheet items, while government-owned banks led overall, reflecting effective stimulus policies. Chapra (1982) emphasized the integration of moral values and justice within economic systems, and criticized conventional finance for its ethical detachment. He advocated for an Islamic economic model that promotes equitable wealth distribution and social welfare, rather than simply pursuing profit maximization.

Siddiqi (1982) pioneered the concept of interest-free banking that was introduced through models based on PLS, such as Mudarabah and Musharakah. These models, which align financial transactions with real economic activities aim to foster risk-sharing and discourage speculative behavior.

Iqbal and Mirakhor (2011) advocated for a financial system rooted in risk-sharing mechanisms, contrasting it with conventional systems that often rely on risk transfer through debt-based instruments. They argued that Islamic finance, through instruments like zakah, Qard al-hasan, and profit-sharing contracts, can enhance financial inclusion and promote equitable economic growth.

3. METHODOLOGY

We use data from DataStream, the most comprehensive database available on the banking market, which allows us to create and compare the indicators of stability of both Islamic and conventional banks.

Therefore, to adequately represent both types of banks, our sample period from 2005 to 2020 includes 100 banks across 21 countries, of which 52 are Islamic banks. Our sample covers banks in the following Countries: Saudi Arabia, Bahrain, Kuwait, Qatar, UAE, United Kingdom, Turkey, Tunisia, Egypt, Sudan, Algeria, Malaysia, Indonesia, Pakistan, Jordan, Palestine, Iraq, Syria, Bangladesh, Lebanon, and Iran. We rely on an unbalanced panel dataset, where banks must be operational for at least six years.

To test the efficiency, liquidity, and asset quality of Islamic banks and conventional banks, we rely on the following regression:

$$(V_{i,j,t}) = \alpha + \varphi 1 V_{i,j,t-1} + \varphi 2 A_{j,t-1} + \varphi 3 E_{i,j,t} + \varphi 4 D_{i,j,t} + \varphi 5 M_{i,j,t} + \varepsilon_{i,j,t} \quad (1)$$

In this equation, the dependent variable is the V score Vijt of the bank i of country j at time t. Vijt is one of our measures of efficiency, asset quality or liquidity. Vijt-1 reveals the lagged one-year variable of one of our measures. Thus, Aijt, Eijt, Dijt, and Mijt respectively represent the independent variables total assets, non-earning assets, income diversity, macroeconomic and institutional variables (GDP growth, inflation INF, D-crises, D-Pandemic and Governance GOV).

Thus, we measure efficiency by three independent variables, the overhead ratio, the cost to income ratio, and the loan loss reserve ratio. Next, we assess the quality of assets by two dependent variables, the ratio of loan loss provisions and the ratio of non-performing loans. Finally, liquidity is measured by the loan to deposit ratio and the loan to total asset ratio. We use as a method of estimation, the GMM system in first steps introduced by Arellano and Bond (1991), and developed and corrected by Arellano and Bover (1995) and Blundell and Bond (1998).

When explanatory variables are endogenous or predetermined, traditional estimators like fixed or random effects may yield inconsistent results. System GMM mitigates this issue by employing appropriate instruments, enhancing the reliability of the estimates. In summary, the adoption of System GMM in this study is motivated by its ability to provide consistent and efficient estimations in dynamic panel data models, while controlling for endogeneity and unobserved fixed effects issues. This methodological approach is particularly suited to the structure of the sample under study and the specificities of our comparative analysis between Islamic and conventional banks. Table 1 describes the individual variables used in the paper.

Table 1: Description of variables

Variables	Definition	Measure
Dependent variables		
CTI	cost to income	= Cost / income
Over	Overhead	= Total operating costs / total assets
LLR	Loan loss reserve	= ∑ LLP, Low LLR means stability of banks' credit base
LLP	Loan loss provisions	= Total loan loss provisions/ total loans.
NPL	non-performing loans	= Total doubtful debts / total loans, High NPL means poor loan quality.
LDR	Loan to deposit	= Loan / deposit, High LDR ratio means a low liquidity reserve.
LTA	Loan to total asset	= Loan / total asset, High LTA ratio means lack of short-term liquidity.
Independents variables		
TA	Total assets	=Total assets of a bank (In U.S. dollars billion).
NEA	Non-earning assets	=Non-earning assets / total assets
ID	Income Diversity	= 1- ((Net interest income − Other operating income)/ Total operating income); is the ∑ of the positive and negative incomes related to the arrangements.
GDPG	Gross domestic product	GDP Growth, Growth rate of nominal GDP, adjusted for inflation

