Comparative and Demonstrative Study Between the Liquidity of Islamic and Conventional Banks in a Financial Stability Period: Which Type of Banks Is the Most Liquid?

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Abstract

Due to the failure of several conventional banks and the closure of some Islamic banks around the world, both types are exposed to the risk of liquidation and bankruptcy. Theoretically, knowledge production has until recently been the monopoly of academic research (Vinck, 2000). The choice of the most liquid type of bank and which maximizes the liquidity of its customers is a problem to be solved. Since most of the previous comparative studies that have dealt with banking liquidity are unconfirmed, our research interest is to overcome these constraints to provide a more optimistic answer. Two samples were removed from two reference populations over the period (2010-2018). Samples were selected from 16 countries. Basic populations consist of all existing conventional and Islamic banks in the selected countries. The choice of banks is limited to countries whose banking systems incorporate both types. Subsequently, the list for each banks' type was reduced based on qualitative and quantitative filtering criteria. Therefore, each conventional bank has its closest Islamic equivalence in terms of capital and size taken from the same country. This restriction reduced the sample size to 63 large banks each. All selected banks were listed in different stock exchanges around the world. Empirical results showed that Islamic banks are more liquid than conventional banks during a financial stable period.

Keywords: conventional banks, Islamic banks, liquidity, comparative study, financial stability period

JEL classification: F33, G20, G21, G24, G30

1. Introduction

The assessment of bank liquidity is a very important topic for all stakeholders: depositors, bank managers, investors, and regulators. On the financial market, a bank's performance provides a signal to the owners of capital, depositors and investors to operate or withdraw their funds from the bank. Similarly, the assessment provides a signal for CEOs to improve their deposit and lending services to improve their funding capabilities. Regulators are also interested in knowing the degree of compliance as well as the horizon of its regulations.

Although in most cases the results of previous studies on the comparison between the liquidity of Islamic and conventional banks are mixed or contradictory, through our study, we sought to answer definitively the following question: What is the type of banks, really, the most liquid in this comparative framework? This information makes it easier for economic agents and decision-makers to detect the best choices of financial backers in the event of savings and financing when investing in a world of financial competitiveness. In addition, our results will help policymakers set better performance targets and enable bank managers to allocate capital more effectively to communicate a clear and definitive answer. Our study provided an overview of the fragility, vulnerability, and instability of conventional and Islamic banking systems, and makes a comparison between the two models. This research work makes it possible to achieve the following objective: establish a radical paradigm of choice between the banking liquidities that allows us to review its degree of validity and develop more precise, decisive and well-argued conclusions. Moreover, as the first theoretical contribution to the financial literature, our study answered explicitly to the proposed gap. The second

contribution of this article concerns the conditional methodological approach in the choice of the banks' observations and by respecting a severe procedure of application of the statistical tests. Our third contribution is to make a comparison in a stable economic context in sixteen heterogeneous countries located on three continents. The fourth contribution is that this paper brings a potentially powerful empirical demonstration and a validation of our hypothesis. Restriction of size has required the elimination of small banks that are generally unlisted, this combination systematically reduces the effect of categorical homogeneity, of differences, of structures, and of banks' particularities on the liquidity of each sample. In addition, we distinguished between the two types of banks on the basis of a very specific parameter of financial performance rarely taken alone in the previous studies, also, we used a single criterion of liquidity.

Our practical contribution is to use real data to better track the performance variation over time. In addition, our results can serve as a reference for decision-makers on the financial competitiveness of two types of banks for the purpose of achieving financial objectives. Moreover, our analysis' method serves as a reference for evaluating the financial situations of different types of banks before obtaining the best choice from the lender. Besides, this study helps banks to plan an optimization program of financial performance and to mitigate future financial crises.

The rest of our comparative study is structured as follows. Section 2 presents the concept of liquidity in banks and literature review based on contradictory previous conclusions. Section 3 describes the methodology and data. Section 4 discusses the empirical results and gives the implications of the findings. Section 5 concludes the study.

2. Literature Review and Development of Hypothesis

2.1 Theoretical Approach of Banking Liquidity

Following the theoretical debate of various studies on the financial performance of conventional and Islamic banks, we noticed that there is a paradox. The previous results in different parts of the world are mixed; sometimes similar and sometimes different. In addition, the indicators of measuring of the banking performance are various. After filtering different analytical approaches to assessing bank performance, it is very important to draw attention to the existence of several analytical approaches. There are many approaches to measuring a bank's performance. Each approach has its appropriate techniques/ parameters. In turn, each technique uses different measures. Virtually, many techniques can be used to measure bank performance, some of which relate to financial performance (Demirguc-Kunt & Hizinga, 1999; Bashir, 2003; Haron, 2004; Samad, 2004b; Kader et al., 2007; Ramanathan, 2007; Badreldin, 2009; Hasan & Dridi, 2010; Parashar & Venkatesh, 2010; Siraj & Sudarsanan, 2012; Hanif et al., 2012; Daraio & Ruocco, 2013; Ouerghi, 2014; Rashid & Jabeen, 2016 and Tabash et al., 2017). In this area of interest, Kumbirai & Webb (2010) indicate that there are two general approaches to assessing the financial performance of banks; the accounting approach, which uses econometric techniques and financial ratios, and the parametric Stochastic Frontier Approach (SFA). While Daraio (2012) found that the parametric SFA also encompasses Data Envelopment Analysis (DEA) as part of a hybrid method combining parametric and non-parametric methods.

However, the criteria for choosing the measures are numerous. They vary according to whether it is a financial institution and more particularly a banking institution, or a non-financial institution (Glassman & Stephen, 1980). Empirically, Lebas (1995) confirmed that performance does not exist unless it is measurable. The evaluation of the measure can in no case be limited to the judgment of result. In interaction with this idea, we have detected two types of measures, the accounting result (Berger, 1992; Timme & Pi, 1993), or the use of compound ratios among which we quote the most used, among these studies we cite (Samad & Hassan, 2000; Iqbal, 2001; Fadzlan, 2007; Pellegrina, 2008; Moin, 2008; Olson & Zoubi, 2008; Lawrence et al., 2011; Miniaoui & Gohou, 2011; Bougatef, 2011; Norhidayah et al., 2011; Olga & Sylwia, 2012; Onakoya & Onakoya, 2013 and Ouerghi, 2014). To evaluate banks' liquidity, we focused mainly on the Financial Ratio Analysis (FRA) method (Booker, 1983; Korobow & Stuhr, 1983; Putnam, 1983; Sabi, 1996; Samad, 1999; Samad & Hassan, 2000; Rosly & Bakar, 2003; Kader et al., 2007 and Olson & Zoubi, 2008). FRA is a tool that allows analysts to make comparisons between banks of different sizes and to compare some banks with the whole sector (Emrouznejad & Cabanda, 2010).

For a long time, the previous studies dealing with the liquidity of IBs are manifested in the form of simple research on the management of financial instruments. It is important to point out that these measures were inspired by other studies on CBs (Ariff & Khalid, 2000; Samad & Hassan, 2000). Previous studies have perpetually used proportional and approximate measures to assess the liquidity of CBs. Subsequently, researchers adapted the same measures to estimate the IBs' liquidity. The studies which compared the liquidity of conventional and Islamic banks are subdivided into two streams. The first current thought that the joint existence of IBs along with CBs can let the former operate with their full liquidity levels. In fact, the decrease in liquidity is not only due to the IBs' mechanical and systemic inadequacies, but also to the competition imposed by the conventional banking market; the toxic and restrained financial operations

of the conventional banking system, and the contradictions between the particular dimensions of the two banking segments that hinder the smooth functioning of IBs. This does not mean that the success and survival of IBs depends on the existence of a monopoly banking market. IBs can operate with minimal security effectiveness which guarantees its durability even in a conventional banking framework due to its operating system based on the mode of Sharing Profits and Losses (PLS). In addition, the management of IBs and the selection of sectors or areas of activity is done judiciously. However, the second current has considered that the IBs' lower liquidity is the origin of the systemic inefficiency of the CBs. Besides, the liquidity of IBs relative to their conventional counterparts varies from one region to another depending on whether it is an Islamic country or not. This view was justified by the difference between the prudential rules of the transactions applied in the two banking segments. In fact, the level of risk taken by the lender by granting credit via Mushraka or Mudaraba is higher compared to the level of risk generated by the techniques involved in commercial-type financing (Khan, 2012; Thomi, 2014).

