I. INTRODUCTION

Islamic finance is one of the fastest growing segments of global financial industry.[2] In some countries, it has become systemically important and, in many others, it is too big to be ignored. Several factors have contributed to the strong growth of Islamic finance, including: (i) strong demand in many Islamic countries for *Shariah*-compliant products; (ii) progress in strengthening the legal and regulatory framework for Islamic finance; (iii) growing demand from conventional investors, including for diversification purposes; and (iv) the capacity of the industry to develop a number of financial instruments that meet most of the needs of corporate and individual investors. It is estimated that the size of the Islamic banking industry at the global level was close to US$820 billion at end-2008 (IFSB et al, 2010).

The countries of the Gulf Cooperation Council (GCC) have the largest Islamic banks (IBs). The market share of Islamic finance in the banking systems of the GCC countries at end-2008 was in the range of 11−35 percent, compared with 5−24 percent in 2004.[3] While Islamic banking remains the main form of Islamic finance (Figure 1), Islamic insurance companies (Takaful), mutual funds and the sukuk have also witnessed strong global growth.

The recent global crisis has renewed the focus on the

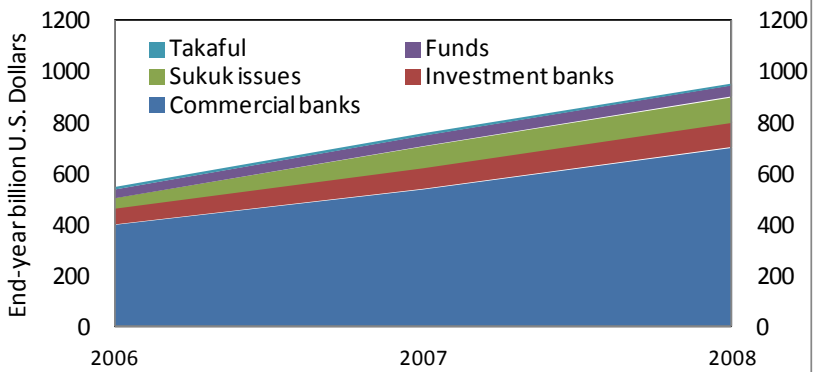
Table 1. Market Share and Growth in Assets of Islamic Banks and Conventional Banks in Selected Countries (In percent)

	Market share in 2008	Growth rate of assets (Islamic banks)	Growth rate of assets (banking system)1/	Period
Saudi Arabia 2/	35.0	33.4	19.0	2003-2008
Bahrain 3/	29.9	37.6	9.6	2000-2008
Kuwait	29.0	28.3	19.0	2002-2008
UAE	13.5	59.8	38.1	2001-2008
Qatar	11.5	65.8	38.1	2002-2008
GCC average	23.8	45.0	24.8	
Jordan	10.3	20.6	11.2	2001-2008
Turkey	3.5	41.0	19.0	2001-2008
Malaysia	17.4	20.0	14.0	2000-2008

Sources: Central banks and Islamic banks' annual reports.

1/ Including Islamic banks.
2/ Including Islamic windows.
3/ Growth rate is caculated for the total of wholesale and retail while market share is for retial only.

Figure 1. Global Assets of Islamic Finance



Source: International Financial Services London.

[2] The establishment of modern Islamic financial institutions started three decades ago. Currently, there are at least 70 countries that have some form of Islamic financial services; almost all major multinational banks are offering these services. See Imam and Kpodar (2010) for more details on how Islamic banking spread.

[3] Oman is excluded since it does not have Islamic banks.

relationship between Islamic banking and financial stability and, more specifically, on the resilience of the Islamic banking industry during crises. Industry specialists and academics have taken note of the strong growth in Islamic banking in recent years. Some have argued that the lack of exposure to the type of assets associated with most of the losses that many conventional banks (CBs) experienced during the crisis—and the asset-based and risk-sharing nature of Islamic finance—have shielded Islamic banking from the impact of the crisis. Others have argued that IBs, like CBs, have relied on leverage and have undertaken significant risks that make them vulnerable to the _second round effect' of the global crisis.

Comparing the performance of IBs to CBs globally would suggest that IBs performed better, given the large losses incurred by CBs in Europe and the US as a result of the crisis. However, such a comparison would not lead to reliable conclusions about financial stability and the resilience of the Islamic banking sector because it would not allow for appropriate control for varying conditions across financial systems in countries where IBs operate. For example, this comparison might not reflect the moderate impact of the crisis on the GCC, Jordan, and Malaysia.[4]

This paper looks at the actual performance of IBs and CBs in countries where both have significant market shares, and addresses three broad questions: (i) have IBs fared differently than CBs during the financial crisis?; (ii) if so, why?; and (iii) what challenges has the crisis highlighted as facing IBs going forward? To answer the first question, the paper focuses on the performance of the two groups of banks at the country level to control for heterogeneity across countries, including with respect to regulatory frameworks, macro shocks, and policy responses.[5] To address the second question, the paper examines a set of bank-specific variables and macro variables to explain the performance of the banks included in the sample.

To assess the impact of the crisis, the paper uses bank-level data covering 2007−10 for about 120 IBs and CBs in eight countries—Bahrain (including offshore), Jordan, Kuwait, Malaysia, Qatar, Saudi Arabia, Turkey, and the UAE. These countries host most IBs (more than 80 percent of the industry, excluding Iran) and have a large CB sector. The key variables used to assess the impact are the changes in profitability, bank lending, bank assets, and external bank ratings.

The evidence shows that, in terms of profitability, IBs fared better than CBs in 2008. However, this was reversed in 2009 as the crisis hit the real economy. IBs' growth in credit and assets continued to be higher than that of CBs in all countries, except the UAE. Finally,

[4] See IFSB et al (2010) for such a comparison.

[5] While IBs dominate the banking sectors in Iran and Sudan, these countries were not included in the analysis because the focus of this paper is on comparing the performance of the two groups of banks in the same country.

with the exception of the UAE, the change in IBs' risk assessment, as reflected in the rating of banks by various rating agencies, has been better than or similar to that of CBs. Hence, IBs showed stronger resilience, on average, during the global financial crisis.

Factors related to IBs' business model helped contain the adverse impact on profitability in 2008, while weaknesses in risk-management practices in some IBs led to larger declines in profitability compared to CBs in 2009. Thanks to their lower leverage and higher solvency, IBs were able to meet a relatively stronger demand for credit and maintain stable external ratings.

The rest of the paper is organized as follows: Section II provides an overview of the main features of Islamic banking, highlighting key differences with conventional banking. Section III describes the sample and the initial conditions of the two groups of banks before the crisis. Section IV assesses the actual impact of the crisis, and section V examines the main factors that could explain differences in performance between IBs and CBs. Section VI discusses the key challenges facing IBs going forward. Finally, Section VII summarizes the main conclusions and provides policy recommendations.

II. THE ISLAMIC BANKING MODEL

A. What is Different about the Islamic Banking *Model*?

IBs play roles similar to CBs. They are major contributors to information production and thereby help address the asymmetric information problem (adverse selection and moral hazard).[6] They also reduce transaction costs and facilitate diversification for small savers and investors. In conducting their business, IBs manage risks arising from the asymmetric information problem as well as operational, liquidity and other types of risks. The main difference between Islamic and CBs is that the former operate in accordance with the rules of *Shariah*, the legal code of Islam.

The central concept in Islamic banking and finance is *justice*, which is achieved mainly through the sharing of risk. Stakeholders are supposed to share profits and losses. Hence, interest or (*Riba*) is prohibited.[7] While justice stems usually from a religious or ethical basis, ethical finance is not a new concept. As Subbarao (2009) mentioned, *"People often forget that the godfather of modern capitalism, and often called the first economist—Adam Smith—*

[6] Asymmetric information occurs when buyers or sellers are not equally informed about the quality of what they are buying and selling. The asymmetry always runs in the same direction, with the security issuer (borrower or party receiving financing) having more information than the investor (lender or party providing financing) about the issuer's (borrower or receiver of financing) future performance.

[7] The discussion here refers to justice in economic sense and not just to the exploitation of poor debtors by rich creditors. For more details, see El-Gamal (2001).

was not an economist, but rather a professor of moral philosophy. Smith had a profound understanding of the ethical foundations of markets and was deeply suspicious of the "merchant class" and their tendency to arrange affairs to suit their private interests at public expense…. In short, Smith emphasized the ethical content of economics, something that got eroded over the centuries as economics tried to move from being a value-based social science to a value-free exact science."[8]

B. What is Different about Islamic Banking Intermediation?

While conventional intermediation is largely *debt-based*, and allows for *risk transfer*, Islamic intermediation, in contrast, is *asset-based,*[9] and centers on *risk sharing (Table 2)*.

Table 2. Risk Sharing and Risk Transfer

IBs Risk Sharing	CBs Risk Transfer
Sources of funds: Investors (profit sharing investment account (PSIA) holders) share the risk and return with IBs (Box 1). The return on PSIA is not guaranteed and depends on the bank's performance.	**Sources of funds:** Depositors transfer the risk to the CB, which guarantees a pre-specified return.
Uses of funds: IBs share the risk in Mudharabah and Musharakah contracts and conduct sales contracts in most other contracts (see Appendix I for a discussion of the sources and uses of funds for IBs).	**Uses of funds:** Borrowers are required to pay interest independent of the return on their project. CBs transfer the risk through securitization or credit default swaps. Financing is debt-based.

From a practical standpoint, IBs vary in terms of the level of risk sharing. For example, on the funding side, profit sharing investment accounts (PSIAs) are being replaced in a number of IBs by time deposits based on reverse Murabahah transactions. These deposits do not have the risk-sharing features of PSIAs, since the return on them is guaranteed. In addition, demand deposits, which do not share profits or losses, represent a significant part of deposits in some banks (e.g., in Saudi Arabia). On the asset side, risk sharing (Mudharabah, Musharakah) is the exception rather than the rule: most financing is in the form of Murabahah contracts (cost plus financing) or installment sales (70−80 percent), making credit risk the main risk faced by IBs, similar to CBs. The Capital Adequacy and Risk

[8] See Subbarao (2009), pp. 4−5.

[9] This means that an investment is structured on exchange or ownership of assets, placing Islamic banks closer to the real economy compared to conventional banks that can structure products that are mainly notional or virtual within an infinite range.

Management standards issued by the Islamic Financial Services Board (IFSB)[10] suggest that the type and size of financial risks in *Shariah*-compliant contracts are not significantly different from those in conventional contracts.

One key difference between CBs and IBs is that the latter's model does not allow investing in or financing the kind of instruments that have adversely affected their conventional competitors and triggered the global financial crisis. These include toxic assets[11], derivatives, and conventional financial institution securities. Appendix I discusses IBs' assets and liabilities in greater detail.

C. What are the Implications for Risks, Regulations and Supervision?

Like CB contracts, IB contracts involve credit and market risks, and IB activities create liquidity, operational, strategic, and other types of risks. Interest-rate-type risk is very limited, but hedging instruments are also largely unavailable. Managing liquidity is more challenging in IBs, given the limited capacity of many IBs to attract PSIAs since the return on these accounts is uncertain and the infrastructure and tools for liquidity risk management by IBs is still in its infancy in many jurisdictions. Similarly, the dependence on bank deposits is limited due to a less active market and the absence of an interbank rate, except under the limited reverse Murabahah. While IBs usually maintain higher liquidity buffers to address this risk, limited tools (e.g. sovereign sukuks) for making use of this liquidity prevent IBs from operating at a level playing field with CBs.

