What Enables Islamic Banks to Contribute in Global Financial Reintermediation?

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Abstract

Conventional banks which once were competing with non-banking financial institutions and capital markets today face the new challenge of being reintermediated by Islamic banks. Earlier academic research has been debating over disintermediation and reintermediation of conventional banks, but consistently failed to address reintermediation through Islamic banks as a possibility. This study, however, fills the void by addressing the novel possibility of reintermediation *"within"* the banking sector and is the first attempt to analyze and compare Islamic and conventional banks from the perspective of reintermediated financial markets. After identifying the reintermediation trends led by Islamic banks we investigate several bank specific financial and non-financial characteristics that might have enabled Islamic banks to emerge as an important player in reintermediated financial markets. By keeping our focus on slightly modified version of CAMELS framework where 'S' represents "Service Quality" we find that along with better capitalization (C) and improved liquidity (L), better service quality (S) is another distinguished feature of Islamic banks that might be linked with their high degree of intermediation.

1 Introduction

The current literature on financial intermediation is debating whether financial markets are moving towards *disintermediation* or towards *reintermediation*. Earlier, literature in the 1970s brought forth the idea that disintermediation of financial intermediaries and banks had occurred, where the term disintermediation, an antonym for intermediation[1], was used to signify a financial system in an economy where lenders (or savers) and borrowers (or investors) engage in direct financial transactions, without utilizing the services of a financial intermediary in between them. (Gurley and Shaw, 1955). Among the reasons for disintermediation given in literature, prominent ones included the possibility of liquidity crisis (Goldfeld and Jaffee, 1970), unsustainable business models of commercial banks (Hendershott, 1971), increasing competition from enhanced financial markets (Allen & Gale, 1997), strong competition from the stock market which undermines banks' ability to provide intertemporal risk smoothing (Deidda and Fattouh, 2008), and the long-run movement away from traditional demand for interest (DeYoung and Torna, 2013). According to Thakor, (1996), a certain level of disintermediation is considered inevitable in any economy. However, this claim has not been justified empirically.[2]

1.1 Disintermediation or Reintermediation?

Contrary to the theories regarding disintermediation, studies from late 1990s claimed that the phenomenon of financial disintermediation has not been understood properly: financial intermediation has not decreased, but instead the role of banks has decreased, while the role of non-banking financial institutions (NBFIs) has increased; and this switch in power was termed as the reintermediation of financial system (Rajan, 2006; Schmidt et al., 1999; Scholtens and Wensveen, 2000). Some authors though, emphasize that banks and capital markets have both complementary and competing roles (Bhattacharya and Thakor, 1993). When banks and NBFIs operate side by side and supersede each other's actions, reintermediation can be thought to occur, as in this case, traditional structures of FIs will change and they will strive to reestablish themselves in

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[1]Intermediation is the issuance of debt by financial intermediaries, in soliciting loanable funds from surplus spending units, and allocating these loanable funds among deficit units whose direct debt they absorb. (Gurley & Shaw, 1955. Page 519)

[2] See Bernanke, (1988), King and Levine, (1993) and Pagano, (1993)

the new environment (Domowitz, 2002), while the essence of financial intermediation would be the same. Merton & Bodie, (1995) and Allen and Santomero, (1998) in their studies have in fact stated that theory on FIs has moved from an 'institutional perspective' to a 'functional perspective'. An institutional perspective on the theory of FIs was one that focused on studying differing organizational structures and procedures of different forms of intermediaries, such as commercial banks versus investment banks. On the other hand, the relatively new functional perspective focused on the services provided by intermediaries irrespective of institutional types. Scholtens and Wensveen, (2000) also propagated that the world is not moving towards *disintermediation*, but instead towards *reintermediation*. Furthermore, Rajan, (2006) showed, by using empirical data from late 1990's and early years of the twenty-first century, that there were significant developments in the financial sector during this time that led to what he termed commodification (greater availability of public information, standardization of financial contracts and securitization). Domowitz (2002) attributed such structural changes in the financial system as important drivers of reintermediation. Perhaps disintermediation was never a possibility because financial markets and investors always appreciated the lesson that disintermediation is costly (Fang et al., 2015; Morrison, 2005). Consequently, a better explanation for the decreased role of banks over time was *"the reintermediation"*.

1.2   Reintermediation and Islamic Banks

Hence, though the literature in the 1970s argued for the case of disintermediation, the literature on financial reintermediation has propagated the view that financial systems are evolving so as to meet the needs of the current century. In our opinion however, among the recent developments in the financial system[3], the most important aspect is the growth of Islamic banking. For example, current trends in Islamic and conventional banking show that the growth rates of Islamic banking have overtaken conventional

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[3] We acknowledge that the other financial developments are also taking place simultaneously, like Fin Tech, while old competition still persists (NBFIs). However, the focus of this paper is to study the challenge posed by Islamic banks, and while other aspects of the process of reintermediation are not considered, they could be studied in other papers as "cybermediation".
Cybermediation (http://www.jamieparfitt.com/blog/2014/5/4/disintermediation-reintermediation-and-cybermediation)

banking growth rates. A recent study shows that the assets for Islamic banking had a higher growth rate than conventional banking assets from the years 2010 and 2014, totaling 14 per cent and 11 per cent, respectively. According to the study, the Islamic banking sector experienced tremendous growth that surpassed the growth rates of conventional banks in nearly all the countries that were considered. In 2014 Qatar and Saudi Arabia experienced double digit growth rates at 20 per cent and 18 per cent respectively, while conventional banking lagged behind at 7 per cent growth rates for both cases. The study estimates that in the QISMUT+3 countries, the worth of Islamic banking assets would reach $1.8 trillion by 2020 (EY, 2016)[4]. It is interesting to note that due to the promising growth of Islamic banking, the conventional banks have started offering customized financial products to cater the needs of customers with orientation towards this particular sector. All these trends and movements not only indicate the increasing prominence of Islamic banks but also show the concerns and intentions of CBs to structurally change themselves and thus represent reintermediation *"within"* the banking system. Although the idea of reintermediation is well-worn, there is no formal study to our knowledge that has analyzed Islamic and Conventional banks from this perspective. It thus becomes inevitable to test our conjecture that conventional banks, once the major player in financial market; and were competing only with the capital market and NBFIs, could become substitutable by their new competitor in future. The idea of Islamic banks replacing conventional banks however, is not put forth as an immediate event, but a likely upcoming possibility.

<center>Insert Figure 1 here</center>

It comes as no surprise that a strand of literature has recently emerged that put forward the idea of comparison of conventional banks by the steadily growing sector of Islamic banks. In these studies, Islamic banks have been found to have low risk (Abedifar et al., 2015; Baele et al., 2014), are seen to aid overall banking system and economic development (Gheeraert, 2014) and their profit efficiency is found to be inversely related to their default risk (Saeed and Izzeldin, 2014). Some authors contrarily are of the view that there are no significant differences between risk and return relationships of Islamic

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[4] Note: QISMUT+3 countries are Qatar, Indonesia, Saudi Arabia, Malaysia, UAE, Turkey, Pakistan, Kuwait and Bahrain.

and conventional banks. For example, Mohamad et. al. (2008) and Bader et. al. (2008) conclude that there is no significant difference between cost, profit and revenue efficiencies of conventional versus Islamic banks, irrespective of age, size and geographical location of banks. Similarly, by using a sample of banks from Turkey over the period 1990 till 2000, and by using stochastic frontier analysis, El-Gamal and Inanoglu (2005) also come to a similar conclusion. But predominately, more recent studies do find that Islamic banks are at least as efficient as their conventional counterparts, more resilient during crisis (Hasan & Dridi, 2010) and financial panics (Farooq & Zaheer 2015) and less risky in most cases (See the literature survey by Abedifar et al, 2015). These include studies by Rashwan (2010), Abdul-Majid et. al. (2010; 2011a, b) and Beck et. al. (2013).[5] However, we believe one of the limitations of previous literature was that no studies tried to explore the possibility of reintermediation of conventional banks driven by the Islamic banks; and which financial or non-financial factors might explain this evolving trend.