The choice of such a ratio is justified by the importance of the results (Modell, 2004; Vakkuri & Meklin, 2006), the inclusiveness, the complementarity and the precision of this ratio. This ensures the logic of interpretation and is a good means of analysis and an effective method of management (Weick, 1995; De-Kool, 2004). Nevertheless, research in the literature has shown that the simultaneous highlighting of several measures of liquidity led to contradictory or non-conclusive results. Table 1 illustrates some comparative studies between the liquidity of conventional and Islamic banks already published in the literature.

Table 1. Liquidity assessment in previous studies

Researcher	Results of the research
Nouy (1993)	He divided the instruments for assessing the performance of a bank into three broad categories: -The first approach is based on the intermediate balances of management. This makes it possible to identify the determinants of the final result. These balances are generally net banking income, total operating income, gross operating income, operating income, and net income. -The second approach is to analyze costs, returns, and margins. This is essentially motivated by taking account of the overall bank's activity, including service activities and off-balance sheet activities. -The third approach includes all the ratios of the operating structure. In particular, he found the overall operating ratio that summarizes the share of gains absorbed by fixed costs, ROE, ROA, the indicator of fragility, financial risk and the prudential solvency ratio (Cooke Ratio) which is a ratio intended to measure solvency through the ratio of own funds to total liabilities.
Bashir (2000)	In testing a sample of 14 IBs, he examined the link between banks' internal characteristics and performance after controlling for external factors. He showed that capital structure and liquidity largely explain performance.
Samad & Hassan (2000)	They assessed the efficiency factors and the disparity between the performance of Bank Islam Malaysia Berhad (BIMB) and 8 CBs in terms of profitability, liquidity, and solvency during the period (1984-1997). According to the empirical results, they indicated that BIMB is relatively more liquid, less risky and more solvent than those of CBs. In addition, the IB has shown significant progress on ROA and ROE.
Hakim & Neami (2001)	They compared bank performance and risk in two MENA countries where banks operate under similar market-driven economic regimes of Egypt and Lebanon. They studied the impact of liquidity, credit, and capital on the profitability of banks in the banking sector of each country. The study examines a period of banking sector reforms from 1992 to 1998, taking into account differences in banking system structure. They performed cross-sectional analysis and time series analysis by combining the Egyptian and Lebanese banks into a single data set. Hakim & Neami (2001) chose the panel data technique with fixed effects models to estimate the results. They have stabilized some coefficients to vary only over time, while others may vary from one country to another and over time. In order to assess the overall bank performance in each economy, the empirical analysis of the country-specific effects revealed that the ROE in the banking sector is an increasing function of the bank's lending activities in Lebanon and in Egypt. Thus, there is a close link between the adequacy of own funds and the performance of commercial banks in both countries. The negative correlation is due to the unrecoverable cost. Therefore, big banks realize

	high profits in absolute terms, but not in percentage. This effect is stronger in Lebanon than in Egypt because the Lebanese banks are relatively less capitalized than their Egyptian counterparts.
Samad (2004b)	He compared the performance of IBs and conventional commercial banks in Bahrain. He used the financial ratio analysis method for the period from 1994 to 2001. Based on the results found, he discovered that there is a significant difference between the two credit risks of both banks' groups. However, he did not find a major difference between profitability and liquidity. He concluded that commercial banks are less profitable, less liquid and are characterized by a higher level of credit risk than IBs.
Siddiqui (2008)	He tested the liquidity situation of a sample of Pakistani IBs over the period (2003-2004). By returning to the IBs' balance sheet, he used 3 liquidity ratios (Cash Deposit Ratio, Liquid Assets/Total Assets and, Liquid Assets/Total Deposits). Finally, he demonstrated that the internal characteristics of banks (capital structure, asset quality, and risk) have a significant effect on liquidity.
Olson & Zoubi (2008)	They used 26 financial ratios to compare Islamic and conventional banks in GCC countries during the period (2000-2005). They found that the product structure of IBs is different from that of CBs because it is based on the obligation of exchange or financing more than instruments and real assets. CBs remunerate deposit funds' collection by a predefined interest rate, while deposit funds at the level of IBs are subject to the principle of sharing risks (Hanif, 2011; Zeitun, 2012).
Rashwan (2010)	He analyzed the performance of Islamic and conventional banks between 2007 and 2009 using the ratio analysis method. The ratios that have been defined are Return on Assets and Equity, Net Loan on Total Assets, and Gross Loan Loss Reserve. The researcher selected 46 IBs and 49 first CBs listed in both sectors. The database covered 15 countries (Saudi Arabia, Iran, Kuwait, Qatar, United Arab Emirates, Bahrain, Turkey, Egypt, Pakistan, United Kingdom, Bangladesh, Sudan, Syria, Palestine, and Jordan). The study applies the MANOVA techniques to analyze the financial secondary data for only publicly traded banks in the same region. He found that IBs outperformed CBs in 2007. By contrast, in 2008, there was no significant difference between the two banking systems. In 2009, both types of banks performed well. He concluded that the financial crisis has impacted both banking systems, but, the depth of the impacts on IBs is limited to lower yields.
Yasser (2011)	Following the rapid growth of the Islamic banking industry worldwide after the Subprime crisis, this sector is attracting attention and giving a clear indication that there is a high level of confidence in the industry. Many Western countries have put in place various measures to set up their Islamic finance systems. Yasser (2011) studied the possibility of developing South Africa's experience to become an Islamic finance center in the African continent. He compared the differences between Islamic and conventional banks in South Africa from nature and underlying principles. Then, he highlighted the various obstacles that hinder the operation and growth of IBs in Western countries and South Africa. He concluded that these challenges revolve around institutional and legal frameworks, regulatory and supervisory bodies, requirements of the South African Reserve Bank, interest, taxation, and conceptual designs. To overcome the constraints, he offered an overview of how other countries have faced similar challenges.
Zaki et al. (2011)	They explored the determinants of the financial turmoil of the Subprime crisis in the UAE's financial markets and assessed the impact of the UAE's bailouts on its economy in the short and long term. They concluded that government intervention saved the troubled banks during the crisis period. As a result of the increased leverage risk of the banking system and the liquidity risk of the UAE economy, the government took a crucial decision to reduce the financial crisis impact. The sector's protection policy has contributed to the survival of the country's banking sector.
(Abdulle & Kassim (2012)	They compared the performance of a sample of IBs with another of CBs in Bahrain after the Gulf War during the period (1991-2001) by choosing as measures profitability, liquidity risk, and credit risk. This study showed that there is no significant difference between Islamic and conventional banks in terms of profitability and liquidity.