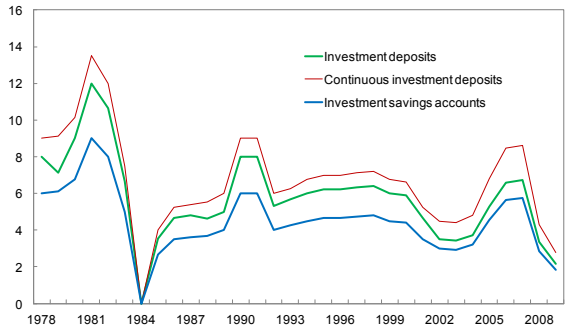
Since IBs accept deposits and are growing in size, they can be a source of systemic risk, and their regulation is as important as that of CBs. The IFSB Capital Adequacy and Risk Management standards provide a detailed analysis of contracts, their risks, risk-mitigating factors, and solvency assessments. From a practical point of view, IBs are subject to similar regulatory and supervisory regimes and levels.

[10] More information about the IFSB is available on www.ifsb.org.

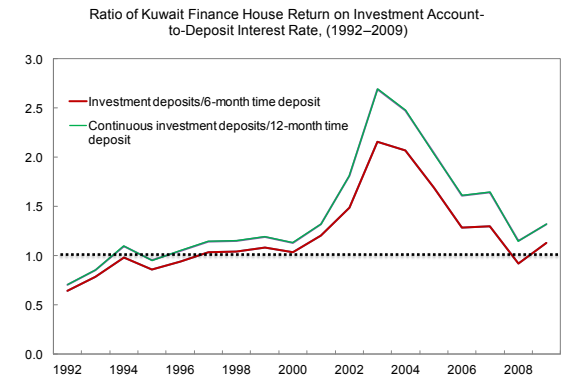
[11] The term toxic assets refers to certain financial assets whose value has fallen significantly and for which there is no longer a functioning market, so that such assets cannot be sold at a price satisfactory to the holder. The term has become common during the financial crisis of 2007–10,in which they played a major role (Wikipedia). Complicated financial assets such as some collateralized debt obligations and credit default swaps falls in this category. These assets are not Shariah compliant and hence IBs cannot invest in them.

BOX 1. RISK SHARING AND THE RETURN TO INVESTORS IN ISLAMIC BANKS: THE CASE OF KUWAIT FINANCE HOUSE

In the case of Kuwait Finance House (KFH), the risk-sharing concept has translated into (i) zero return in 1984 with the crash in the real estate market; (ii) a low return in the early 1990s after the Iraqi invasion of Kuwait; and (iii) a significantly higher return in the 2000s with the economic boom. This has provided the bank with an additional buffer against adverse market conditions and has smoothed the return on equity.



Sources: Kuwait Finance House, various annual reports.



Sources: Central Bank of Kuwait; and Kuwait Finance House.

The return for investment account holders [1] (IAHs) of KFH illustrates well how the concept of risk sharing works in practice on the liability side. During 1978−1983, IAHs' return was high, and increased with higher economic growth and rising asset prices associated with the oil boom. However, in 1984, with the end of the real estate boom, KFH had to build large provisions due to losses in real estate investments and recorded zero return. Subsequently, return on investment returned to normal levels.

The chart comparing KFH investment account holders'return [2] to CB interest rates on deposits provides further illustration. After Kuwait's liberation in 1991 and until 1994, IAH's return was lower than that on deposits, reflecting difficult market and economic conditions after the war. During the rest of the 1990s, IAH's return was very close to the interest rate on deposits in CBs, reflecting normalization of economic conditions and competition in the market. The economic boom in the 2000s boosted the profitability of the banking sector and hence translated into significantly higher returns to IAHs (two to three times the interest rates offered by CBs).

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[1] Depositors' accounts comprise non-investment and investment deposits. Non-investment (safe keeping) deposits take the form of current accounts, which are not entitled to any profits nor do they bear any risk of loss as they can be withdrawn by depositors on demand. Investment deposits comprise deposits for unlimited periods, limited periods, and savings accounts. Unlimited investment deposits are initially valid for one year and are automatically renewable for the same period unless notified to the contrary in writing by the investor. Investment deposits for a limited period are initially valid for one year and are renewable only by specific instructions from the depositors concerned. Investment savings accounts are valid for an unlimited period. Investment deposits receive a predefined proportion of profits or bear a share of the losses based on the results of the financial year. KFH generally invests approximately 90 percent of investment deposits for an unlimited period, 80 percent of the investment deposits for a limited period, and 60 percent of the investment savings accounts. The remaining non-invested portion of these investment deposits is guaranteed to be paid back to depositors.

[2] Lack of deposit interest rate data hinders comparison before 1992.

III. DATA, SAMPLE, AND INITIAL CONDITIONS

A. Data and Sample

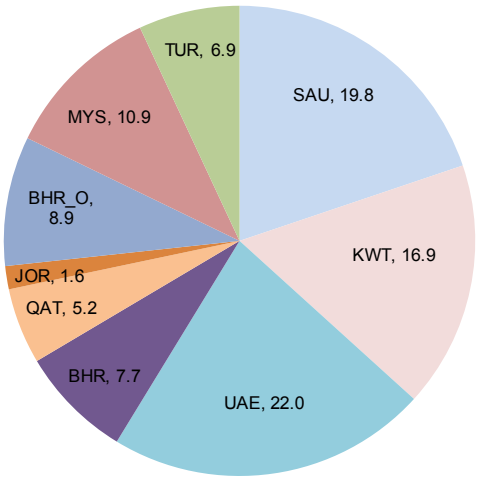
Comparing the impact of the crisis on the two groups of banks is a challenging task, for two main reasons. First, detailed data on the performance of banks in countries where IBs represent a significant portion of the banking system are not readily available. Second, the impact of the crisis depends largely on the pre-crisis sectoral and market excesses, vulnerabilities in the banking system, and the policy response in each country, which complicates cross-country comparisons. These challenges help explain why attempts to date to assess the impact of the recent financial crisis on IBs have been mostly descriptive (Box 2).

To address the lack of adequate information, bank-level data were collected for CBs and IBs in Bahrain (including offshore), Jordan, Kuwait, Malaysia, Qatar, Saudi Arabia, Turkey, and the UAE.[12] These countries were chosen because of the importance of IBs in their banking systems and data availability. The database includes about 120 CBs and IBs, of which about one-fourth are Islamic. The sample covers over 80 percent of IBs globally if Iran is excluded. Appendix II discusses in more detail the database used in the analysis.

Countries differ in terms of Islamic banking model and market structure. For example, in Jordan, Kuwait, and Turkey, CBs do not have Islamic windows. The Bahraini wholesale (offshore) banks are largely involved in investment activities and are not regulated as rigorously as domestic (retail) banks. Indeed, by covering Bahrain offshore activities, the sample includes an important part of investment banking. The Malaysian IBs included in the sample are all subsidiaries of CBs. Five countries (Turkey, Saudi, the UAE, Malaysia, and Kuwait) represent about 85 percent of the sample total assets and about 77 percent of the IB market share (Figure 2). Islamic banking activities conducted by CBs are not captured in our sample due to lack of reliable data.

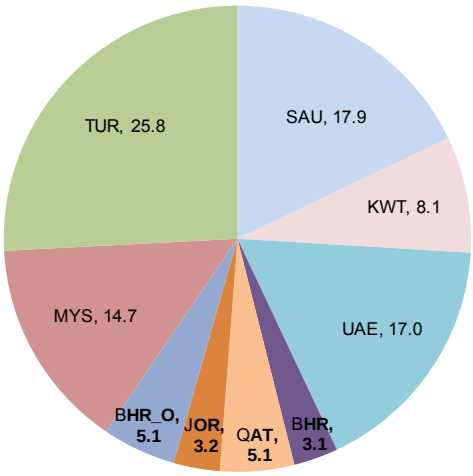
[12] The main sources used in building the database include banks‘ annual and interim reports, Zawya database, and information from rating agencies.

Figure 2a. Islamic Banks Assets
(Market Share, in percent, 2008)



Sources: Bank data; and authors' calculations.

Figure 2b. Banking System Assets
(Market Share, in percent, 2008)



Sources: Bank data; and authors' calculations.

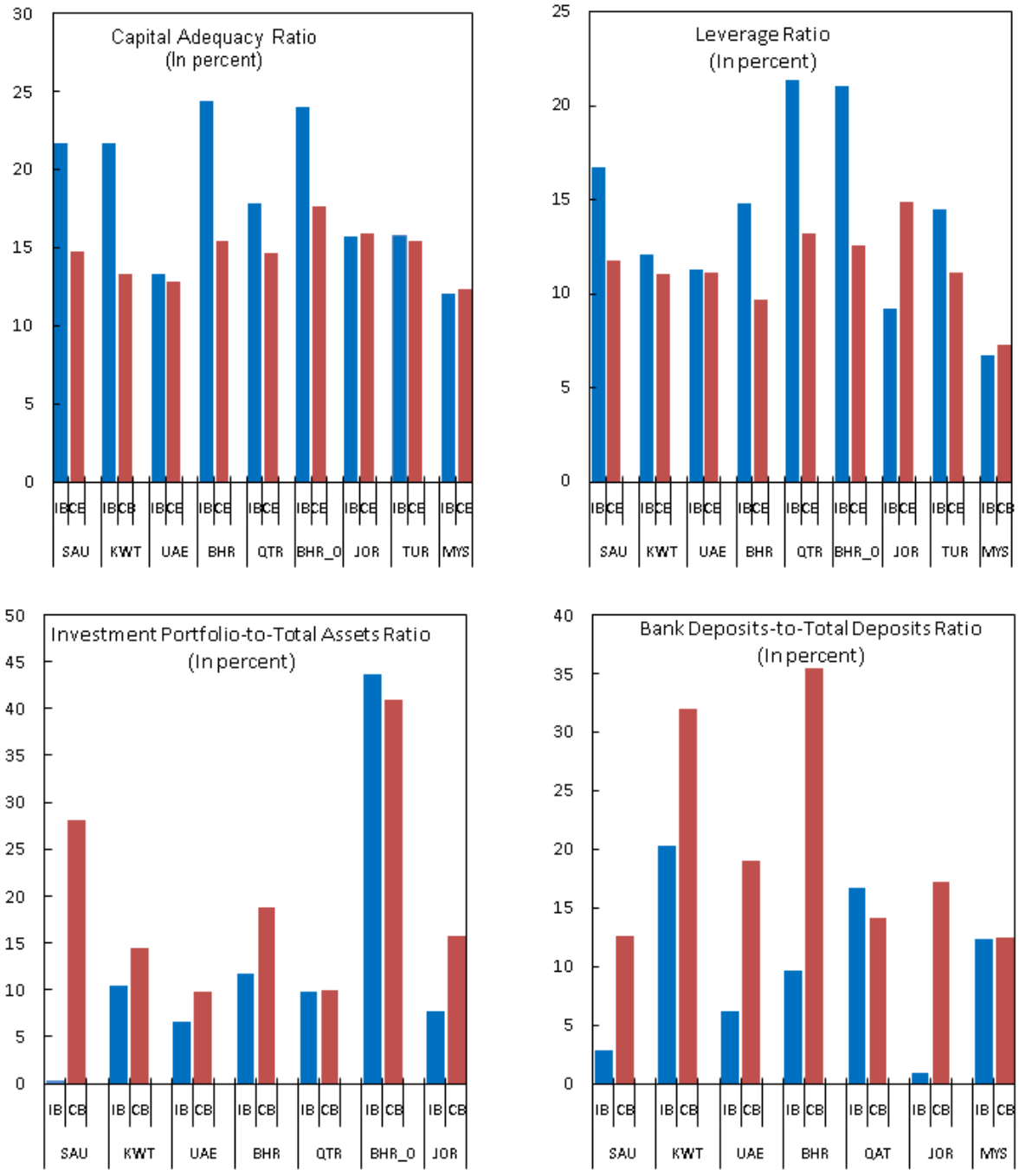
B. Initial Conditions

Figure 3 shows that, on average, IBs have higher capital adequacy ratios, are less leveraged (i.e., have higher capital-to-assets ratio), have smaller investment portfolios, and rely less on wholesale (banks) deposits. These data confirm the features of the IB model discussed in Section II. Asset-based financing, weaker interbank markets, and restricted lender-of-last-resort limit leverage and reliance on wholesale deposits. Restrictions on investments (e.g., no investments in toxic assets, bonds or conventional financial institution securities), and the lack of hedging instruments limit the size of IB investment portfolio. Figure 4 shows that average profitability of IBs, measured by either average return on average assets or average return of average equity, for 2005–07 (pre-crisis) was clearly higher than that of CBs during the same period.