Demirgüç-Kunt and Huizinga, (2010) in their study seemingly referred to reintermediation when they discussed their findings, i.e. replacement of traditional bank intermediation by new and renewed forms of financial intermediation. However, they primarily focused on how risk and return relationships of banks have changed during 1999-2007; and above all, Islamic banks constituted only a small percentage of their overall sample. Beck et al., (2013) extended the work of Demirgüç-Kunt and Huizinga, (2010) and empirically investigated the business model, efficiency and stability of Islamic banks compared to conventional banks. Only towards the end of their study, they tested reintermediation[6], but only with reference to the Global Financial Crisis (GFC) and found that Islamic banks disintermediated less as compared to conventional banks during crisis. Consequently, a gap existed in the literature regarding the connection between reintermediation and Islamic banks as Demirgüç-Kunt and Huizinga, (2010) did not explore this question explicitly with reference to Islamic banks, and Beck et al., (2013) limited this analysis to the time period of GFC. This study thus addresses these

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[5] Please refer to Abedifar et al., (2015) for a survey of relevant papers.
[6] The three ratios used by (Beck et al., 2013) include (i) ratio of fee-based to total operating income, (ii) of non-deposit funding to total funding, and (iv) loan-to-deposit ratio, as suggested by Demirgüç-Kunt and Huizinga, (2010)

limitations at length by first including a larger sample of Islamic banks (152) and second by using a longer sample period (2004 - 2015), to establish empirically that financial markets are in fact, moving towards reintermediation within the banking sector, and that the emergence of Islamic banks is one of the characteristics of global reintermediated financial system.

This study makes some important contribution in the existing body of relevant literature. We *first* evaluate the growth of banks' assets and loans, loan to deposit ratio, loans as a ratio of total earning asset and gross loans' growth for both conventional and Islamic banks for the sample period 2004-2015. This is interesting as it would illustrate the (re)intermediation trends within the banking sector. *Second*, we empirically test for various bank specific financial and non-financial characteristics that could have enabled Islamic banks to challenge conventional banks and emerge as an important player of reintermediated financial markets. Specifically, we analyze the business model of Islamic and conventional banks using CAMELS variables where various known ratios have been used to proxy C, A, M, E and L. We however, propose and use an interesting variable i.e., 'service quality' rather than 'sensitivity' to proxy S in CAMELS which in addition to financial ratios brings customers' perspective in explaining the phenomenon of reintermediation. We believe it is imperative to assess the performance of Islamic and conventional banks vis-à-vis their service quality dimension, as it in fact forms the very essence of today's service-oriented banking sector activity (Rajnith, 2013; Johnston, 1997).

Our results based on various fixed effects (LSDV) panel regressions show that Islamic banks are intermediating significantly more as compared to their conventional counterparts. This analysis is robust to the subsample period and across income groups. We successfully identify a significant role played by the CAMELS factors in enabling Islamic banks to take a lead in performing the core reintermediation function of the global banking sector. However, country characteristics are found to play an important role in determining reintermediation and bank performance as we find that not all countries have the same lending business for Islamic banks compared to conventional banks. In countries where Islamic banks exhibit high intermediation trends, banks are better capitalized and more liquid, and the reverse is true for countries showing low

intermediation by Islamic banks. The remainder of the paper is organized as follows. Section 2 describes our dataset. Section 3 provides the details of our methodology and explains the models being employed to test reintermediation in financial market and to explore plausible explanations for the emerging trends. Section 4 presents first our descriptive statistics analysis; and then reports our results for baseline regressions along with some robustness checks including Islamic banks post GFC, Islamic banks vis-à-vis income group and Islamic banks at country level. Section 6 concludes and discusses the role of Islamic banks in the global reintermediated financial market.

2 Data

We use annual data from a global database, Bankscope. The initial search criterion was to select those countries which at least had the Islamic bank. This resulted in an initial sample of 33 countries with 652 banks (486 Conventional and 166 Islamic). However, in order to make the comparison robust, those countries were dropped which had only one Islamic bank. This left us with the total of 21 countries in the sample having 640 banks (486 Conventional and 154 Islamic).

As Bankscope provides data on listed, unlisted and delisted banks and the reasons for being delisted can be numerous that might have confounded with our analysis of service quality, therefore, we dropped delisted banks (22) from our sample. Consequently, the final dataset consisted of 618 banks which include 250 listed banks (183 Conventional and 67 Islamic) and 368 unlisted banks (283 Conventional and 85 Islamic). We use unconsolidated data when available in Bankscope, and consolidated data if unconsolidated data are not available for a specific bank, in order not to double count subsidiaries of international banks and some large domestic banks. All countries in the sample have two or more conventional banks, with the exception of Iran, which has only one conventional bank operating in the country, due to its Islamized economic system. Table 1 shows banking sector structure in sample countries.

[Insert Table 1 here]

Time series in Bankscope were spread across the years 1987 to 2015 at the time of our study. We intended to use the longest time period available and possible. However, as the period before 2004 had many missing observations, especially for Islamic banks,

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we restricted our sample from 2004 till 2015. This was done in order to ensure that our results are meaningful by basing them on actual observations.

We use four ratios: asset growth, loan-deposit ratio, loan to earnings assets and gross loans growth as the measures for intermediation. Loan-deposit ratio has been defined in literature to explain the intermediation level of banks. A higher loan-deposit ratio signifies that a bank intermediates more of the deposits it receives (Beck et. al., 2013); and demonstrates higher intermediation efficiency (Beck et. al., 2009). Similarly, loan and the earning assets are the two important categories of a bank's output vector when conducting their intermediation task. Loans are a bank's primary concern as their output, while earnings assets signify the capital base, which a bank has earned through its investors and depositors. The ratio of these two hence signifies intermediation (Hasan et. al., 2009). In addition to these two primary ratios of intermediation, assets growth and gross loans growth are also the important output measures of a financial institution. Both of these measures indicate an increase in the business of lending by a bank, and hence are valid intermediation ratios (Sealey & Lindley, 1977).

We also use fee-income and non-deposit lending ratios to explain the business orientation of banks along with various bank specific financial and non-financial characteristics grouped under the acronym CAMELS that could have enabled Islamic banks to emerge as an important characteristic of reintermediated financial markets. For instance, equity ratio and total capital ratio for capital adequacy (C), loan loss reserves ratio and non-performing loans ratio for asset quality (A), cost-income ratio and overheads ratio for management (M), return on average equity and return on average assets for earnings quality (E), liquid assets ratio for liquidity (L), and employee-deposit ratio for service quality (S) have been used. In addition, we use fixed asset ratio (Fixed Assets/Total Assets), non-lending asset ratio (Non Loan Earning Assets/Total Earning Assets) and the natural logarithm of total assets as controls following (Beck et al., 2013).[7] While most of these measures have been used by Beck et al., (2013) in their analysis while investigating the business model, efficiency and stability of Islamic banks compared to conventional banks, some of these are unique to particular studies. For

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[7] This was done in order to control for the size of banks, and also because we wanted to ensure that our results are driven by only the lending business of the bank.

example, employee-deposit ratio has been used as a measure by Lages and Fernandes, (2005) in their multi-item instrument technique for measuring service personal values, though their analysis was not limited to studying the service quality of banks. Similarly, loan loss reserves ratio as a measure of asset quality has been used by Wanke et al., (2016) for performing an efficiency assessment of the Malaysian dual banking system. We use ratios directly from Bankscope, where they were available, while others have been constructed using two to three items in the database. Moreover, in line with the previous literature on intermediation (for example, Beck et. al., 2013), our variables are winsorized at 5% and 95%.