Omar & Muhammad (2012)	They conducted a study aimed at assessing the impact of banking and macroeconomic determinants on the profitability of IBs. The base sample was selected from 25 banks from 12 countries located in four regions during the period (2006-2010). They analyzed the impact of economic factors by using the panel method. Results indicated that capital adequacy, asset-lending, and asset management have a significantly positive effect on the ROA and ROE of IBs. Besides, banks held the largest asset and achieved higher profitability. Finally, they concluded that asset size has a positive and significant impact on the profitability of IBs.
Siraj & Sudarsanan, (2012)	They studied the growth of performance indicators of 6 CBs and 6 IBs in the Gulf Cooperation Council region. The study was conducted using the Financial Ratio Analysis method. The analysis revealed that CBs experienced revenue growth over the study period not because profitability did not improve but due to higher provisions for credit losses and impairment losses. While IBs are more equity-financed than CBs.
Hasan & Dridi (2010) Abdal-Majeed et al. (2013)	They measured the performance of IBs relative to their conventional counterparts in terms of profit, equity, efficiency and liquidity during the 2007 global financial crisis in countries whose religion is Islam. Financial reports showed that IBs performed average achieved a higher average performance than their conventional counterparts.
Moin (2013)	He conducted a comparative study between Islamic Bank Meezan's performance against that of 5 CBs in Pakistan for the period (2003-2007). To measure performance in terms of profitability and liquidity, he used 12 financial ratios. Results revealed that the position of liquidity and profitability was the same in both types of banks.
Zarrouk (2014)	He tested the effect of the financial crisis on the performance of 43 IBs in 10 MENA countries over the period (2005-2010). He revealed that IBs are not immune from the effects of the crisis. Results indicated that after the crisis, the profitability and liquidity of IBs in the countries of the Gulf Cooperation Council (GCC) have decreased drastically. The findings further pointed out that IBs in non-GCC countries were more efficient, more liquid, more profitable and less risky during and after the period of the financial crisis than those in the GCC countries.
Tlemsani & Al-Suwaidi (2016)	This study was established in two stages, first, they performed a comparative study between the performance of the Islamic and conventional banking systems operating in the UAE during the Subprime financial crisis. Then, they conducted a cross-sectional analysis between 8 IBs and 43 CBs. Empirical results revealed that the two banking sectors in UAE were negatively affected, however, IBs showed better competitiveness and performance than CBs. The cross-sectional analysis showed that IBs maintained a higher market share and total liquid assets than CBs in the UAE during the financial crisis. Also, in terms of liquidity and solvency risk mitigation, IBs outperformed CBs.
Elgadi (2016)	He studied the interrelation between the performance of Sudanese IBs and their determinants on a sample of 27 banks during the period (2005-2013). To generate a complete picture of these interrelations, three models have been constructed. The empirical model revealed that PLS modes of financing have a positive impact on profitability through its Modarabah and Mosharakah products. This is due to the policy of Sudan's central bank which encouraged commercial banks to use the Mosharakah financing technique in all economic activities. Moreover, this policy gave each bank the right to determine the percentage of Modarabah in profits. Hence, the management quality of Sudanese IBs is insufficient to predict and avoid the risk associated with leverage.
Qasim et al. (2017)	They analyzed the performance of Jordanian IBs over the period (2010-2013) in order to classify them according to the level of superiority of the appropriate measures. They used a sample of three Jordanian IBs (JIBFI, IIAB, and JDIB). Unlike previous studies that used one or two methods of performance analysis, the current study exceeded this limit. Its contribution is the simultaneous use of several performance measurement methods, it has simultaneously integrated three methods of performance analysis. They analysed the financial performance of Jordanian IBs (FRA, DEA, and MI). Significant results showed that JDIB Bank achieved the highest ranking, followed by IIAB, while JIBFI was ranked 3rd.

Referring to previous comparative studies of bank liquidity through the use of several ratios, we have noticed that the conclusions are almost always mixed. They are sometimes similar, but they are also sometimes contradictory from one study to another. In both scenarios, the advanced results are inconclusive due to the lack of convincing confirmations and lack of generalization. Since the use of various ratios or the liquidity measures are not efficient enough to obtain unique results, we have created a new approach in our work. It consists of testing a single liquidity measurement ratio to come up with convincing final answers.

2.2 Liquidity Measurement Ratio of Conventional and Islamic Banks

Bank liquidity is the ability of the bank to dispose of sufficient assets that are readily convertible into cash in order to meet these financial commitments and contractual obligations. Liquidity is also an important benchmark in the banking sector as it represents a bank's ability to manage its liquid assets efficiently and effectively so that banks can make investments in its liquid assets. This ratio also shows how to liquefy a conventional or Islamic bank during periods of stability or economic shocks. It is also a means to compare different banking systems. A bank will be exposed to liquidity risk when it does not have enough liquid assets to offset all of its future scheduled obligations. In IBs, liquidity generally has a direct and significant impact on financial performance.

From a business point of view, the bank is not only a financial institution of deposits and credits but also a set of moral contracts that are established between the bank and its depositors who trust it to manage their deposits. Savings accounts and transaction deposits can be withdrawn at any time. In the event of a loss of confidence, banks and other deposit-taking institutions are exposed at any time to liquidity risk, in particular when withdrawals exceed the limit over a short period (Samad & Hassan, 2000).

In the general sense, a high liquidity ratio means that the bank has a sufficient margin of safety to cover these urgent commitments. Liquidity ratios measure the ability of banks to meet short-term obligations and determine the ability of banks to repay short-term debt, maintain cash positions and recover debt (Moin, 2008; Hassan & Bashir, 2003; Norhidayah et al., 2011; Osama et al., 2013 and Ola & Suzanna, 2015). They also used the ratio (Net Loans/Total Assets) as the best measure of liquidity. This ratio measures the capacity to transform liquid and non-liquid assets into cash. Maximizing this ratio generates an additional margin of bank security to cover short-term debts. The ratio reflects the proportion of liquid assets owned by the bank in terms of total assets. In other words, this report judges whether the share of the assets, held by the bank is possible to transform and invest in the form of loans. A high value of this ratio reflects less liquidity held by the bank (Rashid & Khaleequzzaman, 2015). If a bank's liquidity increases together with a potentially remarkable level of profitability, the ratio reveals the availability of sufficient liquidity and the wealth of the bank.

Although the contributions of the majority of previous comparative research have resulted in contradictory results, liquidity will remain the best measure of financial performance used extensively by financial analysts. In what follows, we illustrate the heterogeneous conclusions reached. Some researchers have concluded that there is no difference in terms of liquidity between the two bank segments (Metwally, 1997; Moin, 2008). While another current of the literature has testified the excess liquidity available in IBs compared to the state of liquidity in its conventional analogs (Parashar & Venkatesh, 2010; Jaffar & Manarvi, 2011; Iqbal, 2012; Osama et al., 2013 and Wasiuzzaman & Gunasegavan, 2013). However, other results contradict the results reported by the first stream. They showed that CBs are more liquid than their Islamic counterparts (Rosly & Baker, 2003; Kader et al., 2007; Hanif et al., 2012 and Fayed, 2013).

In their research, Hanif et al. (2012) analyzed the liquidity of the best IB in Pakistan (Meezan Bank Limited) compared to a group of 5 CBs over the period (2003-2007). They measure liquidity by three ratios. Liquidity is presented by Net Loans to Asset Ratio, Net Loans to Deposits Ratio and Borrowing. However, they discovered that there is no significant difference between the liquidities of both types of banks. Also, Onakoya & Onakoya (2013) compared the liquidity of a sample of IBs and another sample of CBs in the United Kingdom during the period (2007-2011). To analyze the efficiency of banking activities, they preferred the Financial Ratios Analysis method. As measurement parameters, the researchers used three financial ratios, namely Loans to Deposits Ratio, Cash and Portfolio Investment to Deposit Ratio and Loans to Assets Ratio. The results of the comparative study seem to be ambiguous. They found that IBs are less liquid than their conventional counterparts in terms of Loans/Deposits Ratio, and Loans/Assets Ratio. Whereas, IBs are more liquid in terms of Cash and Investment Portfolio to Deposits.

However, Sujan et al. (2013) compared the liquidity of a sample of traditional Bangladian banks with another sample of IBs during the period (2008-2012). The liquidity of two types of banks was measured by two ratios, Loans to Deposits Ratio (LDR) and Loans to Assets Ratio (LAR). The differential results revealed that there is no significant difference between the liquidities of both groups of banks. The decline in this ratio reflected an increase in the banks'

deposit bases. The LAR had been higher in IBs throughout the study period, while the LDR was higher and more stable in the CBs over the same period. Overall, CBs are more liquid than IBs.

Also, in a comparative study between the liquidities of IBs and its conventional counterparts, Fayed (2013) analyzed the liquidity situation of two categories of banks in the Egyptian context during the period (2008-2010). She found that CBs are more liquid than IBs. Consequently, this conclusion embodies the good management of the liquidity of CBs compared to that of their Islamic counterparts (Hassoune, 2002). Also, Kader et al. (2007) found the same result in the UAE context.