Figure 5 shows that, on average, IBs had slightly higher nonperforming loan ratios pre-crisis. This could be due to the fact that IBs have limited capacity to evergreen loans, given their inability to lend in cash. It also reflects the limited exposure to the risk-free government sector and relatively higher exposure to consumer sector, which usually has a higher default rate. Table 3 shows that IBs‘ exposure to different economic sectors is similar to that of CBs, with some exceptions. While IBs‘ exposure to the real estate and construction sectors are lower in Saudi Arabia, Bahrain, Jordan, and Malaysia, it is significantly higher than the system‘s average in Qatar, Turkey, and the UAE. In the latter, it exceeded limits imposed by law for banks, preventing CBs level playing field with IBs and increasing risk concentration. However, the data in Table 3 must be interpreted with caution since the definition of sectors varies across countries. For example, in some countries, the classification is based on the

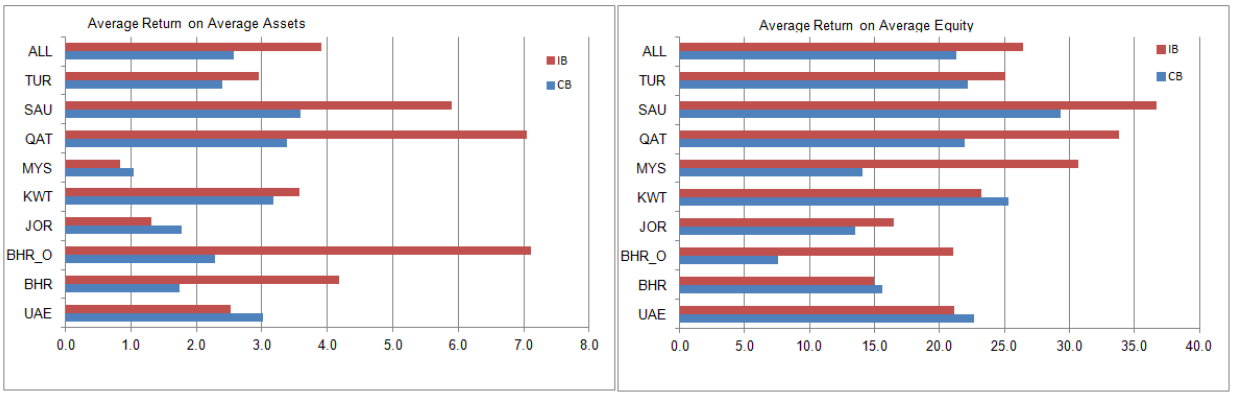
type of borrower, rather than the use of loans. In addition, in some countries, mortgage loans are part of real estate loans, while in others they are lumped with consumer loans while real estate loans include mainly commercial real estate.

Figure 3: Initial Conditions, 2008



Sources: Authorities; Bank financial statements; Zawya; and authors' estimates.

Figure 4. Return on Equity and Return on Assets, 2005 – 07



Source: Bankscope, banks' annual reports, and Fund staff calculations.
1/ Weighted average by asset size.

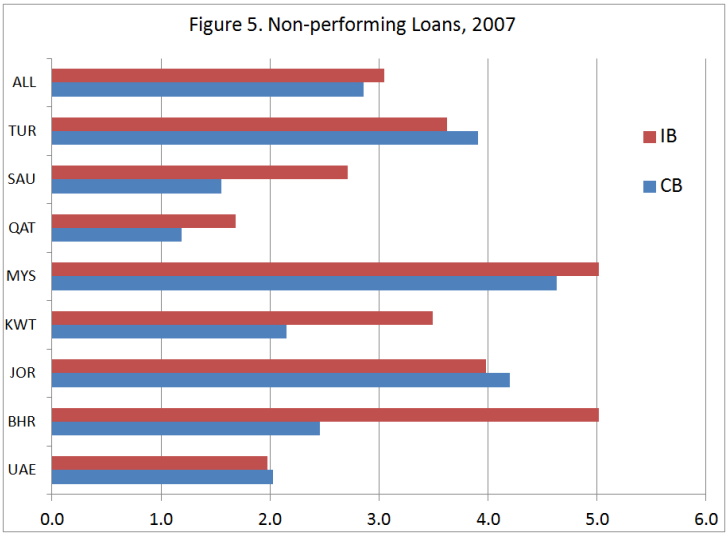


Table 3: A Comparison Between IBs' and CBs' Sectoral Distribution of Credit (In percent, 2008)

	Saudi Arabia		Kuwait		UAE		Bahrain		Qatar		Jordan		Malaysia		Turkey	
	IB	CB	IB	CB	IB	CB	IB	CB	IB	CB	IB	CB	IB	CB	IB	CB
Consumer loans	35.1	18.9	12.0	12.8	31.0	24.2	22.8	32.0	26.0	25.0	16.9	15.6	22.6	11.6	15.1	28.1
Real estate and construction	5.5	8.3	18.9	15.4	26.0	18.4	12.1	19.7	38.3	19.2	17.8	21.1	22.4	37.0	19.7	5.2
Public sector	15.5	9.8	0.0	9.0	7.1	14.5	1.3	6.8	5.9	27.5	0.0	7.3	0.0	0.5	0.0	0.0
Trade	27.0	23.6	28.5	5.4	7.8	10.0	15.7	21.6	21.4	8.1	57.8	14.2	0.0	20.6	9.3	12.7
Others	16.9	39.4	40.6	57.4	28.1	32.9	48.0	19.9	8.5	20.2	7.5	41.8	55.0	30.3	55.9	54.1

Sources: Banks' financial statements.

BOX 2. ISLAMIC BANKING IN THE CONTEXT OF THE CRISIS: A BRIEF OVERVIEW OF RECENT ANALYSES

There have been limited assessments of the impact of the global crisis on IBs, but the few that have been undertaken differ starkly in their conclusions.

Some have suggested that adherence to Islamic principles has helped shield Islamic banks from the impact of the crisis. These principles include the requirement of ethical conduct in doing business; the risk-sharing principle; the availability of credit primarily for the purchase of real goods and services; restrictions on the sale of debt, short sales, and excessive uncertainty; and the prohibition to sell assets not owned.

In her address at the conference on Islamic finance held in October 2009 in Istanbul, Governor Zeti Akhtar Aziz of the Central Bank of Malaysia stressed that the inherent strengths of Islamic finance, including the close link between financial transactions and productive flows and the built-in dimensions of governance and risk management, had contributed to its viability and resilience. These views were echoed by Governor Durmuş YIlmaz of the Central Bank of Turkey, who noted that there was a lack of a consensus view on the role of Islamic finance on price and financial stability, but argued that during the recent crisis, Islamic financial institutions had demonstrated significant resilience. In particular, he noted that these institutions offer products that limit excessive leverage and disruptive financial innovation, thereby ensuring macroeconomic stability.

Chapra (2008, 2009) and Saddy (2009) argue that claims of adherence to Islamic principles by IBs are not borne out by the facts and, as a result, they were not immune to the crisis. Some IBs, like CBs, have relied on leverage and have undertaken significant risks. Islamic banks have funded western corporations, some of which have risky profiles and low credit ratings, without conducting the needed due diligence. While such companies would not have been considered bankable by CBs, IBs had excess liquidity before the flare-up of the international crisis and the drop in oil prices, and were eager to place the funds quickly and maximize profits. As a result, some of the sukuk issued by entities with low ratings became ―junk sukuk". The securitization of these sukuks involves a process of bundling portfolios of toxic assets for sale to Islamic investors in the wholesale market, with little or no disclosure. Islamic financial institutions under stress have reverted to the same measures as CBs to stave off failure.

The Economist (2009) and El-Said and Ziemba (2009) agree that IBs have avoided the subprime exposure, but note that they are subject to the ‗second round effect' of the global crisis. They argue that because the global financial crisis originated from sub-prime mortgage portfolios that were spun off into securitized instruments subsequently offered as investments, IBs were not affected because Islamic finance is based on a close link between financial and productive flows. However, the protracted duration of the crisis affected IBs as well, not because these institutions have a direct exposure to derivative instruments, but simply because Islamic banking contracts are based on asset-backed transactions. With the global economic downturn, property markets have seen a decline in a number of countries where IBs have a significant presence. This carries negative implications for these banks as a large number of contracts are backed by real estate and property as collateral. In such a situation, credit risk arises from the erosion in the value of the collateral, especially in highly leveraged countries like the UAE (Dubai) and Qatar, where a large share of financing was channeled to the once-booming real estate market.

IV. What Has Been the Actual Impact of the Crisis on IBs and CBs so Far?

To assess the impact of the crisis, the focus was placed on the performance of both IBs and CBs at the country level in order to control for pre-crisis excesses, vulnerabilities, and policy responses. Four key indicators were used to assess the impact of the crisis on the two groups of banks, namely, changes in (i) profitability; (ii) bank lending; (iii) bank assets; and (iv) bank ratings. Changes in profitability constitute the key variable for assessing the impact of the crisis. In addition, in an environment of deleveraging and tight credit conditions that exacerbate the impact on the real sector and give rise to a lending-real-sector vicious cycle, bank lending and asset growth provide very useful indicators of the contribution of IBs and CBs to financial and macroeconomic stability. Finally, bank ratings constitute a forward-looking indicator for bank risk.

A. Profitability

Figures 6-7 and Table 4 (Part 1) compare the change in profitability, where profitability is defined as the profit level in dollars, of IBs and CBs in the eight countries. In 2008, IBs fared better (highlighted in green) in all countries, except Qatar, the UAE, and Malaysia. In Saudi Arabia, Bahrain offshore, Jordan, and Turkey, the change in profitability was significantly more favorable for IBs (the difference in the weighted average change in profitability was statistically significant).[13] The banking sector in these economies represents about 52 percent of the sample, while IBs hold about 37 percent of IBs assets in the sample (Figures 2a-2b above). An aggregate test for the whole sample indicates that, on average, IBs fared better than CBs. The picture is reversed in 2009, with IBs faring clearly worse in three countries (highlighted in yellow). In Bahrain (including offshore), and the UAE, the profitability of IBs declined significantly more than that of CBs, while in Qatar the increase in IB‘s profitability was significantly lower than that of CBs. The banking sector in these countries represents about 30 percent of the sample, and IBs hold about 44 percent of IBs‘ assets in the sample. An aggregate test for the whole sample indicates that, on average, IBs fared worse than CBs.