We include CAMELS variables because we wanted to explore whether customers are going to Islamic banks as they are more stable, better capitalized, liquid, efficient, profitable, and/ or their service quality was better than conventional banks. Although CAMELS variables have been used in the literature before[8], to the best of our knowledge, no study has attempted to use these measures in order to study the high/ low intermediation ratios of either conventional or Islamic banks. Moreover, we include service quality as one of our measures, which has been ignored by the existing literature. Service quality (S) in addition to financial ratios, aids in bringing customers' perspective in explaining the phenomenon of reintermediation. As discussed earlier, we believe it is imperative to assess the performance of Islamic and conventional banks vis-à-vis their service quality dimension, as it in fact forms the very essence of today's service-oriented banking sector activity.

3 Methodology

3.1 Baseline Model

Our empirical methodology is two-fold. First, we establish that reintermediation has in fact occurred, which is shown from intermediation regressions; and second, we analyze the financial and non-financial aspects of Islamic banks in comparison to the conventional banks in detail, which might provide us with a plausible explanation for these emerging trends.

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[8] Other studies which have used CAMELS measures include, but are not limited to, Cole and Gunther, (1995); Cole et al., (1993); Zhao et al., (2009); Seçme et al., (2009); Doumpos and Zopounidis, (2010); Maghyereh and Awartani, (2014); and Betz et al., (2014).

We use a panel data setting in LSDV (least square dummy variable) form with cross section weights. LSDV is essentially the fixed effects model and can conveniently replace it when the objective of the study requires inclusion of time-invariant variable (dummy or categorical) in the model(Beck et al., 2013).

$$BankVar_{it} = \alpha + \gamma IB_i + \beta_k X_{k,it} + \varepsilon_{i,t} \qquad (1)$$

Where $BankVar_{i,t}$ being dependent variable is the primary unit of interest, and a representation of bank specific variable for a bank i at time period t. At first we take several proxies of intermediation like asset growth, loan-deposit ratio, loan to earnings assets and gross loans growth and run regressions by considering each of them as $BankVar_{i,t}$.

Once and if the reintermediation is proved, we replace $BankVar_{i,t}$ with the CAMELS variables elaborated upon earlier to explore bank specific financial or non-financial characteristics acting as the probable reason of reintermediation by Islamic banks.

To establish the reintermediation by Islamic banks, and to see how Islamic banks behave differently from conventional banks with reference to other CAMELS variables, we primarily rely on the Islamic bank dummy IB_i, that takes the value of one for Islamic banks and zero otherwise. $X_{k,it}$ is a vector of bank specific control variables, and $\varepsilon_{i,t}$ is a white-noise error term.

In addition to running the baseline regression for our sample period $2004 - 2015$, we run the model for post-crisis period only in order to analyze the characteristics of Islamic and conventional banks post GFC given the fact that Islamic financial institutions received extraordinary attention after the global financial crisis.

3.2 Alternate Models

Some past studies have shown that performance and other characteristics of Islamic banks are dependent on the country and/or the region they operate in. Yudistra (2004) finds that Islamic banks in the Middle East are less efficient than those operating outside the region. Mohamad et. al. (2008) find that Islamic banks in Turkey are more cost efficient than those operating in Africa. Abdul-Majid et. al. (2010) conclude that country effects have a significant impact on bank performance measures. Imam and

Kpodar (2010) find that country effects are important for the development of Islamic banks in a specific country: Islamic banks flourish more in oil exporting countries with a large Muslim population and a greater income per capita.

Thus, the first alternate specification of the baseline model we run is according to income group classification of the countries. It is to see if the behavior of Islamic banks changes due to the fact how rich or poor the country of origination of the bank is. For this purpose, we divide our countries according to their income groups taken from World Bank country classification, which results into three income groups, high, upper middle and lower middle and we introduce the interaction terms between income group dummy and Islamic bank dummy to reach at equation 2.

$$BankVar_{i,t} = \alpha + \sum_p \omega_p \, IB_i * IG_i + \beta_k X_{k,it} + \varepsilon_{i,t} \tag{2}$$

The coefficients ω_p is the mean differential in bank specific variable(s) attributed only to the Islamic banks of countries that fall in a particular income group. It is important to note that the interaction of bank's type (Islamic vs Conventional) and the income group of country of origination (High, Upper Middle and Lower Middle) would yield six categories in total. As we want to capture the differential behavior of Islamic banks operating in the countries falling into different income groups, we keep only three categories related to Islamic banks in different regions and drop the remaining three categories of commercial banks so that their mean value would be encapsulated in the intercept term. The intercept would then be used as base group to estimate differential dummy coefficient of Islamic banks falling into three income groups.

Secondly, in order to explore further the differences in Islamic and conventional banks which are country specific in nature we introduce the interaction terms between each country dummy and IB, the dummy for Islamic bank to get to equation 3.

$$BankVar_{i,t} = \alpha + \sum_j \varphi_j \, IB_i * CY_i + \beta_k X_{k,it} + \varepsilon_{i,t} \tag{3}$$

The coefficients φ_j is the incremental value of specific variable(s) associated with Islamic banks in a particular country (j) for all countries included in our sample. Similar to the equation 2, intercept in equation 3 represents the mean value of specific variable(s) for commercial banks.

It is important to note that in equation 2 and 3, we drop the standalone Islamic bank dummy and focuses only on interaction terms to explore the behavior of Islamic

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banks either in a particular country or in a country with some specific income group. In all equations the differential behavior of Islamic banks has been explored through dummy coefficients with reference to the intercept (α) which is the mean value of the variable of interest associated with the "global average conventional bank" for the selected time period.

4 Results

4.1 Descriptive Statistics

Table 2 presents the descriptive statistics for our dataset. Although the winsorization of data excluded large outliers from our analysis, this table shows the presence of some small outliers in the dataset. For example, assets growth ranges from 50.35 to -24.69, which is a considerably large range. Similarly, the loan-deposit ratio ranges from 218.21 per cent, to less than 20 per cent, which is 18.82. However, we believe that this variation enables our dataset to be a representative sample of the banks in selected countries.

[Insert Table 2 here]

The Satterthwaite-Welch t-test shows that there is a significant difference between the means of measures across the two categories of banks, except for measures of asset quality, earnings quality, liquidity, and service quality. The finding that there is no statistically significant difference between asset quality, earnings quality and liquidity of conventional versus Islamic banks is supported by the literature (Bader et al., 2008; Beck et al., 2013). However, the observation that there is no statistically significant difference in service quality of the two categories of banks provides us with an interesting insight before we run our regression: perhaps, better service quality forms the very essence of today's service-oriented banking sector activity, and hence it is not only Islamic banks which are trying to improve their performance over this dimension, but it is possible that conventional banks are doing the same.

4.2 Baseline Regressions

Table 3 presents results for the baseline regressions. It compares Islamic and conventional banks on the selected measures while controlling for bank characteristics.