Variables	Definition	Measure
INF	Inflation	Year-on-year change of the CPI index (percent).
GOV	Governance	Average of the six governance measures; voice & accountability, political stability, government effectiveness, regulatory quality, rule of law and control of corruption, over the 16 years from 2005 to 2020 into one single index per country.
D-Crises	Financial crisis years (2008 and 2009)	A dummy variable equal 1 in subprime crisis
D-Pandemic	Covid-19 pandemic (Starting from March 2020)	A dummy variable equal to 1 during the pandemic,

Note: Description of dependent and independent variables

A declining overhead cost ratio is identified as the increasing of the productivity of banking services, developing business and preserving financial means, hence better meaning of efficiency. A low loan-deposit ratio means that banks are more able to cover all unforeseen fund needs and have less liquidity risk. A loan classified as non-performing, when, after a specified period, borrowers do not repay, hence a high non-performing loans ratio means poor loan quality. Accordingly, we are trying to reinforce the evaluation of efficiency, asset quality and liquidity, by comparing the ratios of Over, LDR and NPL in Islamic and conventional banks.

The results in Figure 1 show that the evolution of the overhead ratio of conventional banks between 2006 and 2018 is almost stable. While the evolution of their Islamic counterparts is more volatile, it started to decline from 2007 until 2010. Similarly, Table 2 shows that Islamic banks have lower overhead costs of 0.461% and 0.494% in 2009 and 2010 respectively, compared to their conventional counterparts. Nevertheless, on average, conventional banks have the lowest overhead ratio. Yet better meaning of cost efficiency compared to their Islamic counterparts.

Table 2: Evolution of the OVER variable by year for Islamic and conventional banks

OVER/Y	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	MEAN
BI	1,916	2,057	1,833	1,77	1,246	1,221	2,186	2,523	2,558	2,758	2,72	2,77	2,8	2,89	3,12	3,21	2,007
BC	1,374	1,760	1,674	1,720	1,707	1,715	1,739	1,715	1,768	1,706	1,692	1,71	1,75	1,76	2,01	2,14	1,688

Source: Authors' calculations based on DataStream data.

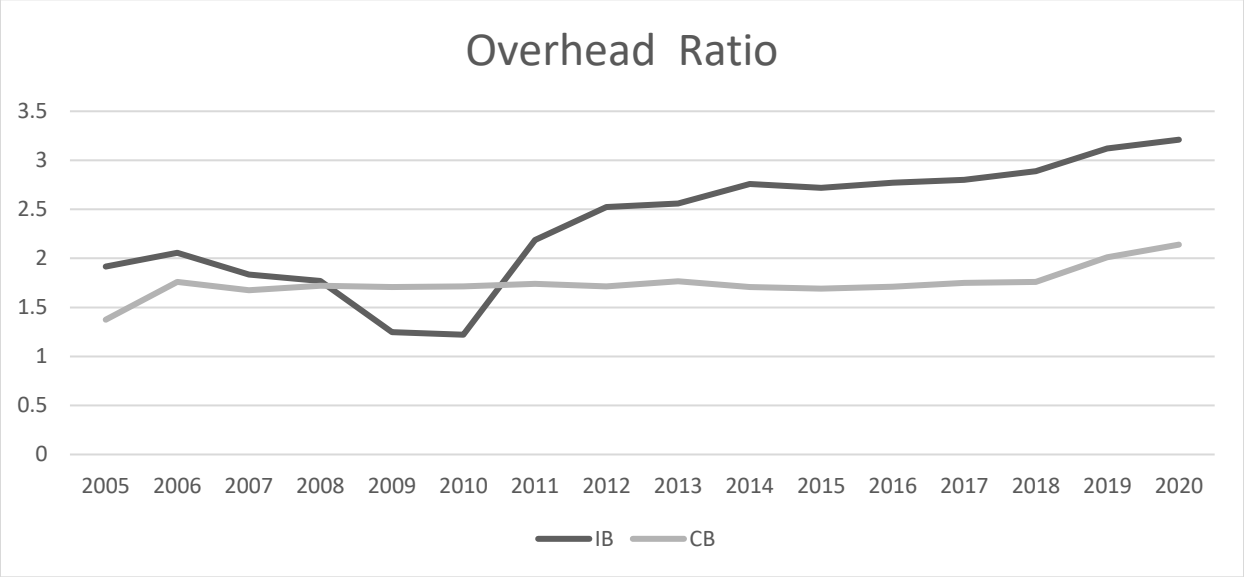

Figure 1: Graphical representation
Source: Authors' calculations based on DataStream data.