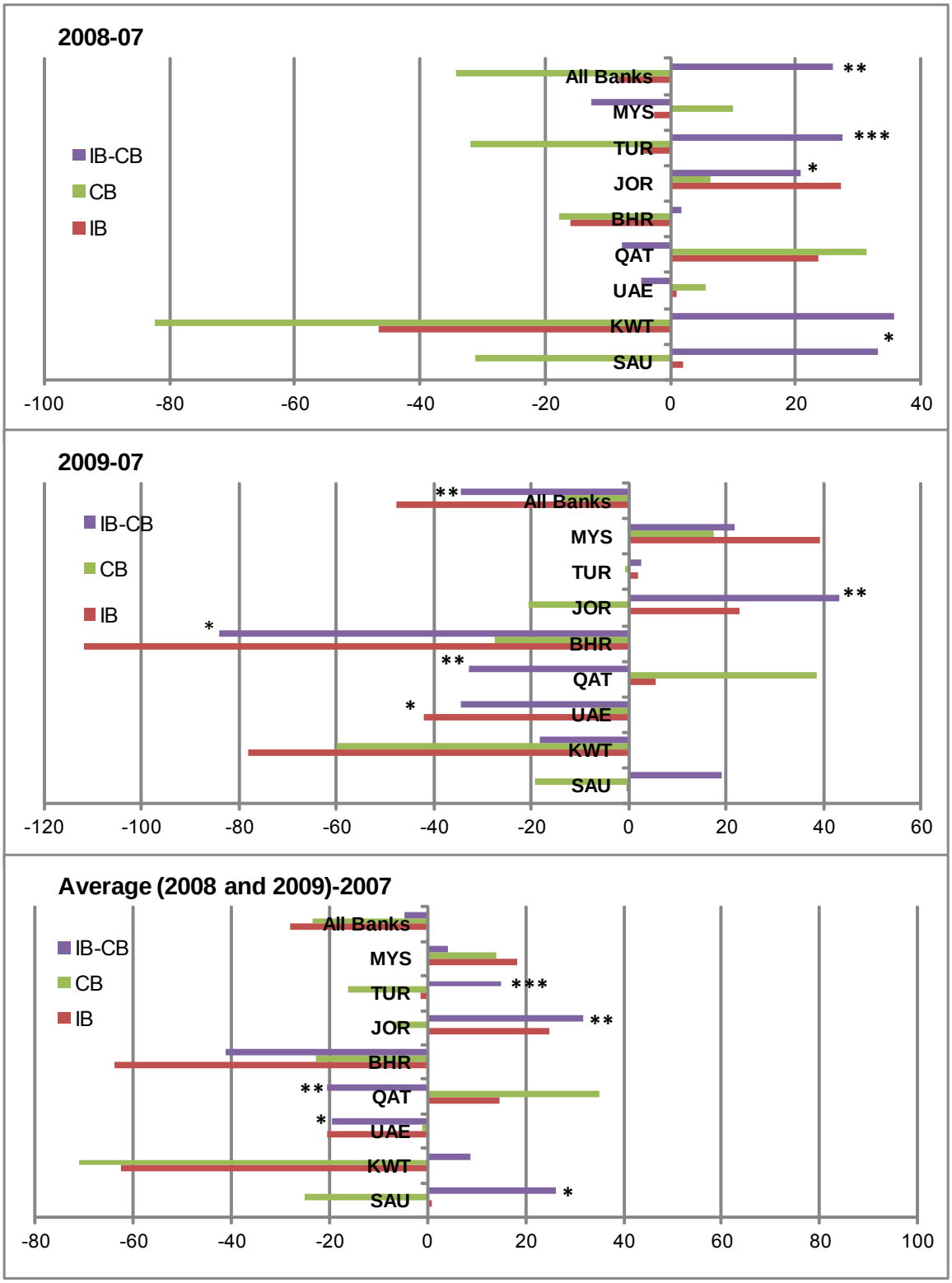
A comparison of the average profitability in 2008 and 2009 to its 2007 level (cumulative impact) shows that IBs fared better in all countries, except Bahrain, Qatar, and the UAE. In four countries (Bahrain offshore, Jordan, Saudi Arabia, and Turkey), the change in profitability was significant in favor of IBs. The banking sector in these countries represents 52 percent of the sample, and IBs in these countries represent about 37 percent of IBs‘ assets in the sample. In Qatar and the UAE, IBs fared relatively worse than CBs. The banking sector in these countries represents 22 percent of the sample, and IBs hold about 27 percent of IBs‘ assets. An aggregate test for the whole sample indicates that, on average, the difference between the cumulative impacts of the crisis on the profitability of the two groups of banks is insignificant.

[13] *, ** and *** indicate that the hypothesis that the difference between IBs' weighted average and CBs' weighted average is greater than zero is significant at 10, 5, and 1 percent significance levels, respectively.

This suggests that IBs have been affected differently during the crisis. The initial impact of the crisis on IBs‘ profitability in 2008 was limited. However, with the impact of the crisis moving to the real economy, IBs in some countries faced larger losses compared to their conventional peers.

With IBs having higher average returns on average assets and higher average return on average equity (Figure 4) during the boom period (2005–07), one would expect a larger decline in profitability for IBs if this higher profitability was due to greater risk-taking, such that average profitability over the business cycle is similar. However, Figures 9a and 9b show that the average return on assets and average return on equity for the two groups of banks in 2008–09 were very close, on average, suggesting higher profitability, on average, over the business cycle (2005−09). Figure 8 shows that the nonperforming loan ratio for IBs remained slightly higher than that for CBs. In Bahrain, both IBs‘ and CBs‘ NPLs doubled, maintaining the large difference between the two groups of banks.

Figure 6. Change in Profitability
(In percent)



Sources: Zawya Dow Jones; bank annual reports; and authors' calculations.

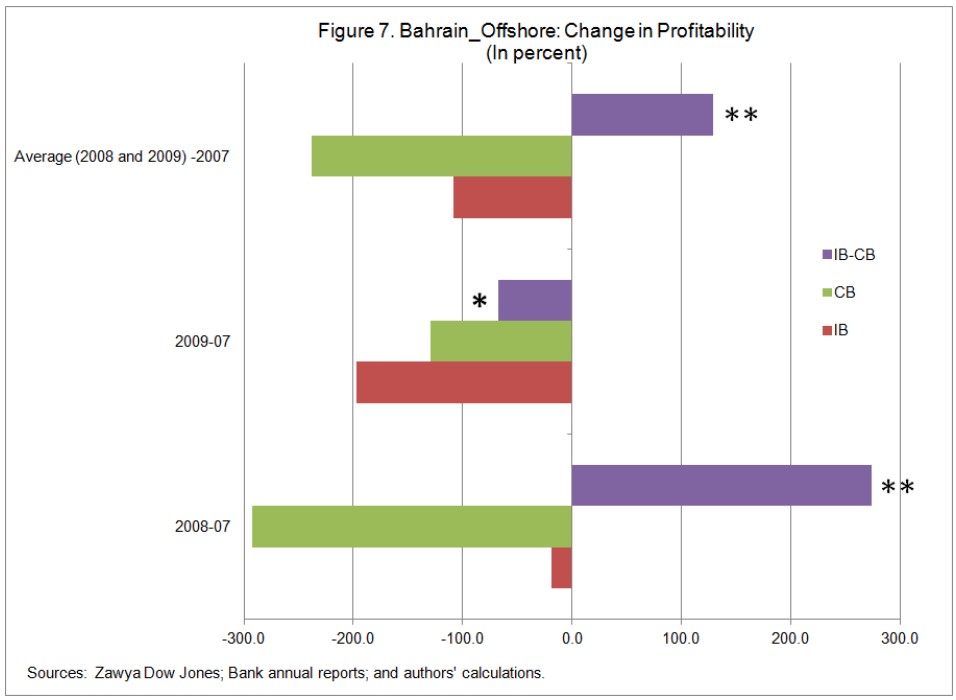
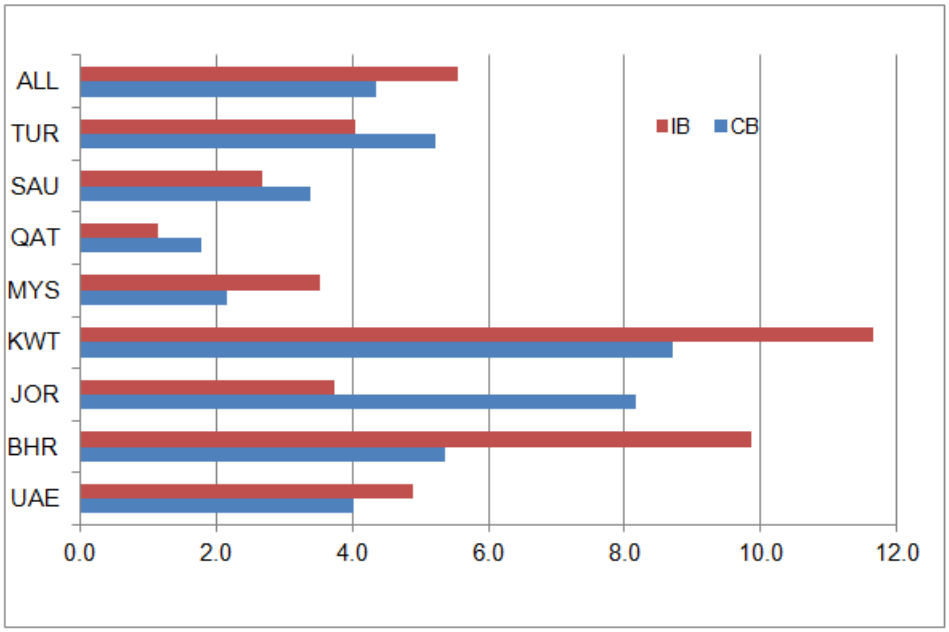
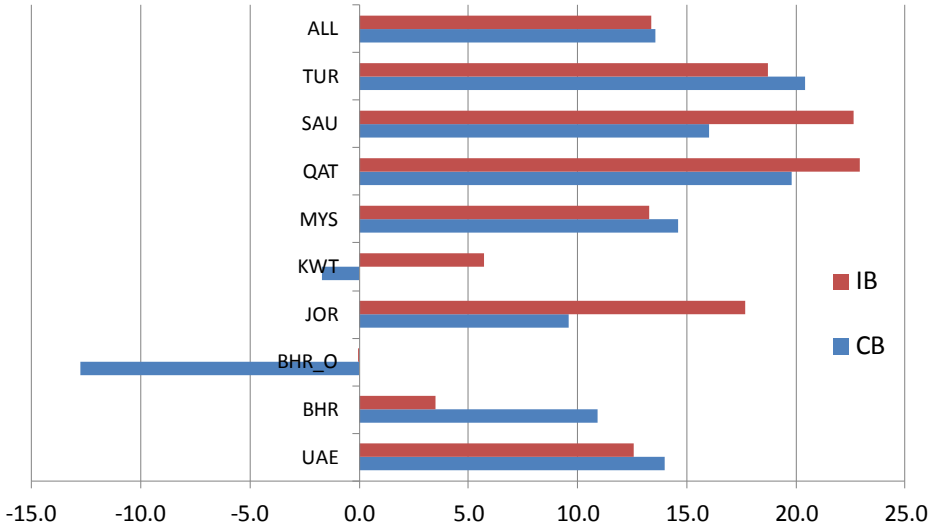


Figure 8. Non-Performing Loans, 2009



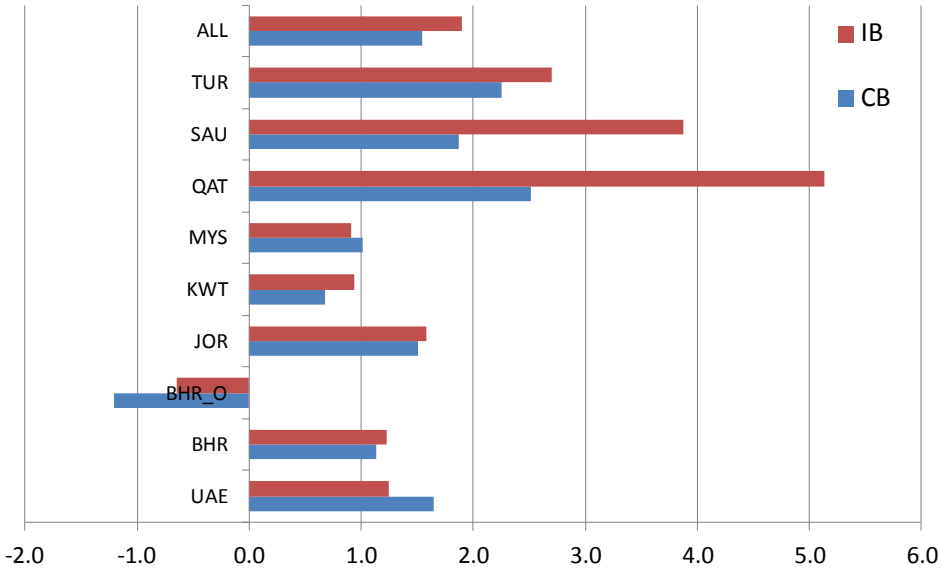
Sources: Bankscope, banks' annual reports, and authors' calculations.