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At the one percent significance level[9], the Islamic bank dummy is significant in 11 out of the 16 regressions. The results tilt towards the idea that there is a significant difference between Islamic and conventional banks not only vis-à-vis intermediation ratios, but that these two types also differ with respect to the various measures studied to explain these reintermediation trends. To be precise, the Islamic bank dummy is positive and significant for all 4 measures of intermediation (column 1-4), which indicates high financial intermediation services being performed by these banks. However, among the CAMELS variables that might explain these high intermediation ratios, is the positive and significant Islamic dummy for capital ratios (column 7-8), management costs (Column 11), and liquidity (column 15), whereas significantly negative Islamic dummy for asset quality (Column 9-10), earning (column 13-14) and service quality (column 16). The R-squared for most panel regressions is high but it is the highest when a measure of service quality, that is the employee-deposit ratio, is included as a dependent variable. This result opposes what was seen with the raw data in the descriptive statistics. This suggests that when we control for non-lending business and other bank characteristics, and focus only on the lending business of banks, a significant difference can be seen between the service quality of the two categories of banks. Controlling for non-lending business also establishes our aim of explaining the lending behavioral differences between the two categories of banks based on intermediation, asset quality, capital adequacy, management efficiency, liquidity and/or earnings quality.

However, our main objective is to test different financial and non-financial aspects that either help Islamic banks in conducting activities pertaining to intermediation more vigorously or convince customers to prefer Islamic banks because they are more stable, better capitalized, liquid, efficient, profitable, and/or their service quality is better than conventional banks. From the results in Table 3, we can conclude at this point that various bank specific characteristics that may have enabled Islamic banks to emerge as an important player of reintermediated financial markets are better capital adequacy, better liquid assets ratio and better quality service, as compared to their conventional counterparts. In order to compete with conventional banks, Islamic banks would have to improve on their earnings quality and business orientation, those aspects in which

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[9] All analysis below is also based assuming a one percent significance level.

conventional banks are significantly better off than Islamic banks, as well as improve their management efficiency and asset quality, those aspects on which one cannot yet differentiate between the two categories of banks. Although we do believe that these results signify Islamic banks as important player of reintermediated financial markets, it will only be after these further steps that one would be able to say that Islamic banks have emerged as a competitive force for conventional banks.

[Insert Table 3 here]

Recent literature has also established that banks that have higher non-lending activities present a higher level of risk than banks that mainly perform traditional intermediation activities (Mercieca et al., 2006). Moreover, risk is mainly positively correlated with the share of fee-based activities but not with trading activities (Lepetit et al., 2014). If fee-income ratio is considered a proxy for non-lending activities yielding no interest income, this finding is reiterated in our results. When fee-income ratio is used as a dependent variable, the Islamic bank dummy is significant and its sign is negative. This shows that Islamic banks have significantly lower non-interest income and/or fee-based income than conventional banks, and hence can be said to be more stable and more intermediated.

4.3 Islamic Banks Post GFC

The length of the time period in our sample provides us with an opportunity to analyze banks in the post-crisis period. Islamic banks received a lot of attention among academics during the Global Financial Crisis of 2008, as they were believed to demonstrate more stability during the crisis as compared to their conventional counterparts (Beck et al., 2013; Demirgüç-Kunt and Huizinga, 2010). However, as identified in the introduction of this study, most of the research was restricted to studying the performance of Islamic banks during the crisis (Abedifar et al., 2015). We found it crucial to study whether Islamic banks continued to remain stable and have high intermediation ratios after the end of the crisis as it can support our reintermediation hypothesis by showing consistent high intermediation services. Therefore, our first robustness check was to run the regressions again by restricting the time period of the sample from 2010 to 2015, which we define as the post crisis period.

[Insert Table 4 here]

Table 4 presents the results of this analysis. These results are qualitatively similar to those for our baseline regressions, barring few exceptions that offer interesting insights about how the banking industry is reshaped during post-crisis period.

The most important thing to note is the significant increase in the intercept terms for the first four regressions primarily looking at the intermediation variables. As the intercept portrays the mean value of the variable concerned for a global average conventional bank, this increase suggests that conventional banks fight back and start regaining their market share in the lending activities previously lost to Islamic banks or other financial market players. Contrary to that no such claim can be made for Islamic banks as the results of Islamic Bank dummy in intermediation regressions, are primarily unchanged in post-crisis period. This reincarnation of conventional banks can also be confirmed from the intercept of fee income ratio which almost vanished during post-crisis period suggesting reduced reliance of conventional banks on non-lending activities, a journey back to the intermediation. Another point to ponder is the Islamic bank dummy is insignificant in the total capital ratio regression for the post crisis period, though this was significant in the full sample regressions. This can be due to more stringent capital requirements imposed on banks after the crisis, due to which capital ratios of banks could be expected to converge to similar levels, regardless of the categories of banks. Even before the crisis, it was acknowledged that high capital levels are associated with lower bankruptcy risks (Santos, 2001). It can also be observed that the banking business becomes costlier for all banks, conventional or Islamic, as suggested by the increase in both intercept and Islamic dummy. The percentage change (increase) in cost for Islamic banks is however significantly greater than for conventional banks during post crisis period. This finding is in line with the literature that states that Islamic banks have been, and continue to be cost inefficient, as their Shariah compliance process subjects them to additional layers of operating procedures (Abedifar et al., 2015). However, a contrasting argument is that if this was the case before the crisis, why was no significant difference reported among the cost-income ratios of conventional and Islamic banks before the crisis. An explanation for this can be that perhaps after facing a tough time during the

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crisis, conventional banks innovated and made cost-cutting a regular practice. However, this assertion will have to be checked further in future research. It is also evident that both conventional and Islamic banks started taking liquidity position more seriously as there is a significant improvement in liquidity ratios for both categories of banks post-crisis. This response might also be the outcome of the stringent capital requirement imposed by the regulators dealing exclusively with the liquidity position of banks. And finally there seems to be an improvement in service quality of both categories of banks in order to regain the confidence of customers shattered badly due to the crisis.

4.4   Islamic Banks vis-a-vis Income Group of Country

Table 5 presents results of another robustness check, where we divide the countries in our sample into three income groups, according to their World Bank income classifications, and re-run the analysis. This is motivated by the observation that recent literature on Islamic banks has advocated modeling cross-country bank cost and profit efficiency (Abedifar et al., 2015). However, the results have been mixed in this stream of research. For example, Mohamad et al., (2008) find no significant differences between cost, profit and revenue efficiency of Islamic versus conventional banks in their cross-country analysis, while (Johnes et al., 2009) find that Islamic banks are significantly less efficient than their conventional counterparts during a methodologically similar study.

[Insert Table 5 here]

The results in Table 5 highlight the differences in intermediation ratios and CAMELS measures across income group classifications. The findings show that as the economic situation of a country worsens, differences between Islamic and conventional banks become obscure. This could be because both categories of banks face certain political, foreign exchange, interest rate and regulatory risks in countries whose economics are not stable. Hence, the major objective of banks in these countries becomes economic risk management instead of focusing on asset quality and other such objectives. This finding is especially true for intermediation ratios, which represent one of the main objectives of this paper. For high income countries, a significant difference exists between Islamic and conventional banks for 3 out of 4 measures of intermediation. The Islamic banking dummy is positive and significant for the assets growth, loan to deposits

ratio and gross loans growth regressions. This high level of intermediation in high income countries is explained by the corresponding coefficients in the CAMELS regressions showing better cost efficiency, asset quality, liquidity, and high capitalization in the case for Islamic banks. Contrastingly, lower middle income countries report no significant coefficients for intermediation, with the exception of the assets growth regression that reports a positive and significant coefficient. Although the assets of Islamic banks appear to have grown, this cannot be attributed to loan growth, as their coefficients are insignificant and we cannot conclude that intermediation has increased. The lack of intermediation can be owed to the low capital adequacy, asset quality, high management costs and low liquidity shown in corresponding coefficients in the CAMELS regressions. For upper middle income countries, however, no real effect of intermediation can be found and no trends emerge in the CAMELS regressions.