In another study, Sehrish et al. (2012) assessed the liquidity of conventional and Islamic banks in the Pakistani context during the period 2007 to 2011. The findings of the liquidity measures by Loans to Deposits and Loans to Assets from the two groups of banks revealed that CBs are more liquid and more stable than IBs, but the liquidity of IBs decreased over time, and this is explained by the decline in people's confidence to Islamic banking and its depository attitudes.

Conversely, Iqbal (2001) conducted an opinion poll aimed at questioning bankers and scholars in Islamic finance. He found that all impressions signify the overabundance of liquidity in IBs. Similarly, Iqbal (2001) carried out another comparative panel study between the performance of Islamic and conventional banks between 1990 and 1998. The selected countries simultaneously containing both forms of banking networks (Note 1). To measure banks' financial performance, he used ratios of profitability, liquidity, efficiency, capital adequacy and solvency risk for 12 CBs and 12 IBs. By the financial ratio method, he found that IBs held excess liquidity and a better position of management quality. The same result has been confirmed by (Usman & Khan, 2012; Jaffar & Manarvi, 2011 and Ansari & Rehman, 2011).

In the same area of interest, Wasiuzzaman & Gunasegavan (2013) compared the performance of Islamic and conventional Malaysian banks over the period (2005-2009). The tested samples consisted of 9 CBs and 5 IBs. The comparison was made based on the capital adequacy, liquidity, operational efficiency, corporate governance, and asset quality. The results revealed the existence of a significant difference between the two types of banks. As a result, researchers confirmed that IBs are more liquid, more efficient, more capitalized and more independent than their conventional counterparts.

All things being equal, Tanimulislam & Ashrafuzzaman (2015) assessed the financial performance of Islamic and conventional banks in Bangladesh between 2009 and 2013 using the CAMEL method. The comparison was made on two samples of listed banks, one of which is composed of 5 listed CBs and the other consists of 5 listed IBs. The analysis mainly concerns Capital Adequacy, Asset Quality, Management quality, Earnings, and Liquidity. The comparative study revealed that there is no significant difference between capital adequacy, management capacity and profits of Islamic and conventional banks. However, about the quality of the assets, they detected a significant difference. This finding explains why the IBs had more liquid assets' volume compared to the CBs.

Indeed, Samad & Hassan (2000) compared the performance of a Malaysian Islamic bank compared to 7 CBs of the same origin over the period (1984-1997). They confirmed the IB's transcendence in liquidity, but it was found less risky than its conventional competitors. In the same Asian region, (Batchelor & Wadud, 2004) conducted an empirical survey using the annual reports of 2 IBs, 9 domestic banks and 4 foreign banks offering Islamic banking services in Malaysia from 1997 to 2002. They concluded the prominent liquidity of IBs compared to their conventional counterparts during the period of the financial crisis. Knowing that low liquidity reflects a bank's suffering and an imbalance in its liquid and non-liquid assets, this situation forces the bank's managers to follow the planning of an asset and liability management strategy that enables them to respect its obligations (Sangmi & Nazir, 2010).

It is customary for all banks to keep liquid assets as "prudent reserves". Liquid assets may take the form of cash or short-term securities. These assets include cash, bank balances, money loans, pension loans and investments in government securities (Siddiqui, 2008). Still, on the same path of research, Maysa & Rasha (2015) compared the liquidity of IBs and CBs in Jordan over the period (2009-2013). They revealed that there is a significant difference between the liquidity measurement ratios, which means that there is a liquidity benefit for IBs compared to their counterparts because they have benefited from fewer opportunities. Due to Sharia constraints, IBs face a limited number of investments. Moreover, due to the prohibition of interest, IBs do not have the possibility of granting loans from the central bank in case of funds' need.

Indeed, Bilal & Amin (2015) sought to demonstrate whether IBs are more operationally liquid than CBs. They conducted a study in the Pakistani context during and after the Subprime crisis (2007-2012). Three ratios were selected to measure the liquidity of the Pakistani banks that are: Cash and Accounts with Banks/Total Deposits, Current Assets/Total Assets, and Net Loan/Total Assets. In the light of the empirical results, the average differences revealed that IBs recorded a Net Loans/ Total Assets Ratio lower than that of CBs, which implies that IBs did not rely on borrowed funds. As a result, they concluded that IBs are more liquid than CBs during and after the Subprime crisis.

In a different context, another case has been assimilated by the literature review to make comparisons making it possible to maintain conclusions proportionate to some previous points of view. At the bottom of this distinctive center of interest between the two categories of banks, Ola & Suzanna (2015) compared the liquidity of Islamic and conventional banks in the United Arab Emirates during the period (2008-2014). They used financial ratios to perform a comparative panel study between Islamic and conventional banks in the United Arab Emirates aimed at answering the question, which group of banks is the most liquid? They found that there are statistically significant differences between the two types of banks in terms of liquidity. Therefore, they concluded that IBs are more liquid.

In the same line of theoretical foundations, the exploitation of the same context can, sometimes, lead to similar results. This proposal is possible especially if researchers keep a traditional research methodology and adapt a demonstration technique already used. In this sense, Shahab et al. (2016) conducted a comparative study between Islamic and conventional Pakistani banks based on their liquidity throughout the period (2006-2014). They pointed out to 5 IBs and 5 CBs of similar size. To perform the analysis and comparison, two types of ratios were selected: Investment to Total Asset and Advances to Total Asset. They found that IBs are more liquid than CBs. This reflects that lending practices in IBs are more beneficial to the extent that they rely on real and productive assets. Furthermore, the attractive investments of IBs are qualified by their resistance against financial shocks. Also, the efficiency, profitability, and distribution of banking services provided by the bank to its customers ensure their continuity and durability.

Taking into account the dominant results in the banking performance literature, we tested the following hypothesis:

Hypothesis: IBs are more liquid than CBs in a financial stable period.

To overcome the theoretical confusion of this subject and to answer the problem posed in the literature review, in the next section, we proceed to empirically demonstrate the evolutionary aspects of the liquidity of Islamic and conventional banks from a comparative perspective. In what follows, we try to answer and interpret empirically the test it aims to provide answers to the question previously asked: Are the IBs really more liquid and stronger than CBs or is the opposite assertion right?

3. Methodological Framework: Presentation of the Data and Comparison Between Banks Liquidities

According to the literature review on this topic, we tested the empirical validity of the hypothesis already proposed and to qualify the interdependence, which may exist, between the liquidity of CBs and that of IBs. Several studies have confirmed the strength of IBs since they support shocks and resist against international financial crises and economic collapses (Jouini, & Pastre, 2009; Siddiqui, 2009; Masmoudi & Belabed, 2010). Indeed, other comparative studies have demonstrated the stability of the Islamic financial system and its continued ability to ensure sustainable improvement of the liquidity of IBs even after the occurrence of the crisis. However, a third current has proved that the assumption of financial strength / fragility of Islamic and conventional banks have been destroyed during difficult periods of financial crisis / stability.

To continue our approach, we began our empirical study after having discussed the main empirical results elaborated on the topic of the financial stability of the banks. This section is structured as follows: We develop the related methodological choices in the first section and we discuss our empirical evidence in section 2 after analysing the comparative results of the liquidity values of IBs and CBs.

In this section, we highlight the best operational approach of comparing liquidities' ratios of conventional and Islamic banks. We adopted the Financial Ratios Analysis Method which is the most practical method applied after an adaptation procedure and a convergent methodological demonstration. Each sample parameter is explained by a single ratio. Several reasons explain this choice. First, all performance indicators are measured by non-confirmatory ratios (Teker, et al., 2011; Rashid and Khaleequzzaman, 2015). Secondly, because the liquidity specific data of conventional and Islamic banks are not easily collected from their annual reports, the reduction of our samples' size is necessary since the requested information on liquidity is not always disclosed. Finally, given the available banking information, we conducted a conditional study, in which the selection of observations constitutes a methodological contribution of high-quality results and a basic limit to the data collection process. The preliminary observations taken into account necessarily affect the hypotheses put forward, so that the observation that does not comply with the rules of the play is eliminated in the order of the following hypotheses until the two final samples are obtained. Our contribution is to compare a single liquidity ratio.