Table 3 and Figure 2 represent the evolution of the LDR liquidity risk ratio. The results show that the loan-deposit ratio in conventional banks is almost stable. While it is more volatile in Islamic banks. This phenomenon could mean that liquidity management in Islamic banks follows market demand. However, in 2011, this ratio was very low, which implies that the bank may not benefit as much as it could admit gains. Thus, on average, the LDR ratio of conventional banks is higher than that of their Islamic counterparts. This means that Islamic banks would be better able to cover unforeseen funding needs. Therefore, they have less liquidity risk.

Table 3: Evolution of the LDR ratio by year for Islamic and conventional banks

LDR/Y	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	MEAN
BI	67,95	62,47	48,35	57,16	50,87	46,15	39,83	47,68	69,29	64,65	65,57	72,57	66,57	72,67	73,66	76,97	61,38
BC	70,07	72,91	70,13	75,66	76,57	75,84	75,49	75,12	78,11	78,18	79,57	78,91	73,17	74,67	77,5	82,97	75,94

Source: Authors' calculations based on DataStream data.

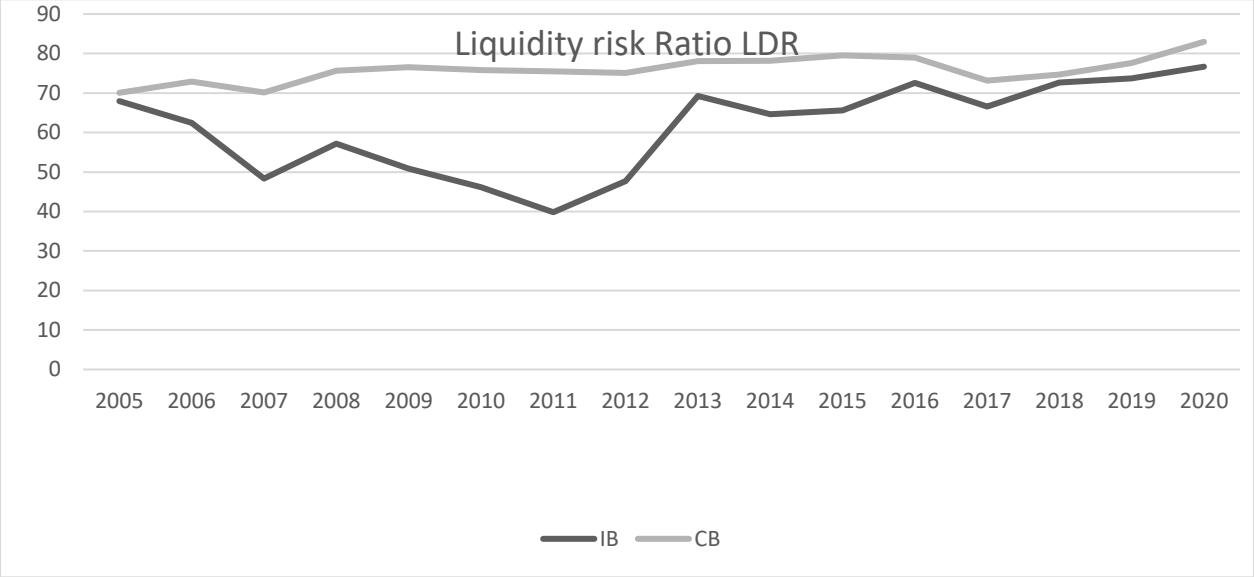

Figure 2: Graphical representation
Source: Authors' calculations based on DataStream data.

The results in Table 4 show that conventional banks have 0.612% less non-performing loans compared to Islamic banks. Similarly, the non-performing loans ratio increased for Islamic and conventional banks in 2008 during the periods of the subprime crisis. However, the year 2011 represents the peak of this ratio for the Islamic banks, on the other hand it has decreased for their conventional counterparts. From 2012 until the end of the sample, the ratio for the two types of banks will be closer, especially in 2017. This could mean that Islamic banks have worked more on the evolution of loan quality.