For the results displayed in Table 6, we run the regressions based on income groups but now restrict the time period to 2010 to 2015, that is, for the post crisis period. However, the results are qualitatively similar to those reported in Table 5. High income countries still have high intermediation levels in the post crisis period. One important change appears to have occurred in the earning quality of Islamic banks, which is negative. However, management costs have also risen in the post crisis period, which may have depressed the true values for earning quality in the regressions. In the case of lower middle income countries, lending has increased, but through non deposit sources of funding. This is represented by the positive Islamic dummy coefficients for gross loans growth and loans to earning assets regressions. The negative coefficient of the Islamic banking dummy in the loans to deposits ratio is explained by the poor capitalization, low asset quality, high management costs and low liquidity for banks in these countries. Although the return on equity has risen immensely for these countries, this is not due to better earning quality, and possibly due to the higher risk after the crisis and the demand of equity holders to receive higher returns. Finally, upper middle income countries have a very positive and significant Islamic dummy coefficient for one out of four intermediation regressions. The coefficient for loans to earning assets regression is highly positive and significant, while the corresponding coefficient in the gross loans growth

regression is negative. It appears that earning assets have decreased more than the fall in gross loans growth, and reintermediation has not actually occurred in these countries.

[Insert Table 6 here]

4.5   Islamic Banks at Country Level

In addition to controlling for income groups, we find it important to model for cross-country variations because of the differing types and levels of risk inherent in the banking business for different economies. This intuition is supported by findings in recent literature as for example, while comparing Islamic and conventional banks, Abdul-Majid et al., (2010) concluded that country effects have a significant impact on efficiency differentials. Imam and Kpodar, (2010) and Abedifar et al., (2015) emphasize that cross-country analysis is vital while studying Islamic banking characteristics. This is true in our sample too, as we find a lot of cross-country variation in intermediation trends and their possible drivers. Table 7 displays regression results for each country used in this sample, and we find that not all countries have experienced high intermediation in Islamic banks. For Kuwait, Malaysia, Pakistan and Syria, the coefficients are negative for several regressions: Islamic banks in these countries significantly underperform conventional banks, with respect to the CAMELS measures used. For instance, with the exception of Pakistan, the coefficient of the Islamic dummy in the service quality regression is negative. For a dual banking system economy such as Malaysia, this is a counterintuitive result as Islamic banks in such a country could be expected to provide superior service quality to their customers, owing to legislative and regulatory benefits.

[Insert Table 7 here]

However, of the countries that do report high intermediation levels, we note that the roles of the CAMELS variables in explaining banking performance are not consistent across countries. Interestingly, two of the CAMELS variables do emerge as key explanatory components for high intermediation. These are 'capital adequacy', proxied by the total capital ratio, and 'liquidity', proxied by the liquid assets ratio. With the exception of Qatar in the case of the liquidity regression, and Kenya and Bangladesh in the total capital ratio regression, all countries that reported high intermediation for Islamic banks also had better capitalized and more liquid banks. Additionally, the lack of

these two strengths also appears to have contributed to low intermediation levels reported in other countries in the sample. Earlier, these two variables were found to be highly significant in explaining intermediation on the global scale, as displayed in the baseline regressions in Table 3. This helps us conclude that capital adequacy and liquidity are the two prominent drivers of reintermediation in the global banking sector, and are robust to cross-country variations.

5   Conclusion

Conventional banks which once were competing with non-banking financial institutions and capital market today face the new challenge of being reintermediated by Islamic banks. Earlier academic research has been debating over disintermediation and reintermediation of conventional banks, but consistently failed to address reintermediation through Islamic banks as a possibility. This study therefore addresses this novel possibility that is the reintermediation within the banking sector. Moreover, the literature that has barely touched upon the intermediation in Islamic and conventional banks has focused only the recent Global Financial Crisis, and resultantly fails to explain overall reintermediation trends in the global system. This study also fills this large gap in the literature and is the first to our knowledge to analyzes and compares Islamic and conventional banks from the perspective of reintermediated financial markets.

The analysis evaluates the trends in the growth of banks' assets and loans, loan to deposit ratio, and loans as a ratio of total earning asset for both conventional and Islamic banks; and thus identifies the intermediation patterns within the banking sector. Another important contribution of this study is that it uses several bank specific financial and non-financial characteristics that might have enabled Islamic banks to emerge as an important player in reintermediated financial markets. Specifically, the business model of Islamic and conventional banks is analyzed using the CAMELS framework where various known ratios have been used to proxy the components of CAMELS. A slight variation in the model, however, is the replacement of "Sensitivity to Market Risk" in the CAMELS framework with "Service Quality". We believe this variable is important in explaining the performance of banks as they belong to a service oriented industry. By bringing the

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customers' perspective into analysis, another major contribution is made in the research regarding banking sector activity.

The findings help conclude the existence of reintermediation trends "*within*" the global banking sector and the results are robust to different regressions specifications. Islamic banks showed high intermediation ratios as compared to conventional banks for the entire sample period; and among the CAMELS variables, better capitalization and liquidity stood out as plausible drivers for this trend. The analysis for only post GFC also helped us capture some interesting reintermediation trends in recent years. For example, after crisis, service quality appeared to have improved in the case of both Islamic and conventional banks, which probably could be the outcome of lost business and market share during GFC times forcing these banks to care more for the customers. The increased global attention on the financial system and lack of decency in relation to customers after the GFC is highlighted by Belás (2013), who also states the importance of customer satisfaction for commercial banks. Moreover, conventional banks appeared to be more reliant on lending activities, hinting at comparatively higher intermediation in their case after the recent crisis. When income effects are accounted for by categorizing countries into different income groups, it appeared to have impact on the intermediation ratios and trends in CAMELS variables. For example, Islamic banks in high-income countries performed high intermediation services; and attached with this high lending business was the high quality of their asset, low cost and better liquidity and capitalization condition. Contrarily, Islamic banks in lower income countries showed low intermediation services which were linked with their poor asset quality, high cost, low liquidity and low capitalization. These two results support our earlier inference about the possible drivers of high intermediation services which are at least the better liquidity and high capitalization. Lastly, cross-country variations are identified when the analysis is carried out separately for each country in the analysis. It is interesting to highlight that even with cross-country variations in intermediation trends, we were still able to identify that the countries in which Islamic banks showed high intermediation ratios, had high liquidity and were better capitalized; and the reverse was true for countries which experienced less intermediation by Islamic banks; thus making liquidity and capitalization the important drivers for intermediation.

Towards the end, this study links two important streams of literature in banking and financial markets: reintermediation, and the performance comparison between Islamic and conventional banks. Based on our initial hypothesis, our results prove that conventional banks, once the major player in financial market; and were competing with the capital market and NBFIs, could become substitutable by their new competitor because of their better liquidity and high capitalization; and this presents reintermediation within the global banking sector. The idea of Islamic banks replacing conventional banks however, is not put forth as an immediate event, but a likely upcoming possibility. Moreover, the idea neither excludes the challenges posed to conventional banks by other sources (e.g., FIN TECH) which are paving the path for a term now growing in prominence, "Cybermediation"[10], nor the challenges by the already existing players (e.g., NBFIs, capital market) to the overall global banking sector.