Figure 9a. Average Return on Average Equity, 2008–09



Sources: Bankscope; banks' annual reports; and authors' calculations.

Figure 9b. Average Return on Average Assets, 2008–09



Sources: Bankscope; banks' annual reports; and authors' calculations.

B. Credit Growth

Table 4 (Part 2) and Figures 1 and 3a in Appendix II show that IBs have maintained stronger credit growth compared to CBs in almost in all countries in all years. On average, IBs‘ credit growth was twice that of CBs during 2007–09. The strong credit growth suggests that (i) IBs‘ market share is likely to continue to increase going forward and (ii) IBs contributed more to

macro stability by making more credit available. The fourth line of Part 2 in Table 4 examines the change in the rate of credit growth. In general, IBs‘ credit growth was less affected by the crisis, with the exception of those in Bahrain and Qatar. While international experience shows that strong credit growth was usually followed by a large decline in credit, this was not the case for IBs. However, very high credit growth rate could be at the expense of strong underwriting standards. Hence, supervisors should monitor very high credit growth in IBs as well as in CBs.

C. Asset Growth

Table 4 (Part 3) and Figures 2 and 3b in Appendix II show that IBs have maintained stronger asset growth compared to CBs in almost all countries. On average, IBs‘ asset growth was more than twice that of CBs during 2007–09. This strong asset growth indicates that (i) IBs‘ market share is likely to continue to increase going forward, and (ii) IBs were less affected by deleveraging. The fourth line of Part 3 in Table 4 shows the change in the rate of asset growth, which suggests that, in general, IBs‘ asset growth decelerated faster than that of CBs. Detailed consolidated data is not available to explain this deceleration in asset growth. However, two potential factors could be considered. First weaker performance for IBs in 2009 could be a reason behind the decline in asset growth rate in some countries (e.g. Bahrain). In addition, the liquidity support in the form of government deposits is easier to be directed to CBs given the easiness of auctioning government deposits to CBs[14].

D. External Rating

Changes in ratings were calculated based on the ratings of foreign long-term debt by three external rating agencies (Fitch, Moody‘s and S&P). The choice of long-term debt sought to ensure the largest possible coverage of banks. The paper compares pre-crisis (before September 2008) ratings with April 2010 ratings. The pre-crisis and April 2010 ratings of each bank were mapped to a 1-year probability of default value according to Moody‘s Average Cumulative Issuer Default Rates scale. The change in ratings corresponds to the change in the average probability of default as identified by three external rating agencies. External ratings were available for about 70 banks in the sample.

Table 4, Part 4 compares the ratings for banks in the sample countries. With the exception of the UAE, the change in IBs‘ ratings has been more favorable or similar to that of CBs. In Qatar and Saudi Arabia, the financial crisis did not change rating agencies‘ views about the capacity of banks to meet their long-term obligations. This in part reflects the support that banks could receive from the public sector. The fact that almost all IBs in Malaysia are subsidiaries of CBs explains the absence of an independent rating for IBs in this case.

[14] CBs receive higher share of public sector deposits in many countries. For example, public sector deposits in Jordan Islamic banks (largest IBs in Jordan) where about 1.5 percent of total deposits while public sector deposits averaged 8 percent in the banking system deposits in 2008.

E. Did We Capture the Full Impact?

Given that the impact of the crisis is still unfolding, these results should be considered provisional. The increase in nonperforming loans is likely to continue well into 2010. Losses due to the restructuring of Dubai debt and the crisis in Europe are likely to be reflected in 2010. The delay in recognizing the deterioration in asset quality, either because of banks' debt rescheduling/restructuring or a relaxation of classification and provisioning requirements,[15] adds to the problem of obtaining a complete picture.

[15] CBs have more flexibility in debt restructuring given that they can provide their customers with cash (liquidity), which facilitates compliance with regulatory requirements for debt rescheduling /restructuring. Turkey relaxed the classification and provisioning requirements during the crisis.

Table 4. The Impact of the Crisis on Profitability, Credit Growth, Assets Growth, and Ratings for Islamic (IB) and Conventional (CB) Banks (2008–10)1/

Part 1: Change in Profitability (In percent) 1/

	Saudi Arabia		Kuwait		UAE		Qatar		Bahrain		Bahrain off-shore		Jordan		Turkey		Malaysia		All Banks	
	IB	**CB**	**IB**	**CB**	**IB**	**CB**	**IB**	**CB**	**IB**	**CB**	**IB**	**CB**	**IB**	**CB**	**IB**	**CB**	**IB**	**CB**	**IB**	**CB**
2008-2007	2.0 *	-31.1	-46.5	-82.3	1.1	5.7	23.5	31.4	-16.0	-17.7	-19.2 ***	-292.8	27.1 *	6.4	-4.5 ***	-31.9	-2.6	10.1	-8.3 **	-34.1
2009-2007	-0.1	-19.2	-78.3	-60.1	-42.2 *	-7.6	5.6 **	38.4	-111.8 *	-27.7	-197.5 *	-129.7	22.7 **	-20.4	1.9	-0.6	39.2	17.4	-47.9 **	-13.4
Avg (2008-2009) -2007	0.9 *	-25.2	-62.4	-71.2	-20.6 *	-1.0	14.6 **	34.9	-63.9	-22.7	-108.3 **	-237.8	24.9 **	-7.0	-1.3 ***	-16.3	18.3	14.1	-28.1	-23.4
Number of banks (Max)	2.0	9.0	2.0	6.0	5.0	14.0	2.0	6.0	5.0	6.0	9.0	10.0	2.0	11.0	4.0	12.0	6.0	8.0	37.0	83.0
Number of banks (Min)	2.0	9.0	2.0	6.0	4.0	14.0	2.0	6.0	5.0	6.0	9.0	9.0	2.0	11.0	4.0	12.0	6.0	7.0	37.0	81.0

Part 2: Growth in Credit (In percent) 1/

	Saudi Arabia		Kuwait		UAE		Qatar		Bahrain		Bahrain off-shore		Jordan		Turkey		Malaysia		All Banks	
	IB	**CB**	**IB**	**CB**	**IB**	**CB**	**IB**	**CB**	**IB**	**CB**	**IB**	**CB**	**IB**	**CB**	**IB**	**CB**	**IB**	**CB**	**IB**	**CB**
2008-2007	26.9	28.9	18.0	16.3	39.5	38.1	69.0	48.2	37.1	15.7	10.6	0.0	42.6 ***	13.5	3.5	0.9	9.0	2.6	25.4 **	17.0
2009-2008	9.6 **	-1.8	19.8	1.5	4.3	4.6	13.5 ***	0.5	2.3	5.9	14.7 **	-10.4	51.5 ***	-0.9	35.1 **	0.1	20.6 **	7.1	14.4 **	1.6
2009-2007	38.7	27.0	30.9	18.3	44.4	44.9	91.7 *	46.1	47.9	22.3	26.7	-15.4	117.9 ***	12.5	40.1 **	0.9	32.5 *	9.5	40.7 ***	19.0
Change (2009-08 and 2008-07)	-17.3 **	-30.7	1.8	-14.8	-35.1	-33.5	-55.5	-44.6	-34.9 *	-9.8	4.1	-12.2	8.9 **	-14.5	31.6 **	-0.8	11.5	4.8	-11.0	-15.6
Number of banks (Max)	2.0	9.0	2.0	6.0	5.0	14.0	2.0	6.0	5.0	6.0	7.0	9.0	2.0	11.0	4.0	12.0	5.0	8.0	34.0	81.0
Number of banks (Min)	2.0	9.0	2.0	6.0	5.0	14.0	2.0	5.0	5.0	6.0	7.0	8.0	2.0	11.0	4.0	12.0	5.0	6.0	34.0	77.0

Part 3: Growth in Assets (In percent) 1/

	Saudi Arabia		Kuwait		UAE		Qatar		Bahrain		Bahrain off-shore		Jordan		Turkey		Malaysia		All Banks	
	IB	**CB**	**IB**	**CB**	**IB**	**CB**	**IB**	**CB**	**IB**	**CB**	**IB**	**CB**	**IB**	**CB**	**IB**	**CB**	**IB**	**CB**	**IB**	**CB**
2008-2007	27.9	20.8	18.0 **	3.9	17.7	20.4	48.3	37.8	35.1 **	5.4	18.6 ***	-11.8	25.8	7.5	1.8 *	-3.8	19.4	-2.2	20.8 ***	7.2
2009-2008	4.1	3.6	3.6 **	-3.6	5.6	7.6	20.8 *	11.7	5.8	0.5	4.8 **	-17.6	17.0 ***	5.5	33.4 ***	9.1	18.1 ***	7.2	9.6 **	4.8
2009-2007	32.9	24.7	22.2 ***	0.5	23.9	30.2	78.4 *	54.3	43.6 **	5.6	19.6 ***	-26.8	46.8 *	13.5	35.5 ***	5.0	42.3 *	4.9	31.8 ***	12.6
Change (2009-08 and 2008-07)	-23.8	-17.2	-14.4	-7.5	-12.1	-12.8	-27.4	-26.1	-29.2 **	-4.9	-13.7	-5.8	-8.8	-2.0	31.5 **	12.9	-1.4	9.5	-11.1 *	-2.4
Number of banks (Max)	2.0	9.0	2.0	6.0	5.0	14.0	2.0	6.0	5.0	6.0	9.0	10.0	2.0	11.0	4.0	12.0	6.0	8.0	82.0	37.0
Number of banks (Min)	2.0	9.0	2.0	6.0	4.0	14.0	2.0	5.0	5.0	6.0	8.0	10.0	2.0	11.0	4.0	12.0	6.0	8.0	82.0	37.0

Part 4: Change in Rating between pre Lehman Brothers and April 9, 2010 (change in the probability of default; positive change = downgrading) 1/

	Saudi Arabia		Kuwait		UAE		Qatar		Bahrain		Bahrain off-shore		Jordan		Turkey		Malaysia		All Banks	
	IB	**CB**	**IB**	**CB**	**IB**	**CB**	**IB**	**CB**	**IB**	**CB**	**IB**	**CB**	**IB**	**CB**	**IB**	**CB**	**IB**	**CB**	**IB**	**CB**
Pre-Sept.08- April 9, 2010	0	0	0	255	606 **	61	0	0	0	0	0 *	101	0 **	121	-31	-39	na	0	145	28.8
Number of Banks	1.0	8.0	2.0	6.0	4.0	10.0	1.0	4.0	1.0	4.0	1.0	4.0	1.0	4.0	4.0	10.0	0.0	4.0	16.0	53.0

Source: Authors' calculations and estimates.
1/ A green highlighted cell means that IBs fared significantly better than CBs, while a yellow highlighted cell means that CBs fared significantly better than CBs.
2/ *, ** and *** indicate that the hypothesis that the difference between IBs' weighted average mean and CBs' weighted average mean is greater than zero is significant at 10, 5, and 1 percent significance levels, respectively. 2007 (pre-crisis) profits, credit and assets are used as weights.
3/ Malaysian banks have financial years that differ from the calendar year.
4/ Most offshore banks lack details related to credit. The analysis does not capture the losses and downgrading of two CBs that defaulted.