First, we explained the procedure for selecting two bank samples definitively selected after applying the method of collecting variables to collect the database on which our research is based. In the second step, we defined the different measures of variables. Afterwards, we indicated the investigation method used to interpret the results found.

3.1 Description of the Samples Studied

3.1.1 Constitution of the Samples

Both samples tested were taken from two base populations. The first population constituted by 1788 conventional financial institutions, while the second population composed of 467 Islamic financial institutions. These populations covered three continents: Europe, Asia, and Africa. Sixteen countries are involved in our work: Egypt, Bangladesh, Indonesia, Pakistan, Malaysia, Turkey, United Kingdom, Bahrain, Jordan, Kuwait, Oman, Qatar, Saudi Arabia, United Arab Emirates, South Africa, and Sri Lanka.

However, after the exclusion of all financial institutions operating with specific regulations, we tested samples include only purely conventional or Islamic banks. Besides, given the difficulties in collecting financial information, we excluded banks for which we detected missing observations, variables or data. Moreover, we also dismissed multi-type mutated banks (IB with conventional windows and CB with Islamic windows). These three conditions led us to eliminate 337 conventional financial institutions and 231 Islamic financial institutions. Subsequently, the number of remaining banks of each type of bank was reduced based on qualitative and quantitative filtering criteria (equality of samples, type of activity, similarity of country's origin, bank width). Therefore, each CB has its closest Islamic equivalence, taken from the same country in terms of capital and size. This restriction reduced our samples' size to 63 banks each. Finally, after several eliminations and deletion steps, we obtained two pairs of equal samples (n1= n2).

3.1.2 Data Collection

The data was collected from DATASTREAM database. To better understand the dissimilarities between the two groups of banks and to improve the clarity of the results, the choice of the observations relates essentially to individual data, even if the bank belongs to a group of banks. Nevertheless, the accuracy of the results required the following of a data filtering procedure so that observations containing some missing data were eliminated. For this reason, we have been careful to remove financial institutions that do not qualify as banks. In addition, we have also excepted the banks belonging to the same sample whose types are heterogeneous to obtain a sample of CBs which is almost similar to its Islamic counterpart and vice versa.

Similarity includes also equality between CBs and IBs samples' size. Moreover, the number of IBs chose from each country is equal to the number of CBs of the same country. While, as revealed in Table 2, the affinity means that in each country, the conventional or the Islamic bank (CoB (Note 2), InB (Note 3) or UnB (Note 4)) of the first sample must have its counterpart of the second sample located in the same country with a probability of 94.7%~(95%). After filtering, each sample has at total of 63 observations of banks collected during the period (2010-2018). The following table summarizes the process followed, as well as the different stages of the observation selection process.

Table 2. The samples filtering process of conventional and Islamic banks

Gait	Number of CBs			Number of IBs		
Populations of initial financial institutions	1788			467		
Exclusion of non-bank financial institutions and banks whose data are not published, available or have missing data as well as non-conventional or Islamic banks.	1451			236		
Exclusion of additional banks at the limit of choice of similar banks and converge.	274			168		
Final sample	63			63		
Bank type	CoB	InB	UnB	CoB	InB	UnB
Number of banks	41	15	7	36	19	8
Proportion of total sample	65.08%	23.81%	11.11%	57.14%	30.16%	12.70%
Similarity rate	92.06%	93.65%	98.41%	92.06%	93.65%	98.41%
Difference rate	7.94%	6.35%	1.59%	7.94%	6.35%	1.59%

3.2 Measurement of the Variables to Be Compared

Since the findings in the literature are inconclusive due to the heavy use of financial ratios, we symbolized the liquidity by a single ratio. Our ratios choice is justified by two main reasons. On the one hand, in practice, a deep contention arises. The large CBs listed adopt accounting rules established by international standard setters (IASB) (Note 5) and (FASB) (Note 6). The prohibition of using of interests means that some conventional accounting practices may not be applicable in Islamic financial institutions. Therefore, not all measures are valid for performing a comparative study between banking systems. In this case, the choice of a single ratio to assess the liquidity situation provides conclusive results that better reflect the bank's reality, whatever its type. On the other hand, the two models differ in terms of the asset valuation method, the drafting of financing contracts, the recognition and treatment of income (Ahmed, 2002; Haniffa and Hudaib, 2002). Therefore, the financial ratios of the two models are not calculated in the same way and the informational content of its measures will not be treated and interpreted identically. To remedy these problems, (A.A.O.I.F.I.) (Note 7) has issued custom-tailored accounting and auditing standards in coordination with other specific agencies for use by listed and unlisted IBs. This does not mean that existing conventional accounting measures and concepts will all be ignored or adopted. But, concepts inconsistent with Sharia rules have been rejected or modified, while concepts converging with Sharia principles have been incorporated into the norms (A.A.O.I.F.I.) (Lewis and Algaoud, 2001).

Although each country has its own accounting framework that is more/less different from other countries, this is the theoretical proof that avoids the lack of clarity related to differences in the application of accounting standards. Before the determination of the financial ratios, the account must be taken of the constitutional and functional differences between CBs and IBs. Practically, the functions of IBs resemble those of CBs. Islamic scholars have compared the discrepancies to develop similar products to those of CBs, allowing them to replace interest rate payments and update fees (Beck et al., 2013 and Ada and Dalkilic, 2014). For example, (Waseem, 2008) argued that financing costs are almost the same in IBs and CBs. He argues that interest rates take into account administrative costs, the sharing of profits and record ancillary costs.

In particular, Turen (1996) has provided an assimilation of methods for calculating financial ratios between the two types of banks. He suggested that the functioning of an IB depends on the combined effect of three laws governing the degree of the gap between the two banking models. First, the deposits holders at the level of CBs are replaced by the shareholders of IBs. Second, interest paid to depositors is converted by shared profits or losses. Third, loans to CBs customers are converted into equity investments in IBs. Compliance with these three principles indicates that most financial ratios in the two categories of banks are defined in the same way. However, the net income of an IB includes the conventional net income before taxes, plus Zakat, which has been supplemented by the income tax. Furthermore, interest expenses are replaced by commission income and expenses. Indeed, the loans and advances granted by the CBs are essentially equivalent to the investments according to the technique of Mudaraba, Murabaha, and Moucharaka. As a result, all researchers tend to evaluate the major sections of the financial statements of two types of banks. They find that the main elements are almost similar.

To measure bank liquidity, we separated this notion by a single indicator. The table below summarizes all the information needed to qualify this variable.

Table 3. Clarification, description and symbolization of bank liquidity

CBs rating	IBs rating	Measurement	Previous studies
Ltc	Lti	Net Loans / Total Assets	Moin (2008) ; Olson & Zoubi (2008) ; Pellegrina (2008) ; Bougatef (2011) ; Norhidayah et al. (2011) ; Olga & Sylwia (2012) ; Emilia & Judit (2012) ; Onakoya & Onakoya (2013) ; Osama et al. (2013) ; Rashid & Khaleequzzaman (2015) ; Ola & Suzanna (2015).

3.3 Operative Method of Interpreting the Comparison Results Between the Liquidity of the Islamic Banks and That of Conventional Banks

The review of the literature assessed the resistance of conventional or Islamic banking institutions to financial shocks, allowed us to draw two conclusions. In previous studies, researchers have in most cases applied either a deterministic or a demonstrative approach, but they have never tested the exploratory approach. In addition, they conducted either

single-sector impact studies encompassing only CBs, only IBs or exceptionally case studies, the objective being to demonstrate the effect of financial crises or other banks characteristics on a liquidity parameter, or comparative studies between two or more models, in this case, the goal is to make a simple comparison to determine the type of impact between the two groups. At first sight, they justified the bankruptcy of CBs independently of their competitors in the banking market and without performing causal linear reasoning. Researchers in the previous studies have shown that CBs have been hit hard because of the rapid decline in the value of their assets. Some institutions went bankrupt while other institutions were saved because of public bailouts. Furthermore, the Islamic banking institutions, in all cases, even if they had been impacted, they had lowered their financial performances and they were not widely affected.