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[10] Cybermediation (http://www.jamieparfitt.com/blog/2014/5/4/disintermediation-reintermediation-and-cybermediation)

6   Bibliography

Abdul-Majid, M., Saal, D.S., Battisti, G., 2010. Efficiency in Islamic and conventional banking: an international comparison. J. Product. Anal. 34, 25–43. doi:10.1007/s11123-009-0165-3

Abdul-Majid, M., Saal, D.S. and Battisti, G., 2011a. Efficiency and total factor productivity change of Malaysian commercial banks. *The Service Industries Journal*, *31*(13), pp.2117-2143.

Abdul-Majid, M., Saal, D. S., & Battisti, G., 2011b. The impact of Islamic banking on the cost efficiency and productivity change of Malaysian commercial banks. *Applied Economics*, 43 (16): 2033–3054.

Abedifar, P., Ebrahim, S., Molyneux, P., Tarazi, A., 2015. Islamic Banking and Finance: Recent Empirical Literature and Directions for Future Research. Cent. Responsible Bank. Financ.

Allen, F., Gale, D., 1997. Financial Markets , Intermediaries , and Intertemporal Smoothing. J. Polit. Econ. 105, 523–546.

Allen, F., Santomero, A.M., 1998. On the theory of financial intermediation. J. Bank. Financ. 21, 1461–1485. doi:10.1007/BF01388162

Bader, M.K., Mohamad, S., Ariff, M., Hassan, T., 2008. Cost, Revenue, and Profit Efficiency of Islamic versus Conventional Banks: International Evidence using Data Envelopment Analysis. Islam. Econ. Stud. 15.

Baele, L., Farooq, M., Ongena, S., 2014. Of religion and redemption: Evidence from default on Islamic loans. J. Bank. Financ. 44, 141–159. doi:10.1016/j.jbankfin.2014.03.005

Beck, T., Demirgüç-Kunt, A., & Levine, R., 2009. Financial Institutions and markets across countries and over time: Data and analysis. Policy Research Working Paper 4943. The World Bank.

Beck, T., Demirgüç-Kunt, A., Merrouche, O., 2013. Islamic vs. conventional banking: Business model, efficiency and stability. J. Bank. Financ. 37, 433–447. doi:10.1016/j.jbankfin.2012.09.016

Belás, J., 2013. The Impact of the Financial Crisis on Business Ethics in the Banking

Sector: A Case Study from Slovakia. Review of Economic Perspectives. 13, 111-131. doi: 10.2478/revecp-2013-0004

Bernanke, B.S., 1988. Monetary Policy Transmission Through Money or Credit? Fed. Reserv. Bank Philadelphia Bus. Rev. 3–11.

Betz, F., Oprică, S., Peltonen, T.A., Sarlin, P., 2014. Predicting distress in European banks. J. Bank. Financ. 45, 225–241. doi:10.1016/j.jbankfin.2013.11.041

Bhattacharya, S., Thakor, A. V., 1993. Bhattacharya & Thakor, 1993.pdf. J. Financ. Intermediation 2, 2–50.

Cole, R.A., Cornyn, B.G., Gunther, J.W., 1993. FIMS : A New Financial Institutions Monitoring System for Banking Organizations.

Cole, R.A., Gunther, J.W., 1995. A CAMEL rating's shelf life. Fed. Reserv. Bank Dallas Rev. 13–20. doi:10.2139/ssrn.1293504

Deidda, L., Fattouh, B., 2008. Banks, financial markets and growth. J. Financ. Intermediation 17, 6–36. doi:10.1016/j.jfi.2006.04.003

Demirgüç-Kunt, A., Huizinga, H., 2010. Bank activity and funding strategies: The impact on risk and returns. J. financ. econ. 98, 626–650. doi:10.1016/j.jfineco.2010.06.004

DeYoung, R., Torna, G., 2013. Nontraditional banking activities and bank failures during the financial crisis. J. Financ. Intermediation 22, 397–421. doi:10.1016/j.jfi.2013.01.001

Domowitz, I., 2001 Liquidity, transaction costs, and reintermedi- ation in electronic markets. J. Financ. Intermediation 22 141-157

Doumpos, M., Zopounidis, C., 2010. A multicriteria decision support system for bank rating. Decis. Support Syst. 50, 55–63. doi:10.1016/j.dss.2010.07.002

EY, (2016). World Islamic Banking Competitiveness Report. http://www.ey.com/Publication/vwLUAssets/ey-world-islamic-banking-competitiveness-report-2016/$FILE/ey-world-islamic-banking-competitiveness-report-2016.pdf

El-Gamal, M. and Inanoglu, H., 2002. Efficiencies and unobserved heterogeneity in Turkish banking: 1990-2000.

Fang, L., Ivashina, V., Lerner, J., 2015. The disintermediation of financial markets: Direct investing in private equity. J. financ. econ. 116, 160–178.

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doi:10.1016/j.jfineco.2014.12.002

Farooq, M. and Zaheer, S., 2015. Are Islamic banks more resilient during financial panics?. Pac. Econ. Rev., 20(1), pp.101-124.

Gheeraert, L., 2014. Does Islamic finance spur banking sector development? J. Econ. Behav. Organ. 103, S4–S20. doi:10.1016/j.jebo.2014.02.013

Goldfeld, S.M., Jaffee, D.M., 1970. American Finance Association The Determinants of Deposit-Rate Setting by Savings and Loan Associations. J. Finance 25, 615–632.

Gurley, J.G., Shaw, E.S., 1955. Financial aspects of economic development. Am. Econ. Rev. 45, 515–538.

Hasan, I., Koetterb, M., Lensinkb, R., & Meestersb, A. J., 2009. Bank efficiency, financial depth, and economic growth. Working Paper, Cass Business School, University of London.

Hasan, M., Dridi, J. 2010. The Effects of the Global Crisis on Islamic and Conventional Banks: A Comparative Study. IMG Working Paper # WP/10/201

Hendershott, P.H., 1971. Financial Disintermediation in a Macroeconomic Framework. J. Financ. 26, 843–856.

Imam, P., Kpodar, K., 2010. Islamic Banking: How Has it Diffused? IMF Work. Pap. WP/10/195, 1–18. doi:10.2753/REE1540-496X490607

Johnes, J., Izzeldin, M., Pappas, V., 2009. Efficiency in Islamic and conventional banks: A comparison based on financial ratios and data envelopment analysis. J. Dep. Econ. Lancaster Univ. 1–45.

Johnston, R., 1997. Identifying the critical determinants of service quality in retail banking: importance and effect, International Journal of Bank Marketing, Vol. 15 Iss: 4, pp.111 - 116 doi:http://dx.doi.org/10.1108/02652329710189366

Jonghe, O. De, 2009. Back to the Basics in Banking? A micro-analysis of banking system stability, European Banking Center Discussion Paper No. 2009-13S.

King, R.G., Levine, R., 1993. Financial Intermediation and Economic Development, in: Capital Markets and Financial Intermediation. pp. 156–189.

Lages, L.F., Fernandes, J.C., 2005. The SERPVAL scale: A multi-item instrument for measuring service personal values. J. Bus. Res. 58, 1562–1572. doi:10.1016/j.jbusres.2004.10.001

Lepetit, L., Nys, E., Rous, P., Tarazi, A., 2014. Bank income structure and risk : An empirical analysis of European banks Bank income structure and risk : An empirical analysis of European banks.