Table 4: Evolution of the NPL variable by year for Islamic and conventional banks

NPL/Y	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	MEAN
BI	3,37	3,51	3,560	3,896	4,145	5,378	6,018	5,456	5,315	4,847	4,85	4,85	4,92	4,936	5,129	5,456	4,550
BC	3,82	3,11	3,128	3,664	4,178	4,375	4,090	4,414	4,409	4,186	4,45	4,59	4,85	4,796	4,996	5,1556	3,938

Source: Authors' calculations based on DataStream data.

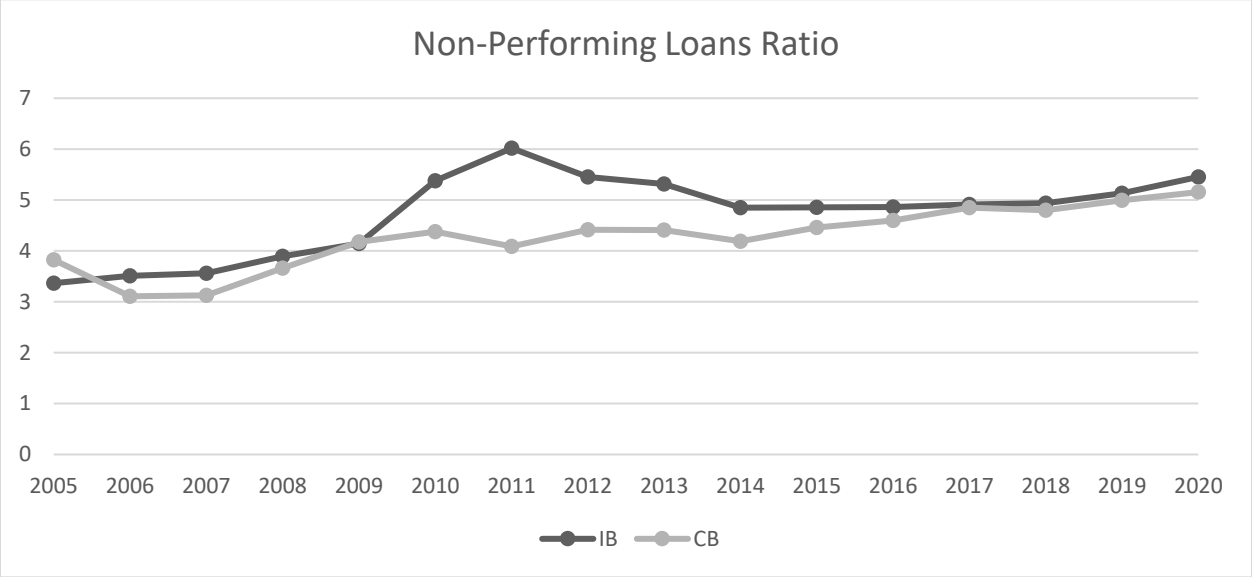

Figure 3: Graphical representation
Source: Authors' calculations based on DataStream data.

Finally, it is noted that according to the overhead cost ratio, Islamic banks generate more overhead costs, while conventional banks generate more cost efficiencies.

Thus, the loan deposit ratio shows that Islamic banks are less exposed to liquidity risk than their conventional counterparts. On average and throughout the period of studying samples, Islamic banks are more liquid. These results could be due to the fragility of the capital structure, and to the lack of the developed interbank Islamic market. Likewise, non-performing loans ratio indicates that according to the average, Islamic banks have more non-performing loans, which demonstrates the modest quality of assets of Islamic banks compared to conventional banks. However, we note that the post-crisis period represents the period when the NPL is higher for both types of banks. Thus, all these findings, show that these last two types have been affected by the crisis, following the increase and the ranking of many loans as non-performing. At this level, it is clear that the quality of loans in Islamic banks has improved since 2012. However, focusing on the year 2020 it is noted that there is an increase in the ratio, which may be explained by the effect of the covid19 pandemic.

4. RESULTS AND DISCUSSION

Results related to descriptive statistics are presented in tables 5, while the empirical estimation is presented in table 6, 7 and 8.

4.1 Descriptive statistics

Table 5 presents descriptive statistics of both conventional and Islamic banks. The statistics of whole variables are reported: present Observations are the first to be presented, mean, standard deviation, minimum and maximum as well as the average value for conventional and Islamic banks.