To answer the previously asked questions, it is interesting to choose the constructivist analysis approach. This approach would be a key factor and a necessary tool for successful recognition and legitimization of research. Also, the proposed approach is the most appropriate for assessing knowledge and suggesting new thinking. Constructivism has been defined by Perret & Seville (2003) as "an approach to knowledge in terms of ethical validity, that is, based on criteria and methods that can be discussed". Our study aims to reveal empirically the most liquid banking model during a period of economic stability, after a comparative analysis between two heterogeneous samples of Islamic and conventional banks. The choice of an empirical process has a direct effect on the trends in the synthesis results and the interpretations' quality, which is why we have established a specific and original method of samples' composition.

The evaluation technique of associated bank liquidity frequently used in comparative studies between IBs and CBs is the "Financial Ratio Analysis Method" (O'Connor, 1973; Chen & Shimerda, 1981; Ross, 1991; Hempel & Simonson, 1998; Iqbal, 2001; Rosly & Bakar, 2003; Haron, 2004; Samad, 2004b and Olson & Zoubi, 2008). Our contribution consists in adopting a single parameter to express the bank liquidity, Lt.

After presenting our samples and our test subjects variables, this section is devoted to the analysis of the empirical results from the data of two samples. The statistical interpretation began with the verification of the distributions' normality. Then**,** we tested averages comparison. However, the application of such a parametric test relies on autonomous conditions before its adoption. Besides, the implementation of the comparison test between the averages of two or more samples requires the satisfaction of certain approved conditions. The choice varies according to the case depending on the close link with the type of sample (independent or matched sample), the type of variables (qualitative or quantitative) and if the variables to be tested are quantitative, it is necessary to make sure of the normality of distributions. In this case, before testing the hypotheses, we first checked the normality of the variables of each sample. Finally, in the light of empirical results, we decided on the most liquid group of banks.

Since the two samples are independent, the comparison can not be made without testing the equality between the two groups. In other words, whether the two samples come from the same reference population or belong to two distinct populations. We need to know in advance whether the average liquidity normally distributed by CBs is higher (or lower) than the average liquidity of IBs following the same law.

3.3.1 Test of Normality

This test allows us to know if there is a significant difference between the two types of banks and determine the meaning of the correlation if it exists. First, we verified the distributions' normality of the variables explained by Skewness and Kurtosis Test or by another test of normality. Then we went on to analyse the results of the comparison tests between the means through the Student's Test and Variance Comparison Test or the Mann-Whitney Test, if necessary. It all depends on the outputs of the statistical tests cited, which means that the variables follow the normal law or not and the rigorous approach to compare two independent samples.

The selection of one test instead of another is determined by two conditions:

-Variables distributions' normality of the two samples or the non-satisfaction of the simultaneous normality condition of the variables to be compared;

-Variances' equality of similar variables to test two by two (homoscedasticity).

Figure 1 illustrated the choosing process of the appropriate test according to the data collected and the results of the statistical tests obtained:

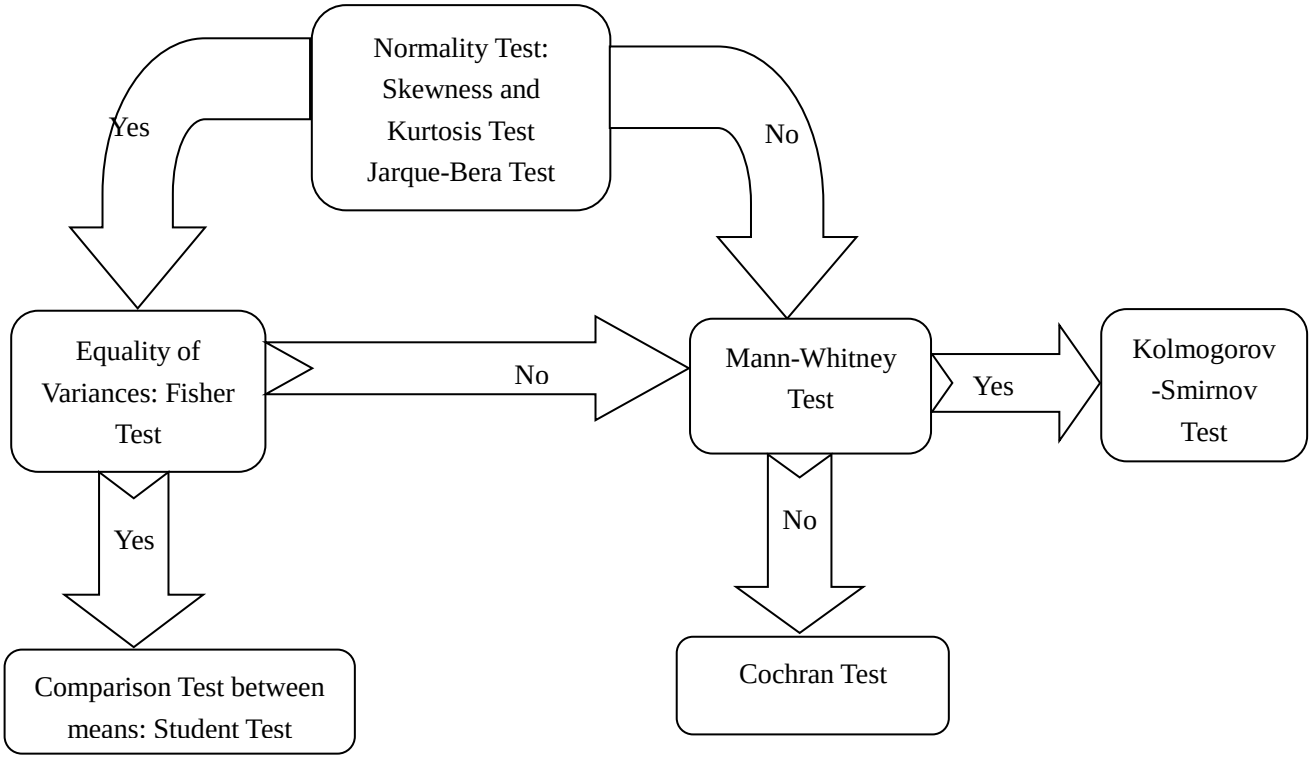

Figure 1. Method of choosing the appropriate comparison test to the results of the normality test

For all the variables that follow the normal law, before applying the Student test, the procedure of this test imposes the verification of the variances' equality. It means that the estimation of the difference between the average liquidity measurements through the Student's test depends on the validity of the hypothesis of equality between liquidity variances. If this assumption is not verified, we apply another substitute test. In case some variables do not satisfy the normality condition, the parametric tests are not applicable. To solve this problem, we can call, as the case may be, either the Mann-Whitney test or the Cochran test.

In practice, normality scanning is mandatory if the size of the test is less than 30 observations. This restriction is not essential when the sample exceeds 30 observations, the minimum size sufficient to ensure the quasi-normality of the sampling distributions. However, the size of our CBs' sample, as well as that of IBs, is equal to 63 banks. Moreover, to ensure the quality of the results and the reliability of interpretations we worked on 567 observations and we verified the normality of distributions, the assurance variables normality maintains the choice of the appropriate tests. Furthermore, there is a package of normal-fit tests, among which we have chosen the Skewness and Kurtosis test. Our approach consists in testing two sets of variables that explain the bank's liquidity. One set of variables symbolizes the IBs, and the other represents the CBs.

The hypothesis test rejects the normality proposition when the probability associated with the Kurtosis coefficient is less than or equal to 5%. According to Table 4, the p-value (0.0027) specific to the CBs' liquidity shows a value of less than 5%. Otherwise, the normality test allows to state, with a certainty of 95%, the non-normality of the data distribution.