V. What Might Explain the Difference in Performance?

This section examines the factors that could explain the difference in performance between IBs and CBs, including bank-specific factors, such as the level of investment portfolio, sectoral credit distribution, leverage, dependence on wholesale deposits, and size and type of banks.

A. Profitability

Table 5 summarizes the regression (OLS) results for the factors that could explain the change in profitability between 2008 and 2007.

Table 5: Regression Analysis of the Factors Affecting Changes in Profitability Between 2008 and 2007

	Dependent variable: Change in Profitability= 100*(2008_profits/2007_profits -1)	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7	
		Parameter	P-value	Parameter	P-value	Parameter	P-value	Parameter	P-value	Parameter	P-value	Parameter	P-value	Parameter	P-value
Bank specific	Investment portfolio-to-total assets	-4.59	*0.00*	-4.50	*0.00*	-2.81	*0.02*	-2.65	*0.01*	-1.79	*0.06*	-1.80	*0.06*	-1.50	*0.13*
	R. estate & construction-to-total loans	1.26	*0.16*	1.30	*0.15*	0.35	*0.72*	0.27	*0.78*			0.45	*0.61*		
	Banks' deposits-to-total deposits	-1.03	*0.15*	-1.29	*0.07*	0.86	*0.27*	0.70	*0.36*						
	Leverage (assets-to-capital)	-5.93	*0.08*	-3.60	*0.27*	-9.54	*0.01*	-7.92	*0.03*	-12.16	*0.00*	-12.31	*0.00*		
	Islamic bank dummy (IB=1)					30.79	*0.23*			44.85	*0.06*	43.55	*0.07*		
	Size of the bank dummy (Large=1) 1/					27.60	*0.20*			30.46	*0.16*	31.09	*0.15*		
	Size of the IB dummy (Large=1) 2/													65.93	*0.04*
	Size of the CB dummy (Large=1) 3/													-23.10	*0.32*
Macro variables	Change in interbank rate	20.29	*0.04*												
	Change in GDP growth	6.76	*0.38*	5.32	*0.49*	-306.80	*0.30*								
	UAE country dummy					68.77	*0.70*	224.14	*0.00*	192.31	*0.00*	188.59	*0.00*	148.51	*0.00*
	Bahrain country dummy					182.09	*0.00*	186.30	*0.00*	145.86	*0.00*	142.32	*0.00*	114.45	*0.01*
	Jordan country dummy					642.86	*0.07*	265.72	*0.00*	233.96	*0.00*	230.29	*0.00*	193.56	*0.00*
	Kuwait country dummy					1403.37	*0.23*	166.26	*0.01*	147.76	*0.01*	142.77	*0.01*	89.84	*0.09*
	Malaysia country dummy					559.58	*0.02*	300.29	*0.00*	285.77	*0.00*	276.88	*0.00*	180.34	*0.00*
	Saudi country dummy					930.80	*0.14*	272.93	*0.00*	228.05	*0.00*	228.68	*0.00*	183.66	*0.00*
	Turkey country dummy					-234.41	*0.62*	244.01	*0.00*	197.28	*0.00*	197.15	*0.00*	157.53	*0.00*
	Qatar country dummy					981.89	*0.16*	243.81	*0.00*	212.86	*0.00*	204.15	*0.00*	185.41	*0.00*
	Constant	132.1456	*0.007*	78.98	*0.06*	-897.71	*0.19*	-157.47	*0.01*	-112.27	*0.02*	-115.33	*0.02*	-143.97	*0.00*
	Number of obs	113		113		113		113		120		120		120	
	F	7.72		8.19		6.05		7.21		6.21		5.71		5.55	
	Prob > F	0.00		0		0.00		0.00		0.00		0.00		0.00	
	R-squared	0.30		0.2768		0.48		0.46		0.41		0.41		0.36	
	Adj R-squared	0.26		0.243		0.40		0.40		0.34		0.34		0.30	

Source: Authors' estimates and calculations.
1/ In each country, banks with assets equal or greater than the median considered large bank.
2/ Equals IB dummy times size of bank dummy.
3/ Equals CB dummy times size of bank dummy.

Models 1–6 show that higher investment portfolio and leverage (assets to capital) have negative impact on profitability. A one percent higher investment-to-asset ratio or a one-time higher assets-to-capital ratio lead to a decline in profitability by 1.8 and 12.2 percent, respectively (Models 5 and 6). These results are in line with likely higher risk taking associated with higher leverage and the impact of the crisis on securities values. The advantage that IBs have in the form of smaller investment portfolio and lower leverage explains in part their better performance in 2008. Exposure to the real estate and construction sectors does not seem to have a significant impact on profitability.[16] Similarly, the reliance on bank deposits does not seem significant in explaining the change in profitability, except in Model 2. However, Models 1 and 2 are the weakest in terms of model selection criteria. This could be due to large liquidity support that was extended to the banking system during the

[16] We also examined the impact of the exposure to the household and trade sectors, capital adequacy ratios, growth in credit, and interaction (real estate and construction x country dummies) variables, which proved to be insignificant.

crisis, which limited the impact of this factor. The changes in interbank rates and economic growth are not significant, or have the wrong sign, reflecting the very general nature of these variables, which do not allow for capturing of differences across countries, including the policy response to the crisis. Replacing these variables with country dummies improves the results significantly (Models 3–7).[17]

Models 3, 5, and 6 indicate that, in addition to the investment, leverage, and other country-specific variables, there are other factors associated with IBs that explain their better performance in 2008. As Models 5 and 6 show, profitability is likely to increase by about 44 percent if the bank is an IB. IB-specific factors could include the composition of the investment portfolio, where IBs have zero exposure to toxic assets, derivatives, and conventional financial institution securities, which were all hard hit during the crisis (Box 3).

Model 7 examines if bank (IB or CB) size has an impact on the change in profitability. As the table shows, profitability is likely to improve by about 66 percent if the bank is a large IB. On the other hand, the size of CBs has a negative, but insignificant, impact on profitability. This suggests that large IBs have fared better than small ones. Better diversification, economies of scale, and stronger reputation[18] (being in the market for a longer period) might have contributed to this better performance. These results differ from those, for example, in Čihák and Hesse (2008), who suggest that large IBs are less stable than large commercial banks. This difference could be due to different samples (Čihák and Hesse (2008) included the large Iranian banks) and the definition of large banks.[19]

Table 6 summarizes the regression results for the factors that could explain the change in profitability between 2009 and 2007. Banks‘ balance sheet variables are not statistically significant. Similarly, the changes in interbank rate and economic growth are not significant, or have the wrong sign. Replacing these variables with country dummies improves the results significantly (Models 3–7). Models 3, 5 and 6 indicate that other factors associated with IBs and not captured by the model could explain their weaker performance in 2009.[20] These could include name concentration (Box 3). Model 7 examines if the size of IB or CB has an impact on the change in profitability. As the table shows, profitability is likely to improve by 68 percent and 53 percent, respectively, if the bank is a large IB or CB. This suggests that large IBs have fared better than small ones in 2009, as was the case in 2008.

[17] The omitted category (country) is Bahrain offshore.

[18] This helps in providing more stable sources of funds. It remains the case that in several countries one or two IBs dominate the market. This contributes to the stability of funds.

[19] They defined large banks as banks with assets exceeding US$1 billion while we define large banks based on the median of bank assets in each country.

[20] While the IBs dummy is not significant at 10 percent significant level, it is very close to be significant.

Table 6: Regression Analysis of the Factors Affecting Changes in Profitability Between 2009 and 2007

Dependent variable: Change in Profitability= 100*(2009_profits/2007_profits -1)	Model1		Model2		Model3		Model4		Model5		Model6		Model7	
	Parmeter	P-value	Parmeter	P-value	Parmeter	P-value	Parmeter	P-value	Parmeter	P-value	Parmeter	P-value	Parmeter	P-value
Bank specific														
Investment portfolio-to-total assets	0.46	*0.67*	0.41	*0.70*	1.76	*0.16*	1.80	*0.10*	0.37	*0.73*	0.29	*0.78*	0.85	*0.42*
R. estate & construction-to-total loans	0.25	*0.79*	0.34	*0.70*	-0.11	*0.91*	0.01	*0.99*			-0.46	*0.61*		
Banks' deposits-to-total deposits	-1.39	*0.06*	-1.32	*0.05*	0.71	*0.36*	0.84	*0.29*						
Leverage (assets-to-capital)	6.27	*0.05*	6.27	*0.04*	3.33	*0.35*	5.39	*0.11*	4.19	*0.27*				
Islamic bank dummy (IB=1)					-33.42	*0.18*			-36.14	*0.13*	-37.98	*0.11*		
Size of the bank dummy (Large=1) 1/					35.34	*0.09*			46.13	*0.04*	54.67	*0.01*		
Size of the IB dummy (Large=1) 2/													67.83	*0.04*
Size of the CB dummy (Large=1) 3/													53.42	*0.02*
Macro variables														
Change in interbank rate	1.68	*0.79*												
Change in GDP growth	-16.52	*0.04*	-16.05	*0.04*	-136.02	*0.13*								
UAE country dummy					0.65	*1.00*	179.30	*0.00*	157.64	*0.00*	174.88	*0.00*	195.11	*0.00*
Bahrain country dummy					16.38	*0.74*	4.60	*0.93*	17.43	*0.70*	30.13	*0.51*	36.29	*0.43*
Jordan country dummy					258.83	*0.00*	189.71	*0.00*	174.15	*0.00*	190.65	*0.00*	212.89	*0.00*
Kuwait country dummy					361.53	*0.09*	53.43	*0.34*	57.69	*0.28*	81.69	*0.12*	97.67	*0.06*
Malaysia country dummy					132.00	*0.08*	182.96	*0.00*	183.68	*0.00*	234.98	*0.00*	240.19	*0.00*
Saudi country dummy					536.17	*0.07*	102.96	*0.04*	95.84	*0.04*	109.50	*0.02*	130.17	*0.00*
Turkey country dummy					-187.79	*0.44*	181.71	*0.00*	164.87	*0.00*	179.46	*0.00*	200.17	*0.00*
Qatar country dummy					361.72	*0.00*	225.70	*0.00*	209.63	*0.00*	226.57	*0.00*	242.06	*0.00*
Constant	-159.53	*0.00*	-162.94	*0.00*	-820.83	*0.03*	-261.50	*0.00*	-222.62	*0.00*	-200.94	*0.00*	-245.43	*0.00*
Number of obs	111		111		111		111		118		118		118	
F	3.51		4.23		4.29		4.67		6.52		6.40		6.61	
Prob > F	0.00		0.00		0.00		0.00		0.00		0.00		0.00	
R-squared	0.17		0.17		0.40		0.36		0.40		0.42		0.41	
Adj R-squared	0.12		0.13		0.31		0.29		0.34		0.36		0.35	

Source: Authors' estimates and calculations
1/ In each country, banks with assets equal or greater than the median considered large bank.
2/ Equals IB dummy times size of bank dummy.
3/ Equals CB dummy times size of bank dummy.

Table 7 summarizes the regression results for the factors that could explain the cumulative impact on profitability.