Table 5. Descriptive statistics

	Islamic banks					Conventional banks				
Variable	Obs	Ave	Sta Dev	Min	Max	Obs	Ave	Sta Dev	Min	Max
Over	772	2.312	2.312	0.1	6	744	1.930	1.430	0	9.531
LLR	769	6.805	6.805	0	199	744	4.668	4.944	0	40.32
CTI	763	57.138	57.138	14.3	221.44	744	43.834	24.656	1,62	317,64
LLP	766	1.016	1.016	-4.15	6.4	744	1.138	1.003	-0.75	5.9
NPL	761	5.093	6.142	0,2	43,98	744	4.633	5.305	0,23	49.5
LDR	772	1.610	3.745	0	43.684	744	0.861	0.686	0.007	9.359
LTA	772	0.592	0.981	0	26.506	744	0.704	1.093	0.002	17.912
TA	770	15.026	1.675	10.140	19	744	16.490	1.998	11.416	22.051
NEA	772	20.418	18.573	1,934	105,641	744	15.317	15.713	1,175	100
ID	766	0.650	0.294	0.005	1.8	744	0.608	0.243	0	1.32
D-Crises	772	0.168	0.374	0	1	744	0.178	0.382	0	1
INF	744	7.234	9.005	-4,863	63.293	728	4.979	7.108	-10.067	63.293
GDP	742	4.004	3.449	-7,445	26,170	728	4.089	4.013	-7,445	26,170
GOV	756	-0.078	1.090	-2.55	2.510	728	0.218	1.114	-2.55	2.510
D-Pandemic	772	0.067	0.251	0	1	744	0.066	0.248	0	1

Note: Statistical properties of variables (100 banks, 2005:2020).

A preliminary review of these three measures, which assess bank efficiency, asset quality and liquidity, suggests a high variability in the sample.

Table 5 presents the descriptive statistics of different variables that help to compare Islamic and conventional banks. First, three indicators are used to compare the efficiency of conventional and Islamic banks. Overhead cost is our primary measure of bank efficiency. It is calculated by dividing the total operating costs by total assets. Overhead cost in Islamic bank varies from 0.1% to 6.0% in the sample relied on, with an average of 2.312%. Similarly, this ratio is less than 4.5% in conventional banks, with an average 1.930%. We also consider the importance of loan loss reserve, which ranges from zero to 199% in the sample of Islamic bank, with an average of 6.805%. Thus, this ratio varies from zero to 40.32% in conventional banks, with an average of 4.668%. As another indicator of efficiency, the cost-income ratio is also used. It is computed by dividing the overhead costs by gross revenues, where a higher ratio indicating lower levels of cost efficiency. This indicator ranges from 14.3% to 221.44%, with an average of 57.138% in Islamic bank and of 43.834% in conventional banks. Islamic banks have on average higher overhead costs, higher loan loss reserve, and higher cost-income ratios than conventional banks, but marginally higher overhead costs ratios. This result can be explained by several distinctive factors. Firstly, the complexity of Islamic financial products, such as Mudarabah and Musharakah, necessitates thorough project evaluations and continuous monitoring, leading to increased administrative expenses. Secondly, adherence to Shariah principles requires additional processes, including oversight by Shariah supervisory boards, which adds layers of governance and associated costs. Thirdly, Islamic banks face limitations in accessing conventional interbank markets due to the prohibition of interest, compelling them to maintain higher liquidity reserves, which can reduce profitability. These factors collectively contribute to the unique cost structures and financial behaviours observed in Islamic banking institutions.

Second, two indicators of asset quality are studied. Some measures are used at this level as loan loss provisions, and non-performing loans, all scaled by gross loans. The loan loss provisions in Islamic bank, range from -4.15% to 6.4%, with a mean of 1.016%. However, in conventional banks, this ratio varies from -0.75% to 5.9%, with an average that reached more than 1.

Non-performing loans in Islamic and conventional banks, range respectively from 0.2 to 43.98%, and from 0.23 to 49.5% with an average of 5.093% and 4.633%. Conventional banks have lower non-performing loans, but marginally higher loan loss provisions. Islamic banking contracts, such as Mudarabah and Musharakah, involve profit and loss sharing between the bank and the client. In the event of losses, the bank may bear a portion, increasing its exposure to default risks. Additionally, Islamic banks cannot impose interest-based late payment penalties due to Shariah prohibitions on riba. This limitation may reduce borrowers' incentives to repay on time, potentially leading to higher default rates.