Table 4. Normality detection of the liquidity relative to the sample of CBs

Bank type	CBs / Number of observations = 567					
Measurement	Skewness	Pr (SK)	Kurtosis	Pr (KUR)	Prob > χ^2 p-value	Normality
Ltc	16.281937≠0	0.0006	20.94731≠3	0.0000	0.0027	No

Similarly, Table 5 showed that the test of Skewness and Kurtosis specific to the IBs'liquidity generated a p-value (0.0000) less than 5%. Therefore, we rejected the null hypothesis, which indicates that the liquidity of IBs does not follow the normal law.

Table 5. Normality detection of the liquidity relative to the sample of IBs

Bank type	IBs / Number of observations = 567					
Measurement	Skewness	Pr (SK)	Kurtosis	Pr (KUR)	Prob > χ^2 p-value	Normality
Lti	-0.811735≠0	0.0048	8.73516 ≠3	0.0004	0.0000	No

3.3.2 Analysis of the Non-parametric Test: Results for Comparability of Two-Sample Liquidities (the Mann-Whitney Test)

Almost all statistical tests assume the normality of the random variables studied, but this condition is not always confirmed. For variables that do not follow normality, it is possible to apply the Mann-Whitney test (U-Test). This non-parametric test devoted to the comparison between two samples from two independent populations. The Mann-Whitney test replaces the Student's test but never relies on the parameters of frequency distributions and the estimation of mean and variance.

When the distributions are not normal, the Mann-Whitney test is appropriate and effective because this test is widely applicable independently of the samples' size, even if they are not subject to the normality requirement. If the liquidity ratio does not validate the normality test for one of two samples, this leads us to ignore the application of the Student test even if the normality hypothesis is accepted for the same variable in the other sample. Therefore, the distribution of Lt isn't normal for both types of banks. The application of Mann-Whitney test will then be automatic.

Table 6 revealed that the existence of a significant difference between a couple of parameters of bank liquidity. We noticed that the P-value (0.0000) of the Lt ratio is less than 5%. For this reason, we confirmed the rejection of H0. So, there is a significant difference between the CBs' liquidity and that of IBs over the period (2010-2018).

Table 6. Mann-Whitney and Kolmogorov-Smirnov test for the detection of differences between the liquidity of conventional and Islamic banks

Measurement	Kolmogorov-Smirnov	p-value	Mann-Whitney NCB = 567/NIB=567	p-value	Comparison test between averages
Ltc and Lti	0.7553	0.001<5%	3.8124	0.0000<5%	H0 Rejected

4. Interpretation of Comparative Results Between the Liquidity of Conventional and Islamic Banks

As indicated in Table 7, the analysis of average liquidity revealed that the IBs' ratio is the lowest. They recorded only (0.623), however, CBs only reached a level of (0.688). For this reason, our sample of IBs is considered less liquid over the 5 years (0.623<0.688). Preliminary analysis of the liquidity's state between the two models revealed that according to the average liquidity values, the two groups of banks suffered from a lack of cash. We found slightly positive average values. In contrast to the predictions, in terms of difference, the Mann-Whitney p-value is below the threshold of (0.0000<5%), which leads us to reject the null hypothesis. Therefore, we concluded that IBs are more liquid than their conventional counterparts. The increase in liquidity is an indication of the temporary availability of funds and cash reserves. This conclusion proved our second hypothesis, IBs are then more liquid than CBs. Contrary to what we have planned, according to what it is displayed in Table 8, we confirmed that the difference between average liquidity is statistically significant (0.437>5%).

Table 7. Descriptive statistics of the conventional and Islamic banks' liquidity

Measurement	Obs	Mean	Std. Dev	Min	Max
Ltc	567	0.6887331	0.1914958	-0.3751828	1.752649
Lti	567	0.6239582	0.2376785	-0.0806846	1.328601

Table 8. Comparison between the liquidity ratio of conventional and Islamic banks

Measurement	Hypothesis test of comparison between the ratios of the liquidity	Decision
Ltc and Lti	P(Ltc>Lti) = 0.437> 0.05	H Accepted
	H Accepted	Presence of significant difference

CBs retain more remunerated deposits which are considered the primary source of liquidity (23748029.6M$>18741491.34M$). The evidence cited demonstrates the ability of CBs to generate large margins of security, more provisions for risks and charges and more reserves, the aim being to cover their short-term debts faster than IBs. Nevertheless, CBs include three categories, investment, commercial and universal. Because of this diversification, they rely more on high-risk financing such as consumer loans, commercial loans, short-term investments, and service finance.

However, the main reason for any difference in comparative liquidity is that IBs suffer from a market imperfection due to the availability of large amounts of unpaid deposits. This peculiarity is transformed into a formality with double effects on the liquidity of IBs. The studied restriction considerably reduces the cost of financing before IBs (Hassoune, 2002). Moreover, because of available liquidity, IBs rely more on loans for large investments and heavy sector activities often provided by institutional investments known as profit-sharing investment accounts via Moudharaba techniques and Moucharaka. However, they have more difficulty attracting deposits (Qard AL Hasan unpaid). Deposits are resources that are collected at no cost and are more strategic in relation to deposits collected by interest-based banks. In addition, the risk of liquidity in Islamic financial institutions stems from premature and urgent withdrawals by the account holders due to a mismatch between the investors' expectations of return and the actual yield or also in case of loss of confidence to the services of this model banks. This is why IBs are required to maintain sufficient liquidity and cash equivalents in the form of profit equalization reserves and investment risk reserves to meet requests for medium and long-term credits. As illustrated in Table 9, from a comparison between the balance sheets structures of Islamic (Aljifri, 2013) and conventional banks, we have demonstrated the origins of the most liquid and least liquid resources for each model.

Table 9. Simplified comparative balance sheet of universal conventional and Islamic bank

Assets of Islamic Universal Bank	Assets of Conventional Universal Bank
* Cash and interbank operations	* Cash and interbank operations
* Customer operations:	* Customer operations:
-Customer credits in the form of Murabaha, Salam, Istisna, Qard AL Hasan	-Credit on the clientele
* Securities transactions, provisions and miscellaneous	-Affacturage
-Shares investments/other securities	* Securities transactions, provisions and miscellaneous
-Financing under contract Moucharaka Islamic Investment Assets	-Obligations and other fixed-income securities
- Contract Funding Moudharaba Islamic Investment Assets	-Shares and other variable income securities
-Investment under contract Istisna Islamic Financing Assets	-Promotion real estate
-Investment under contract Ijara Islamic Financing Assets	-Participation and portfolio activities
-Stock under contract Murabaha Islamic Financing Assets	-Part in related companies
-Stock under contract Salam Islamic Financing Assets	-Credit lease and rentals with the option to purchase
* Cash and balances with the central bank	- Simple location
* Balances and deposits with other banks	* Fixed assets

* Paid services (Wakala, etc.)	
* Investment security	
* Fixed assets	
Liabilities of Islamic Universal Bank	Liabilities of Conventional Universal Bank
Equity capital:	Equity capital:
* Share Capital	* Share Capital
* Equalization reserves (Statutory Reserves)	* Reserves
* Reserves for investment risks (Special Reserves)	* Reserves for risks and charges (Special Reserves)
*Equity	*Equity
* Own shares	* Own shares
*Retained earnings	*Retained earnings
Liabilities	Liabilities
* Interbank transactions and cash	* Interbank transactions and cash
-From the central bank	-From the central bank
-On other banks and institutions	-On other banks and institutions
* Current account: Deposits for which no interest is served	* Current account: Remunerated deposits with interest
* Unpaid savings accounts	* Savings accounts remunerated
* Other liabilities	- Term deposits
* Sukuk financing instruments	- Deposits' certificates
* Profit sharing and loss sharing accounts	* Fixed-income investment accounts

Source: Snoussi, K.J. (2012). Islamic finance. Paris.