Table 7: Regression Analysis of the Factors Affecting Changes in Profitability Between Average (2008 and 2009) and 2007

Dependent variable: Change in Profitability= 100*((2009_profits*0.5+2008_profits*0.5)/2007 _profits -1)	Model1		Model2		Model3		Model4		Model5		Model6		Model7	
	Para.	P-value	Para.	P-value	Para.	P-value	Para.	P-value	Para.	P-value	Para.	P-value	Para.	P-value
Bank specific														
Investment portfolio-to-total assets	-2.99	*0.00*	-3.09	*0.00*	-1.32	*0.17*	-1.06	*0.21*	-1.06	*0.17*	-1.06	*0.17*	-0.69	*0.35*
R. estate & construction-to-total loans	0.77	*0.27*	0.98	*0.15*	0.08	*0.92*	0.02	*0.98*			-0.11	*0.87*		
Banks' deposits-to-total deposits	-1.58	*0.01*	-1.56	*0.01*	0.42	*0.49*	0.41	*0.50*						
Leverage (assets-to-capital)	1.08	*0.67*	2.24	*0.36*	-2.76	*0.32*	-0.83	*0.75*	-3.97	*0.15*	-3.93	*0.15*		
Islamic bank dummy (IB=1)					-6.23	*0.74*			3.35	*0.84*	3.66	*0.83*		
Size of the bank dummy (Large=1) 1/					30.58	*0.06*			38.56	*0.02*	38.39	*0.02*		
Size of the IB dummy (Large=1) 2/													66.67	*0.00*
Size of the CB dummy (Large=1) 3/													14.95	*0.35*
Macro variables														
Change in interbank rate	10.57	*0.12*												
Change in GDP growth	-1.86	*0.73*	0.28	*0.96*	-5.52	*0.94*								
UAE country dummy					181.02	*0.06*	188.00	*0.00*	170.35	*0.00*	171.19	*0.00*	167.62	*0.00*
Bahrain country dummy					96.07	*0.01*	95.33	*0.01*	80.38	*0.02*	81.22	*0.02*	74.57	*0.02*
Jordan country dummy					222.18	*0.00*	218.81	*0.00*	201.43	*0.00*	202.28	*0.00*	201.30	*0.00*
Kuwait country dummy					123.03	*0.45*	106.42	*0.01*	100.32	*0.01*	101.49	*0.01*	91.95	*0.01*
Malaysia country dummy					244.79	*0.00*	232.52	*0.00*	234.71	*0.00*	236.78	*0.00*	208.83	*0.00*
Saudi country dummy					202.35	*0.37*	181.34	*0.00*	162.07	*0.00*	161.92	*0.00*	157.90	*0.00*
Turkey country dummy					188.98	*0.31*	200.21	*0.00*	179.40	*0.00*	179.41	*0.00*	177.82	*0.00*
Qatar country dummy					229.33	*0.01*	225.59	*0.00*	207.14	*0.00*	209.20	*0.00*	210.08	*0.00*
Constant	35.96	*0.41*	3.88	*0.92*	-208.77	*0.48*	-187.54	*0.00*	-160.04	*0.00*	-159.22	*0.00*	-187.46	*0.00*
Number of obs	111		111		111		111		118		118		118	
F	6.99		7.80		6.77		8.06		9.30		8.35		10.69	
Prob > F	0.00		0.00		0.00		0.00		0.00		0.00		0.00	
R-squared	0.29		0.27		0.52		0.50		0.52		0.49		0.53	
Adj R-squared	0.25		0.24		0.44		0.44		0.46		0.43		0.48	

Source: Authors' estimates and calculations
1/ In each country, banks with assets equal or greater than the median considered large bank.
2/ Equals IB dummy times size of bank dummy.
3/ Equals CB dummy times size of bank dummy.

Most bank-specific variables are insignificant, except the investment portfolio variable, which is nearly significant at the 10 percent level. This reflects the fact that they were not significant in the model for 2009–2007. The results show that, on average, large banks fared better than small ones (Models 3, 5, and 6). In particular, Model 7 confirms again that large IBs fared better than small ones. As in 2008, the size impact in the sample is likely driven by large IBs.

BOX 3. EXAMPLES OF BANKS' LOSSES DURING THE CRISIS

Many CBs suffered large losses due to their holdings of toxic assets or conventional financial institution securities. The Bahrain offshore banks provide a good illustration of this point. For example, in 2007−08, the Gulf International Bank (GIB, a Bahraini wholesale CB) incurred about US$1.3 billion losses in securities investments in debt-based toxic assets (mortgage backed collateralized debt obligations) and in U.S. banks, such as Lehman Brothers. The shareholders[21] of the bank injected US$1 billion of new capital and bought toxic asset-backed securities worth $4.8 billion.[22] The Arab Banking Corporation (a Bahraini wholesale CB) incurred $1.2 billion losses due to similar investments, and its shareholders injected $1 billion of new capital.

In addition, the Gulf Bank (a Kuwaiti CB) incurred $1.4 billion losses due mainly to derivatives activities, with the bank's shareholders and the Kuwait Investment Authority injecting an equivalent amount of capital. The National Commercial Bank (NCB, the largest Saudi conventional bank) lost more than one billion riyal on changes in fair value for financial instruments in 2008.

Some IBs suffered large losses due to credit concentration. Global Finance House (a wholesale IB) lost $730 million due in part to taking $311 million in provisions for real estate project in Dubai. Bahrain Islamic bank exposure to Saudi groups Saad and Algosaibi contributed to the $51 million losses in 2009.

The profit/loss-sharing nature of deposits and IBs profitability

The profit/loss-sharing nature of investment deposits provides IBs with an additional buffer (Box 1). However, this feature was not tested in the crisis given that most banks remained profitable. In addition, in the context of the crisis and given the loose monetary stance in most countries, this feature is likely to put IBs' profitability at a disadvantage compared to CBs. This stems from the fact that CBs' profitability benefits from higher interest rate

Figure 10a. IB Return on Investment and IAH's Return

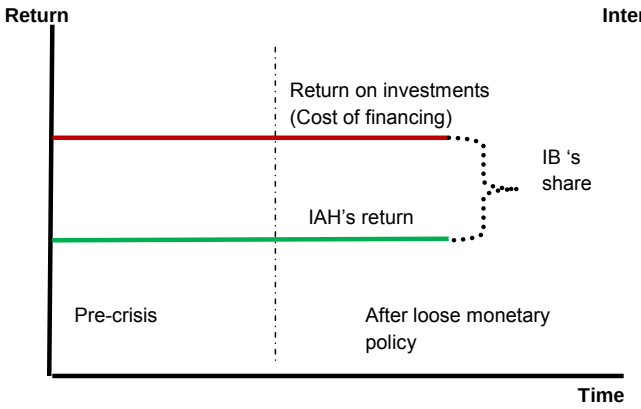
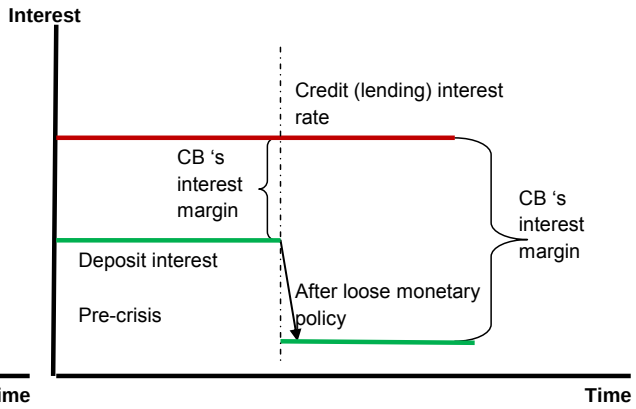


Figure 10b. CB Credit and Deposit Interest Rate



[21] GIB is owned by the six Gulf Arab states.

[22] See GIB's 2008 Annual Report for more details. The analysis does not account for the potential reduction losses due to the purchase of these assets.

margins (lower interest rates on deposits and lending rates close to pre-crisis levels due to higher risk premia (Figure 10b)), while the IAHs‘ return is based on the IBs‘ performance (Figure 10a). Thus, assuming that other factors affecting profitability remain unchanged, the the IBs‘ profitability will be shared with the IAHs regardless of the prevailing interest ratein the market. The KFH PSIA‘s return in 2009 serves as a good illustration of this point. However, this is likely to be a short-term phenomenon. Some IBs could use an income-smoothing strategy to limit such impact (see Taktak et. al (2010) for further discussion).

B. Credit Growth

The OLS regressions in Table 8 examine the factors that could explain the differences across banks with respect to credit growth. Banks that lent a larger part of their portfolio to the consumer and real estate and construction sectors seem to have maintained better credit growth in 2009. The stable macroeconomic conditions in most countries in the sample and job security in the GCC countries could explain the positive impact of the consumer loans. The impact of real estate and construction seems puzzling given the sharp decline in real estate prices in some countries. However, one has to keep in mind that the sharp decline was limited to the UAE, especially Dubai, and to some extent to Bahrain and Kuwait. In addition, residential real estate demand remained robust in most countries. Lending to the trade sector does not seem to have a significant impact. Higher capital adequacy ratios contributed to higher credit growth. This could explain, in part, the stronger performance by IBs. The sign for the bank deposits variable is not in line with international experience while higher leverage has the right sign, but is insignificant. The IBs dummy is significant and has a positive sign, reflecting in part the robust market demand for Islamic banking products.

Table 8: Regression Analysis of the Factors Affecting Changes in Credit Between 2008 and 2009

	Dependent variable: Change in Credit= 100*(2009_Credit)/2008_Credit -1)	Model1		Model2		Model3	
		Para.	P-value	Para.	P-value	Para.	P-value
Bank specific	Consumer loans	0.51	0.04	0.62	0.02	0.50	0.05
	R. estate & construction-to-total loans	0.60	0.05	0.72	0.03	0.60	0.05
	Trade	0.25	0.36			0.26	0.36
	Capital adequacy ratio (CAR)	0.88	0.22	1.32	0.08	0.81	0.28
	Banks' deposits-to-total deposits	0.71	0.01	0.63	0.03	0.70	0.01
	Leverage (assets-to-capital)	-0.60	0.66	-0.10	0.95	-0.66	0.64
	Islamic bank dummy (IB=1)	24.06	0.00			27.07	0.01
	Size of the IB dummy (Large=1) 1/			10.85	0.29	-5.10	0.66
	Size of the CB dummy (Large=1) 2/			-8.18	0.28	0.97	0.90
Macro variables	UAE country dummy	1.41	0.95	-13.66	0.57	0.51	0.98
	Bahrain country dummy	-21.14	0.33	-34.38	0.13	-21.35	0.34
	Jordan country dummy	14.59	0.53	-1.35	0.96	13.56	0.57
	Kuwait country dummy	41.64	0.07	31.56	0.19	40.50	0.09
	Malaysia country dummy	12.67	0.61	0.40	0.99	10.90	0.68
	Saudi country dummy	11.86	0.61	-2.47	0.92	10.66	0.66
	Turkey country dummy	29.93	0.20	16.28	0.50	28.45	0.24
	Qatar country dummy	-5.51	0.83	-20.28	0.43	-6.47	0.80
	Constant	-52.17	0.09	0.26	0.37	-49.61	0.12
	Number of obs		99		99		99
	F		2.98		2.14		2.59
	Prob > F		0.00		0.01		0.00
	R-squared		0.35		0.29		0.35
	Adj R-squared		0.23		0.16		0.22

Source: Authors' estimates and calculations.
1/ Equals IB dummy times size of bank dummy.
2/ Equals CB dummy times size of bank dummy.