Third, two other indicators of bank liquidity are used, which are the ratio of loans to deposit and the ratio of Loans to total asset. The first liquidity ratio, loans to deposit varies in Islamic banks from 0% to almost 43.684%, with a mean of 1.610%. Whereas, in conventional banks, this ratio varies from 0.007% to 9.359% with an average of 0.861%. The second liquidity ratio in Islamic and conventional banks, range respectively from 0 to 26.506%, and from 0.002 to 17.912% with an average of 0.592% and 0.704%. Islamic banks face challenges in liquidity management primarily due to the absence of active secondary markets for Shariah-compliant financial instruments. This lack restricts their ability to trade assets for liquidity purposes. Moreover, regulatory constraints may limit the use of certain financial instruments, further narrowing liquidity management options for Islamic banks.

Islamic banks operate under strict ethical guidelines derived from Shariah law, which prohibits investments in sectors like alcohol, gambling, and interest-based financial services. This ethical framework limits their investment opportunities, potentially affecting profitability. Furthermore, the emphasis on social responsibility may lead Islamic banks to prioritize socially beneficial projects over purely profit-driven ventures. These factors contribute to the distinct financial behaviours observed in Islamic banking institutions.

4.2 Estimation results

In this research, the studied sample included annual data for both Islamic and conventional banks in 21 countries, using an unbalanced panel between 2005 and 2020. The data were collected from the DataStream. The sample relied on included 52 Islamic and 48 conventional banks. We use the multiple linear regression analysis with a static panel data estimation. The analysis of estimation results is achieved by the generalized method of moments in the system and first stage (GMM).

Thus, to ensure the validity of the model, we adopt the Sargan test of over-identification restrictions. Where we notice that all the specifications are valid, since the value of p for the test of the restrictions identified is quite high, this means that the null hypotheses of correlation between the terms of error (Sargan (1958) statistic) and the correlation of first order (Arellano-brover (1995)/Blundell- and Bond (1998) statistics) is rejected.

Table 6 shows the results of the empirical analysis of the evaluation of efficiency measured by the three ratios, overheads OVER, loan loss reserves LLR, and cost to income CTI in Islamic and conventional banks.

Table 6: Comparing Islamic and conventional banks- controlling for bank efficiency

	Cost efficiency					
	Islamic banks			Conventional banks		
	Over	LLR	CTI	Over	LLR	CTI
Var L-1	0,590***	0,421***	0,374***	0,626***	0,627***	0,458***
TA	0.026	-2,160	1.834	-0,212***	0.111	3.402***
NEA	0.001	-0,065	0,125	-0,003	0.014	-0,033
ID	0.217*	-1.830	-9.849***	-0,028	-1.387***	8.570**
D-Crises	0,118**	-2.953**	3.671***	-0,036	0.150	0,534
Inf	-0.009	-0.009	-0,063	0,001	0.006	0,024
PIB	-0.002	0.032	0.073	-0,018**	-0,030**	-0,133
Gov	-0.179	-2.367	0.131	-0,084	0.133	-0.453
D-Pandemic	0.248***	6.102***	3.984**	-0.111	0.343**	2.665**
Constant	2,099**	39.526*	11.183	4.411***	0.703	-36.739***
Sargan T	54,843	128,337***	98,812***	87,6***	271,2***	200,2***
Nber obsr	621	617	612	634	629	634
Nber Instru	51	51	51	47	47	47

Note: * Significance at the 10% level.
** Significance at the 5% level.
*** Significance at the 1% level.

Thus, table 7 presents a comparative study between both types of Islamic and conventional banks, allowing to assess the asset quality measured by two ratios, the loans loss provision LLP and the non-performing loans NPL.

Table 7: Comparing Islamic and conventional banks- controlling for bank Asset quality

	Asset quality			
	Islamic banks		Conventional banks	
	LLP	NPL	LLP	NPL
Var L-1	0,493***	0,476***	0,608***	0,546***
TA	0,170**	0.277	0,028	0.050
NEA	-0,007	0,035**	-0,006	0,033
ID	0,420**	-0,372	0,464**	-0,860
D-Crises	0,297***	-0,970***	0,142***	0,536**
Inf	-0.004	0,007	0,007	0.005
PIB	0,008	-0,078**	-0,043***	-0,095***
Gov	-0.165	0.488	-0,124**	-0.013
D-Pandemic	0.287**	0.710	0.148**	0.362
Constant	-2.222*	-1.401	-0,032	1.935
Sargan T	85,833***	67,418**	54,3	166,1***
Nber obsr	615	610	634	634
Nber Instru	51	51	47	47

Note: * Significance at the 10% level.
** Significance at the 5% level.
*** Significance at the 1% level.