The question that arises at this point is: what is the link between the liquidity and the distribution of Islamic credits, at the time when their profitability is negative?". Credit risk is generally defined as the probability of a decline in a bank's assets, particularly loans. In this case, the bank must anticipate provisions on loans. The higher the credit risk, the higher the provision recognized (Tsorhe et al., 2011). The level of IBs' liquidity is positive but weakly correlated with profitability (0.1917). In addition, the level of liquidity is accompanied by a potential loss of profitability over the entire study period of (-9,732), to the detriment of the other parameters. This situation is an indication of financial stress; it opens the consciousness to two possible explanations. Either it allows to visualize the sources of failure and the origin of financial imbalance because of the excess of ill-invested liquidity, or the imbalance arises following a lack of liquidity of which is constituted in this case proof of liquidity balance gravity. However, Table 10 revealed that IBs upset 59.3% of its entire assets in liquidity to grant excessive credits, despite having disposed of jobs consisting mainly of fixed assets. Thus, IBs allow only real transactions despite being less liquid. Non-performing interest loans on the Islamic interbank market, such as Murabaha products, cannot be converted into cash before maturity at a fixed term. As IBs prohibit all registrations of Riba, they use their deposits to provide their clients with only pure Islamic financing. The Islamic banking system based on Sharia principles is considered to be more resilient to financial shocks because of its interest-free nature (Bilal & Amin, 2015). The significant difference in average liquidity indicated that IBs have managed to meet the credit needs of these customers and maintained their positive liquidity positions, despite having made excessive loans.

The results appear consistent with the results found by Mokni et al. (2015). Based on a survey of 23 IBs and 24 CBs in the MENA region, they tested the relationship between risk management and the financial performance of the two banking models. The researchers revealed that in the MENA region, conventional and Islamic banks have been exposed to direct credit risk and they have suffered to primary liquidity risk. The findings show that the situation of IBs is mainly due to the use of traditional financial tools transferred to mitigate or alter credit risks.

Contrary to the study of Mokni et al. (2015), in our case, Table 10 revealed that CBs have held total assets much higher than the asset level of IBs (TAC= 1.319 TAI). The gap due to the age of the traditional banking sector and also to the

possession of a quality of assets that are more liquid and easily convertible into cash (PNC = 1.188PNI), but they have converted only 53.5% of their assets into liquidity in form of credits. The percentage that has been transformed and integrated into profitability is equal to (14.758). Despite the fact that the total net loan represents 53.5% of the total assets, the liquidity of CBs is very weakly correlated with profitability (0.0492) (See Table 11).

Table 10. The relative liquidity of conventional and Islamic banks

Bank type /Measurement	Net Loans	Total Assets	Total Liquidity
CBs	21209308.5M$	39628054.61M$	0.535=53.5%
IBs	17838468.33M$	30040112.4M$	0.593=59.3%
Ratio of relativity	1.188	1.319	-
	0.841	0.758	

From this allusion, we have inspired three main reflections on the characteristics of CBs. First, the latter were well in control of their credit distribution policies better than their Islamic counterparts. Secondly, the profitability of CBs has been created by other sources of products. This is because CBs have a wide variety of liquid products and resources available in the short term, including treasury bills, certificates and other marketable securities that could be converted into cash before maturity. Finally, the contradiction can be explained otherwise. In fact, the opposition between liquidity and profitability lies in abnormal liquidity (positive). Abusive transactions grow according to toxic credits, considered risky, but with a high profitability. Moreover, the application of this rule is not fair during the crisis period. This phenomenon may not have declined during the period of the crisis, but as Table 11 shown, it remained abnormally high and extended quite considerably especially since the correlation between the profitability and the solvency of the CBs is strictly negative (-0.0048).

Table 11. Correlation matrix between measures of the financial performance of CBs

IC sample	Rtc	Etc	Ltc	Stc
Measurement				
Rtc	1.0000			
Etc	-0.0193	1.0000		
Ltc	0.0492	-0.0965	1.0000	
Stc	-0.0048	-0.0344	0.3851	1.0000

On the whole, IBs are more liquid than their competitors in the financial markets where they exist, but they also need to boost their excess liquidity management capabilities. The objective of good liquidity governance is to achieve a balance between liquidity and profitability. In addition, IBs must invest their funds either in more profitable markets such as the research and development sector or gain the advantage through the launch of new products not yet discovered by CBs.

5. Conclusion

The choice between the classical and Islamic banking model by referring to the parameters of bank liquidity is not a random act, but rather the purpose of a complete rational analysis. By performing a liquidity analysis in a well-targeted single-ratio paradigm, we have built a new approach that allows for precise clarification that reflects the actual state of the financial condition of conventional or Islamic banks. The results already found in our study indicate that IBs are more liquid, they are very viable in themselves. IBs have privileged liquidity at the expense of efficiency; however, they are characterized by a systemic capacity to absorb shocks by smoothing their returns on assets (Hassoune, 2002). Islamic finance attracts Muslim and non-Muslim consumers because of its ethical foundation. Islam teaches that money must be channeled to the real economy and the production of real goods and services away from speculation. The Islamic finance system could create a more stable global financial market (Khan, 1989).

In the framework of analysis and comparison between the banks' liquidity, the depositor is considered as an entrepreneur, he/She is always looking for the maximization of his/her profits. Applicant satisfaction is a primarily dependent issue of benefits accruing to him/her, of his/her behavioral and material belief regardless of the remuneration form (Maalim, 2010). The surplus may be fixed in IBs, but it is variable in CBs. However, customer satisfaction is a proportional criterion, with some customers imposing a fixed counterpart on deposits, however, not all bank customers prefer this choice. Other depositors are convinced by the sharing of profits and losses. For this reason, the development of the Islamic banking industry in such a country requires depositors to have a higher return than that offered in the conventional banking market. IBs must focus on the development of new products and innovative financial practices to meet the investors' needs.

Furthermore, PLS financing is not popular enough with clients of IBs around the world (Ascarya &Yumanita, 2006 and Ascarya, 2010). This reflects the lack of knowledge of Islamic financial products and its benefits to the holders of capital. In the absence of uniform operating analysis, standard norms for the distribution of loans and in particular standard organization standards for PLS systems. This strategy consists of capturing a certain category of customers and depositors, who are ready to accept only moral benefits (religious or behavioral) and not tangible returns (interest). Subsequently, IBs will launch their offers. PLS is not suitable for short-term financing. The Islamic banking sector suffers from a shortage of specialists in Sharia law, control, accounting, and Islamic financial auditing. Indeed, like CBs, IBs can smooth their liquidity, either by extending the distribution of dividends to subsequent years or by retaining annual profits to transfer them to shareholders' accounts.

The lack of a single, favorable regulatory and legal framework applicable in all IBs is a constraint on the overall IBs' performance (Khan, 1995; Naughton & Naughton, 2000; Zaher & Hassan, 2001 and Sole, 2007). Some countries in the Islamic world are adopting a purely Islamic financial system. Other countries are adopting two coexisting banking systems that are independent of each other. In these countries, the integration of the necessary measures in the management of Islamic instruments and investments is more judicious and effective, also, central banks apply conventional formal and regulatory standards, while IBs subject to Sharia provisions highlight the lack of uniform auditing and accounting standards for IBs globally. For this reason, the management of instruments and the choice of investments will be less cautious. This reduces the quality of accounting information published by IBs (Archer et al., 1998 and Abu-Gabal et al., 2011). To overcome this type of problem, it is possible to implement an independent Islamic leadership within its central banks whose mission is to supervise and monitor Islamic banking fabrics.

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Notes

Note 1. Saudi Arabia, Kuwait, Bahrain, Egypt, Emirates United Arab Emirates, Jordan, Qatar, Bangladesh, Malaysia and Turkey.

Note 2. CoB : Commercial type.

Note 3. InB : Investment type.

Note 4. UnB : Universal type.

Note 5. IASB : International Accounting Standards Board.

Note 6. FASB : Financial Accounting Standards Board.

Note 7. A.A.O.I.F.I.: Accounting and Auditing Organization for Islamic Financial Institutions.

Appendix

Abbreviations' meaning:

CB: Conventional Bank

CBs: Conventional Banks

IB: Islamic Bank

IBs: Islamic Banks