Maghyereh, A.I., Awartani, B., 2014. Bank distress prediction: Empirical evidence from the Gulf Cooperation Council countries. Res. Int. Bus. Financ. 30, 126–147. doi:10.1016/j.ribaf.2013.07.001

Mercieca, S., Shaeck, K., Wolfe, S., 2006. Small European Banks : Benefits from Diversification ? J. Bank. Financ. doi:10.1016/j.jbankfin.2007.01.004

Merton, R.C., Bodie, Z., 1995. A Conceptual Framework for Analyzing the Financial Environment. Glob. Financ. Syst. A Funct. Perspect. doi:10.2139/ssrn.6638

Mohamad, S., Hassan, T., Bader, M.K.I., 2008. Efficiency of Conventional versus Islamic Banks : International Evidence using the Stochastic Frontier Approach (SFA). J. Islam. Econ. Bank. Financ. 4, 107–130. doi:10.1080/09593960500049381

Morrison, A.D., 2005. Credit Derivatives, Disintermediation, and Investment Decisions. J. Bus. 78, 621–648. doi:10.1086/427641

Pagano, M., 1993. Financial Markets and Growth. Eur. Econ. Rev. 37, 613–622.

Rajan, R., 2006. Has finance made the world riskier?. European Financial Management 12 499-533.

Ranjith, P.V., 2013. Service Quality in Banking. International Journal of Management Research and Reviews, 3(9), p.3463.

Rashwan, M.H., 2010. A comparison between Islamic and traditional banks: Pre and post the 2008 financial crisis. Available at SSRN: http://ssrn.com/abstract=1724451 or doi:10.2139/ssrn.1724451.

Saeed, M., Izzeldin, M., 2014. Examining the relationship between default risk and efficiency in Islamic and conventional banks. J. Econ. Behav. Organ. doi:10.1016/j.jebo.2014.02.014

Santos, J., 2001. Bank capital regulation in contemporary banking theory: A review of the literature. Financ. Mark. Institutions Instruments 32. doi:10.1111/1468-0416.00042

Schmidt, R.H., Hackethal, A., Tyrell, M., 1999. Disintermediation and the Role of Banks in Europe: An International Comparison. J. Financ. Intermediation 8, 36–67.

doi:10.1006/jfin.1998.0256

Scholtens, B., Wensveen, D. Van, 2000. A critique on the theory of financial intermediation. J. Bank. Financ. 24, 1243–1251. doi:10.1016/S0378-4266(99)00085-0

Seçme, N.Y., Bayrakdaroğlua, A., Kahraman, C., 2009. Fuzzy performance evaluation in Turkish Banking Sector using Analytic Hierarchy Process and TOPSIS. Expert Syst. Appl. 36, 11699–11709. doi:10.1016/j.eswa.2009.03.013

Sealey, C., Lindley, J.T., 1977. Inputs, outputs and a theory of production and cost at depository dinancial institution. J. Financ. 32, 1251-1266.

Thakor, A. V., 1996. The design of financial systems: An overview. J. Bank. Financ. 20, 917–948. doi:10.1016/0378-4266(95)00033-X

Wanke, P., Azad, M.A.K., Barros, C.P., 2016. Financial distress and the Malaysian dual baking system: A dynamic slacks approach. J. Bank. Financ. 66, 1–18. doi:10.1016/j.jbankfin.2016.01.006

Yudistra. D. (2004) Efficiency in Islamic banking: An empirical analysis of eighteen banks. Islamic Economic Studies, 12 (1), 1-19.

Zhao, H., Sinha, A.P., Ge, W., 2009. Effects of feature construction on classification performance: An empirical study in bank failure prediction. Expert Syst. Appl. 36, 2633–2644. doi:10.1016/j.eswa.2008.01.053

Table 1
Structure of Banking Sector in Sample

Country	Income Group	Bank Type		Listing			Total
		Conventional	Islamic	Delisted	Listed	Unlisted	
Bahrain	High	10 (35.71%)	18 (65.29%)	0 (0.00%)	11 (1.69%)	17 (2.61%)	28
Bangladesh	Lower Middle	40 (83.33%)	8 (16.67%)	0 (0.00%)	30 (4.60%)	18 (2.76%)	48
Brunei*	NA	0 (0.00%)	1 (100.00%)	0 (0.00%)	0 (0.00%)	1 (0.15%)	1
Egypt	Lower Middle	23 (88.46%)	3 (11.54%)	10 (1.53%)	10 (1.53%)	6 (0.92%)	26
Indonesia	Lower Middle	91 (90.10%)	10 (9.90%)	2 (0.31%)	40 (6.31%)	59 (9.05%)	101
Iraq	Upper Middle	8 (53.33%)	7 (46.67%)	0 (0.00%)	10 (1.53%)	5 (0.77%)	15
Iran	Upper Middle	1 (5.88%)	16 (94.12%)	0 (0.00%)	7 (1.07%)	10 (1.53%)	17
Jordan	Upper Middle	11 (78.57%)	3 (21.43%)	0 (0.00%)	12 (1.84%)	2 (0.31%)	14
Kenya	Lower Middle	32 (94.12%)	2 (5.88%)	0 (0.00%)	7 (1.07%)	27 (4.14%)	34
Kuwait	High	5 (38.46%)	8 (61.54%)	0 (0.00%)	12 (1.84%)	1 (0.15%)	13
Lebanon*	NA	0 (0.00%)	1 (100.00%)	0 (0.00%)	0 (0.00%)	1 (0.15%)	1
Malaysia	Upper Middle	33 (64.71%)	18 (35.29%)	0 (0.00%)	4 (0.61%)	47 (7.21%)	51
Maldives*	NA	0 (0.00%)	1 (100.00%)	0 (0.00%)	0 (0.00%)	1 (0.15%)	1
Mauritania*	NA	0 (0.00%)	1 (100.00%)	0 (0.00%)	0 (0.00%)	1 (0.15%)	1
Nigeria*	NA	0 (0.00%)	1 (100.00%)	0 (0.00%)	0 (0.00%)	1 (0.15%)	1
Oman	High	6 (75.00%)	2 (25.00%)	0 (0.00%)	6 (0.92%)	2 (0.31%)	8
Pakistan	Lower Middle	22 (73.33%)	8 (26.67%)	0 (0.00)	25 (3.83%)	5 (0.77%)	30
Palestine	Lower Middle	3 (60.00%)	2 (40.00%)	0 (0.00)	3 (0.46%)	2 (0.31%)	5
Philippines*	NA	0 (0.00%)	1 (100.00%)	0 (0.00%)	0 (0.00%)	1 (0.15%)	1
Qatar	High	7 (58.33%)	5 (41.67%)	0 (0.00%)	8 (1.23%)	4 (0.61%)	12
Saudi Arabia	High	8 (61.54%)	5 (38.46%)	0 (0.00%)	12 (1.84%)	1 (0.15%)	13
Senegal*	NA	0 (0.00%)	1 (100.00%)	0 (0.00%)	0 (0.00%)	1 (0.15%)	1
Singapore*	NA	0 (0.00%)	1 (100.00%)	0 (0.00%)	0 (0.00%)	1 (0.15%)	1
South Africa*	NA	0 (0.00%)	1 (100.00%)	0 (0.00%)	0 (0.00%)	1 (0.15%)	1
Sudan	Lower Middle	3 (17.65%)	14 (82.35%)	0 (0.00%)	9 (1.38%)	8 (1.23%)	17
Syria	Lower Middle	9 (81.82%)	2 (18.18%)	0 (0.00%)	9 (1.38%)	2 (0.31%)	11
Thailand*	NA	0 (0.00%)	1 (100.00%)	0 (0.00%)	0 (0.00%)	1 (0.15%)	1
Tunisia*	NA	0 (0.00%)	1 (100.00%)	0 (0.00%)	0 (0.00%)	1 (0.15%)	1
Turkey	Upper Middle	34 (87.18%)	5 (12.82%)	2 (0.31%)	12 (1.84%)	25 (3.83%)	39
UAE	High	19 (65.52%)	10 (34.48%)	2 (0.31%)	20 (3.07%)	7 (1.07%)	29
UK	High	117 (96.69%)	4 (3.31%)	6 (0.92%)	3 (0.46%)	112 (17.18%)	121
Tanzania*	NA	0 (0.00%)	1 (100.00%)	0 (0.00%)	0 (0.00%)	1 (0.15%)	1
Yemen	Lower Middle	4 (50.00%)	4 (50.00%)	0 (0.00%)	0 (0.00%)	8 (1.23%)	8
Total		**486**	**166**	**22**	**250**	**380**	**652**