Finally, table 8 presents a comparative study between both types of Islamic and conventional banks, allowing us to assess the liquidity measured by the two ratios, loans to total assets LTA, and loans to deposit LDR.

Table 8: Comparing Islamic and conventional banks- controlling for bank Liquidity

Liquidity				
Islamic banks				
	LDR		LDR	
Var L-1	0.514***	Var L-1	0.514***	Var L-1
TA	-0.153	TA	-0.153	TA
NEA	0.097***	NEA	0.097***	NEA
ID	0.059	ID	0.059	ID
D-Crises	0.777***	D-Crises	0.777***	D-Crises
Inf	0.027*	Inf	0.027*	Inf
PIB	0.031	PIB	0.031	PIB
Gov	0.275	Gov	0.275	Gov
D-Pandemic	0.072	D-Pandemic	0.072	D-Pandemic
Constant	0.681	Constant	0.681	Constant
Sargan T		Sargan T		Sargan T
Nber obsr	621	Nber obsr	621	Nber obsr
Nber Instru	51	Nber Instru	51	Nber Instru

Note: * Significance at the 10% level.
** Significance at the 5% level.
*** Significance at the 1% level.

The estimation results are reported in table 6,7 and 8. The estimation results for the banks-level and country-specific control variables provide additional insights. The results of all lagged variables are positively significant in all specifications for both banks, except the LDR ratio, which in turn means that the result of each variable depends on the value of the last year.

The total assets allow us to check the size of the bank. Big banks seem to be more efficient due to economies of scale, unlike some theoretical literatures, the relationship between size and stability is ambiguous (Beck, Demirguc-kunt, and Levine, 2006 and Beck 2008). The bank size in Islamic banks shows a significantly positive correlation with LLP. In other words, the larger banks have higher percentage of loan loss provisions. The results in table (8) show a positive correlation of conventional banks size on the liquidity. Bank size shows a significant positive impact on LDR ratio in all specifications. But the LTA ratio is significantly negative, suggesting that large banks may be very cautious about short-term liquidity.

In terms of NEA ratio, the coefficient estimates document a statistically significant but negative relationship with LTA ratio for Islamic and conventional banks. This may be explained by the short-term liquidity policies of large banks. In other words, this negative relationship may be influenced by the distinct asset structures inherent in Islamic banking. Islamic banks often engage in asset-backed financing modes, such as Murabaha and Ijarah, which can lead to higher proportions of tangible assets on their balance sheets. These financing methods, while compliant with Shariah principles, may impact the liquidity and asset utilization differently compared to conventional banks, thereby affecting the NEA and LTA dynamics.

In respect of ID ratio, the coefficient estimates document a statistically significant positive relationship with the LLP ratio in both banks. Which can be explained by the variability in income distribution that contributes significantly to reducing the risk of overall loan losses .This result suggests that diversified income streams may contribute to better risk absorption capabilities. In Islamic banking, the emphasis on PLS contracts, such as Mudarabah and Musharakah, fosters a partnership approach between banks and clients. This collaborative risk-sharing mechanism can enhance the bank's resilience to credit losses, as profits and losses are distributed according to pre-agreed ratios, aligning the interests of all parties involved.

Regarding the crisis effect in Islamic banks, the dummy variable is positively significant at the 5% level for LTA and OVER ratios, and in all specifications for LDR, LLP and CTI ratios. In this way, variables are highly correlated with crisis dummy. Similarly, the crisis dummy positively correlates with NPL and LDR ratios of conventional banks. The heightened sensitivity of Islamic banks to crisis periods may stem from their unique risk-sharing frameworks and the absence of conventional interbank liquidity instruments. Islamic banks' reliance on Shariah-compliant contracts limits their access to traditional liquidity support mechanisms, potentially exacerbating the impact of financial crises. Moreover, the ethical constraints and prohibition of interest-based transactions restrict the range of financial instruments available for risk mitigation, necessitating alternative strategies to manage liquidity and credit risks during turbulent periods. Mirzet, Obiyathulla Ismath, and Edib (2024) pointed out that diversification had positive effects before and after the crisis period, but it did not provide a safety net during the crisis.