C. Asset Growth

The OLS regressions in Table 9 examine the factors that could explain the differences across banks with respect to asset growth. Banks that lent a larger part of their portfolios to consumers seem to have maintained better asset growth. The stable macroeconomic conditions in most countries in the sample and job security in GCC countries could explain the positive impact of the consumer loans. The coefficients for investment and real estate and construction variables have the expected sign, but are not significant. Lending to the trade sector does not seem to have a significant impact. A higher capital adequacy ratio is associated with higher asset growth. The IBs dummy is significant and has a positive sign, reflecting in part the robust market demand. The results in Tables 8 and 9 show that the global reform agenda which calls for better qualitative and quantitative capital and liquidity is likely to limit cyclical credit and asset growth, including in emerging markets.

Table 9: Regression Analysis of the Factors Affecting Changes in Assets Between 2007 and 2009

	Dependent variable: Change in Assets= 100*(2009_Assets)/2007_Assets -1)	Model1 Para.	Model1 P-value	Model2 Para.	Model2 P-value	Model3 Para.	Model3 P-value
Bank specific	Investment portfolio-to-total assets	-0.46895	0.36	-0.6082976	0.245	-0.5302	0.291
	Consumer loans	0.803779	0.009	0.8699712	0.003	0.837935	0.003
	R. estate & construction-to-total loans	-0.06247	0.872				
	Trade			-0.0322627	0.928		
	Capital adequacy ratio (CAR)	1.626693	0.08	2.08805	0.026	2.090221	0.006
	Banks' deposits-to-total deposits	0.358962	0.307	0.3034925	0.398	0.406009	0.239
	Leverage (assets-to-capital)	-1.51156	0.389	-1.103523	0.529		
	Islamic bank dummy (IB=1)	20.76415	0.04			19.25723	0.05
	Size of the IB dummy (Large=1) 1/			15.63382	0.227		
	Size of the CB dummy (Large=1) 2/			-5.377032	0.566		
Macro variables	UAE country dummy	67.05638	0.032	57.26724	0.058	62.63907	0.033
	Bahrain country dummy	40.56368	0.15	31.98725	0.244	34.42154	0.192
	Jordan country dummy	66.01628	0.03	56.53195	0.062	61.12362	0.035
	Kuwait country dummy	48.56785	0.107	46.83509	0.119	42.40687	0.133
	Malaysia country dummy	85.11207	0.011	79.01458	0.016	72.58358	0.012
	Saudi country dummy	69.97628	0.019	62.87188	0.043	66.77878	0.022
	Turkey country dummy	52.45518	0.085	44.94976	0.145	48.89262	0.101
	Qatar country dummy	111.1283	0.001	101.2248	0.001	107.0916	0.001
	Constant	-71.1657	0.082	-67.24942	0.12	-87.7704	0.015
	Number of obs		103		102		103
	F		3.64		3.12		4.19
	Prob > F		0.0001		0.0003		0
	R-squared		0.3855		0.3702		0.3795
	Adj R-squared		0.2796		0.2517		0.2888

Source: Authors' estimates and calculations.
1/ Equals IB dummy times size of bank dummy.
2/ Equals CB dummy times size of bank dummy.

D. External Ratings

The limited number of rated banks, along with little change in the rating for many banks, renders examining the factors that explain the changes in rating difficult.

VI. Challenges Facing IBs Highlighted By the Crisis

The crisis highlighted a number of sector-specific challenges that need to be addressed in order for IBs to continue growing at a sustainable pace. Specifically, the key challenges faced by the Islamic banking industry include (i) the infrastructure and tools for liquidity risk management, which remains underdeveloped in many jurisdictions; (ii) a legal framework, which is incomplete or untested; (iii) the lack of harmonized contracts; and (iv) insufficient expertise (at the supervisory and industry levels) relative to the industry‘s growth.

The crisis highlighted the importance of liquidity risk, making the strengthening of liquidity management a key part of the global reform agenda. While IBs rely more on retail deposits and, hence, have more stable sources of funds, they face fundamental challenges when it comes to liquidity management. The challenges relate to (i) a shallow money market due to the small number of participants and the absence of instruments that could be used as

collateral for borrowing or could be discounted (sold) at the central bank discount window; and (ii) the inability to attract or maintain deposits by promising higher return. Some IBs have tried to address this by running an overly liquid balance sheet, thereby sacrificing profitability.[23] While this approach to liquidity has mitigated risks during the crisis, efforts to enhance IBs' ability to manage their liquidity need to continue, including by further developing the sukuk market, especially sovereign, and *Shariah*-compliant money markets.[24] More generally, monetary and regulatory authorities in many countries should ensure that the liquidity infrastructure is neutral to the type of bank and strong enough to address the challenges highlighted during the global crisis or could be imposed by the global reform agenda.

Some of the previous challenges were highlighted by Governor Aziz in "The Changing Landscape of Financial Regulation: Implications for Islamic Finance conference" (2010) **"***In the context of Islamic finance, the impact of the proposed Basel requirement to maintain sufficient cushion of high quality liquid assets needs to be carefully considered, as the infrastructure and tools for liquidity risk management by Islamic banks is still in its infancy in many jurisdictions. A very narrow definition of liquid assets that is currently proposed may exacerbate liquidity risks in many Islamic financial markets in which Islamic banks compete with conventional counterparts for the limited stock of Shariah-compliant government securities. This will certainly increase compliance cost and render the market illiquid when the demand exceeds supply, placing Islamic financial institutions at a disadvantage."*

The crisis underscored the importance of appropriate institutional arrangements for the resolution of troubled financial institutions. This is even more relevant for IBs, given the absence of precedents. Relatedly, putting in place a mechanism for cooperation between regulators within and across jurisdictions for the resolution of IBs is essential to contain spillovers beyond national boundaries. The recent default[25] or near default of sukuk instruments has highlighted the legal and regulatory risks associated with underdeveloped and untested resolution frameworks for Islamic finance in general. The uncertainty created by the Nakheel sukuk also serves as a good example.[26] In addition, while IAHs are protected against losses that could result from negligence or mismanagement, legal and regulatory

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[23] Islamic financial institutions carry 40 percent more liquidity than their conventional counterparts and commit about 95 percent of their funds to short-term *Ijarah, Murabahah* and *Musharakah* instruments (Khan et al, 2008).

[24] A Liquidity Management Task Force was formed in early 2009 by the IFSB and the Islamic Development Bank to find ways to address this problem.

[25] This includes the default of East Cameron Gas Company sukuk (US$167 million), Kuwait Investment Dar sukuk (US$100 million) and the Saad Group US$650 million Golden Built Sukuk. Given that these will represent the first cases to work-out sukuk default or restructuring, they will set a precedent for future restructuring. See Sukuk, Interrupted (Deutsche Bank; 2009) for further discussion.

[26] While Nakheel sukuk holders did not face any losses while conventional loans and bond were restructured with losses to lender/holders, the legal uncertainty remains an issue that needs to be addressed.

frameworks are vague in defining these events and the procedures to quantify their potential impact.

The lack of harmonized accounting and regulatory standards was a key challenge for regulators and market participants during the crisis. This is even more acute for IBs given the lack of standard financial contracts and products across the various institutions within the same country, as well as across jurisdictions. The standards for IBs‘ operations continue to be fragmented, notwithstanding international initiatives that have been taken by the Accounting and Auditing Organization of Islamic Financial Institutions (AAOIFI) and the IFSB to create general industry standards. Local accounting standards used in the Islamic banking sector often consist of a mixture of IFRS, IAS, AAOIFI and other specific standards, complicating the operations of IBs. Similarly, IFSB standards are not fully implemented in many countries. While full harmonization might not be possible [27] given the nature of the industry, mutual recognition of financial standards and products across jurisdictions would help limit this problem.[28] It would also reduce transaction costs, help implement an efficient regulatory oversight, enhance the process of compliance, and contribute to confidence and industry growth.

The previous challenges serve as a reminder that expertise in Islamic finance has not kept pace with the rapid growth of the industry. Islamic bankers need to be familiar with conventional finance and be versed on the different aspects of *Shariah,* particularly on the Islamic law of transactions. Such a requirement is becoming essential given the increasing degree of sophistication of Islamic financial products.[29] Professionals with this dual qualification are hard to find, although the number of ‗newcomers‘ in Islamic finance is steadily growing. The shortage of specialists also has an impact on product innovation, and could hinder the effective management of risks relevant to the industry, including the lack of instruments to hedge against the volatility in currency and commodity markets and the relatively higher liquidity, legal, and reputational risks.

[27] Some *Shariah* scholars are reluctant about full and total harmonization of *Shariah* standards. In their view, the standardization of *Shariah* may be against the fundamental premise of *Ijtihad*, the process of deducting *Shariah* rules from their authentic sources. If rules become standard, and imposed by legal authorities, then *Ijtihad* cannot be applied anymore. This will eventually damage the very reason why *Shariah* can be applied in all circumstances, times and places.

[28] Securing minimum features in the contracts, including approval by an appropriate *Shariah* board, would facilitate product innovation.

[29] Islamic products tend to be more complicated than their conventional counterparts since they usually involve more than one concept and non-standard transaction structures.

VII. CONCLUSIONS

As one of the fastest growing segments in global financial services, Islamic finance has become systemically important in many markets and too big to ignore in others. While conventional intermediation is largely debt-based and allows for risk transfer, Islamic intermediation, in contrast, is asset-based, and centers on risk sharing. In addition to providing IBs with additional buffers, these features make their activities more closely related to the real economy and tend to reduce their contribution to excesses and bubbles.

Our analysis suggests that IBs fared differently than did CBs during the global financial crisis. Factors related to IBs' business model helped contain the adverse impact on profitability in 2008, while weaknesses in risk management practices in some IBs led to larger decline in profitability compared to CBs in 2009. In particular, adherence to *Shariah* principles precluded IBs from financing or investing in the kind of instruments that have adversely affected their conventional competitors and triggered the global financial crisis. The weak performance in some countries was associated with sectoral/name concentration and, in some cases, was facilitated by exemptions from concentration limits,[30] highlighting the importance of a neutral regulatory framework for IBs and CBs and strengthening risk management in some banks.

Despite higher profitability during the pre-global crisis period (2005–07), IBs' average profitability for 2008–09 was similar to that of CBs, indicating better cumulative (pre- and post-crisis) profitability and suggesting that higher pre-crisis profitability was not driven by a strategy of greater risk taking. Large IBs have fared better than small ones. Better diversification, economies of scale, and stronger reputation might have contributed to this better performance. This suggests that developing the industry and increasing competition should be achieved through establishing large and well managed IBs that can compete with existing banks.

IBs' credit and asset growth were at least twice higher than that of CBs during the crisis, suggesting a growing market share going forward and larger supervisory responsibility. External rating agencies' re-assessment of IBs' risk was generally more favorable or similar to that of CBs. Higher solvency has facilitated meeting the relatively more robust demand for Islamic banking finance and maintaining stable external ratings. Lending to the less affected consumer sector has helped support strong credit and asset growth.

While the global crisis gave IBs an opportunity to prove their resilience, it also highlighted the need to address important challenges. The crisis has led to greater recognition of the importance of liquidity risks, and the need for efficient bank resolution framework. Hence, building a well-functioning liquidity management infrastructure is a key priority. Moreover,

[30] In the UAE some IBs exceeded the 25 percent limit on lending to real estate sector.

regulators and standard-setters for IBs should ensure that the supervisory and legal infrastructure, including for bank resolution, remain relevant to the rapidly changing Islamic financial landscape and global developments**.** Reform efforts in this regard should interface with the global reform agenda. Greater convergence and harmonization of regulations and products is needed to facilitate an efficient and sustainable growth of the industry. Addressing the above challenges will require that IBs and supervisors work together to develop the needed human capital.