For more precision, it is worth including the macroeconomic variables, GDP growth and INF rate. The GDP growth explains the change in the economic cycle. Our results on the impact of GDP growth on the asset quality and cost efficiency ratios of Conventional banks are negatively correlated. Salas and Suarina (2002), Rajan and Dhal (2003), Fofack (2005), and Jimenez and Saurina (2006) explained the negative sign between real GDP growth and NPL that a high real GDP growth rate expresses income growth, which minimizes the bad debt and non-performing loans, and maximizes the possibility that borrowers will repay their loans. Likewise, the coefficient estimates of GDP growth document a statistically significant positive relationship with the LTA ratio in both banks. In terms of INF rate ratio, the coefficient estimates document a statistically significant positive relationship with LDR ratio for Islamic banks at the level of 10%. Furthermore, the coefficient estimates document a statistically significant but has a negative relationship with LLP ratio for conventional banks at the level of 10%.

The differential impact of GDP growth and inflation on Islamic and conventional banks highlight the influence of fundamental financial principles. Islamic banks' operations, grounded in asset-backed and risk-sharing contracts, may render them more sensitive to real economic activities, as their profitability is closely tied to the performance of the financed assets. Conversely, conventional banks, which often engage in interest-based lending, might exhibit different responsiveness to macroeconomic fluctuations, reflecting the divergent financial intermediation models.

In an attempt to study the impact of the Covid-19 pandemic on Islamic and conventional banking we used the D-PANDEMIC variable. The coefficient estimates document a statistically significant positive relationship with LLP, LLR, and CTI ratios in both banks. Molyneux, Thornton, and Lloyd-Williams (1996) pointed out that it is possible to use the LLR ratio as a measure of loan quality, a lower ratio, a better sign of loan quality and vice versa. Furthermore, this result highlights the systemic challenges posed by unprecedented global disruptions. For Islamic banks, the moral responsibility to support affected customers and the restrictions on restructuring debt contracts to comply with Sharia law may have exacerbated the impact of the pandemic. These factors could have influenced provisioning practices and operational efficiencies, as reflected in the observed changes in LLP, LLR, and CTI ratios.

5. CONCLUSION

This paper empirically analyses the differences in cost efficiency, asset quality, and liquidity of Islamic and conventional banks across a sample of countries, including both types of institutions.

The findings of this paper could not indicate significant differences between Islamic and conventional banks. Lagged variables suggest that both banks achieve a correlation in terms of efficiency, asset quality and liquidity. Likewise, the negative coefficient of TA shows that large banks have better short-term liquidity and greater ability to control operating costs. But this is not the case of cost pressure versus profits CTI.

We also observe the correlation of GDP with LTA ratio in determining a bank's liquidity. Thus, under favourable economic conditions, both banks are short-term liquidity risk takers. In other words, the favourable economic situation encourages banks to take excessive risks, which will lead to insufficient short-term liquidity.

Our results indicate that Income diversity have a significant effect on the asset quality of both banks. Non-earning assets have a significant but negative impact on the asset quality of Islamic banks.

Lastly, this study highlights that the significance of the D-Crises and D-Pandemic variables reflects how banks' efficiency and stability are affected during periods of crisis. Islamic banks, despite greater volatility, demonstrate relative financial resilience, likely due to their asset-backed financing models and ethical principles. However, challenges such as the lack of short-term liquidity instruments and regulatory constraints can limit their responsiveness to economic shocks. Banks created less liquidity during the pandemic (Viverita, Bustaman, and Danarsari, 2023).

Although the study offers important insights into the comparative financial stability of Islamic and conventional banks, it does not specifically address the behavior of Islamic financial products. Principles like profit-and-loss sharing and asset-backing, fundamental to Islamic finance, can critically shape banks' risk profiles and liquidity behavior. The absence of a detailed assessment of products like Mudarabah and Murabaha, as well as the variations in Shariah interpretations, limits the depth of this analysis.

Despite its contributions, the study faces limitations such as potential heterogeneity in variance from using an unbalanced panel. Although random attrition mitigates major biases, future studies could use balanced panels for improved robustness. Further research should explore the performance of the individual Islamic financial products and their impact on financial resilience. Additionally, a focus on Shariah governance frameworks would provide richer insights into product risk management. Policymakers and practitioners are also encouraged to develop Shariah-compliant liquidity instruments to strengthen Islamic banks' resilience against economic shocks.

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