Note: Table 1 provides an overview of the banking sector in the countries included in our sample. The banks comprise conventional and Islamic banks, which are categorised as listed, unlisted and delisted. The countries in the sample are classified into different income groups: High, Upper Middle and Lower Middle as per the World Bank classifications.

The countries marked with * are those which were excluded from analysis as they had only one Islamic bank.

Table 2
Descriptive Statistics

Variables	Estimation	Mean	Median	Max	Min.	Std. Dev.	Obs.	Conv. Mean	Islamic Mean	Satterthwaite-Welch t-test*
Intermediation										
Assets Growth	y-o-y growth of log of Assets	10.7672	9.4686	50.3455	-24.6895	18.6427	4432	10.2938	12.3209	0.0028
Loan-Deposit Ratio	Loans / Customer Deposits	89.4549	84.2450	218.2095	18.8245	45.6967	4404	87.5896	96.0585	0.0000
Loan to Earning Assets	Gross Loans / Total Earning Assets	60.2520	65.4719	93.6864	9.7556	23.6064	4759	59.4129	63.0499	0.0000
Gross Loan Growth	y-o-y growth of log of Gross Loans	13.1376	11.2911	66.8395	-30.7993	23.2325	4276	12.4086	15.6486	0.0005
Business Orientation										
Fee Income Ratio	Fee Income / Total Operating Income	17.6575	15.9325	50.8078	0.6186	12.3184	4539	18.1588	15.8696	0.0000
Non-deposit Lending Ratio	Long Term Funding / Total Funding	9.3235	4.2606	48.4730	0.0000	12.8723	2842	7.9848	15.7336	0.0000
Capital Adequacy										
Equity Ratio	Equity / Total Assets	16.8036	12.3066	56.2908	3.9386	13.3750	4893	15.2878	21.6818	0.0000
Total Capital Ratio	Tier 1 + Tier 2 capital / Risk-weighted assets	21.0940	17.3300	53.0770	10.5000	10.7990	3378	20.6096	22.9845	0.0000
Asset Quality										
Loan Loss Reserves Ratio	Loan Loss Reserves / Gross Loans	4.6947	2.7870	24.5664	0.3877	5.6047	4205	4.6441	4.8854	0.2639
Non-Performing Loans Ratio	Non-Performing Loans / Gross Loans	6.5518	3.5650	33.8100	0.3400	7.9661	3310	6.5300	6.6560	0.7380
Management										
Cost to Income Ratio	Overheads/ (Net Interest Revenue + Other Operating Income)	57.0241	52.9135	107.6086	24.0292	22.7569	4754	56.2634	59.5038	0.0001
Overheads Ratio	Overheads / Total Assets	2.8026	2.3154	7.5918	0.7280	1.8426	4835	2.6939	3.1487	0.0000
Earning Quality										
ROAE	Net income/ Average Equity	10.2776	10.1480	31.4840	-10.9750	10.2225	4874	10.4819	9.6229	0.0142
ROAA	Net Income / Average Assets	1.3261	1.1760	4.4516	-1.8693	1.4859	4878	1.3051	1.3934	0.1143
Liquidity										
Liquid Assets Ratio	Liquid Assets / Total Deposits and Borrowings	39.8927	29.0150	121.5568	8.5908	31.3267	4725	39.5515	41.0278	0.2021
Service Quality										
Employee-Deposit Ratio	Number of Employees / Customer Deposits	28.0814	4.8953	26874.5400	0.0009	546.954	2566	27.8591	29.2535	0.9278
Control										
Total Assets	Log of Total Assets	14.4758	14.3969	17.8557	11.1482	1.8992	4893	14.5275	14.3093	0.0005
Fixed Asset Ratio	Fixed Assets / Total Assets	1.6069	1.0865	5.8821	0.0536	1.5695	4752	1.4103	2.2364	0.0000
Non-lending Asset Ratio	Other Earning Assets / Total Assets	39.7777	34.5281	90.6080	6.5397	23.6306	4759	40.6118	36.9968	0.0000

*Test allows for unequal cell variances

Note: Table 2 displays the descriptive statistics for the range of variables used in the regression analysis for this study. The Satterthwaite-Welch t-test is used to establish whether there is a statistically significant difference between the mean values of the measures of Islamic and conventional banks.

Table 3
Intermediation and Variables Explaining Reintermediation between Islamic and Conventional Banks - Controlling for Bank Characteristics for Sample Period 2004 - 2015

Table 3 Base Case

Intermediation and Variables Explaining Reintermediation between Islamic and Conventional Banks - Controlling for Bank Characteristics for Sample Period 2004 – 2015

Variable	Intermediation				Business orientation and Capital adequacy				Asset Quality		Management		Earning Quality		Liquidity	Service quality
	Assets Growth	Loan-deposit Ratio	Loan to Earning Assets	Gross Loans Growth	Fee Income Ratio	Non-deposit lending Ratio	Equity Ratio	Total Capital Ratio	Loan Loss Reserves Ratio	Non-Performing Loans Ratio	Cost to Income	Overheads Ratio	ROAE	ROAA	Liquid Assets Ratio	Employee-Deposit Ratio
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
C	19.61589***	87.6433***	27.3758***	29.9455***	6.9165***	8.0978***	37.3323***	35.4654***	2.8778***	9.0846***	88.4879***	6.0160***	-4.3499***	1.0866***	39.7447***	32.8882***
	(3.6808)	(3.2619)	(1.4127)	(4.6939)	(1.0085)	(1.4664)	(0.5407)	(0.4106)	(0.3508)	(0.5118)	(0.9510)	(0.0562)	(0.6318)	(0.1044)	(1.4054)	(0.6878)
Islamic dummy	1.845259**	2.4315***	4.8941***	1.7897**	-2.6439***	5.6252***	3.1361***	0.8683***	-0.0930*	-0.4456***	1.3150**	-0.0315	-1.0531***	-0.1001***	1.7228***	-1.4861***
	(0.7893)	(0.5205)	(0.5567)	(0.8218)	(0.0893)	(0.4391)	(0.1019)	(0.2298)	(0.0504)	(0.1179)	(0.5716)	(0.0221)	(0.1822)	(0.0327)	(0.2177)	(0.2390)
Ln (Total assets)	-0.5666*	1.8913***	2.2147***	-1.0195***	0.5603***	-0.2479**	-1.8002***	-1.4041***	-0.0859***	-0.4965***	-2.6753***	-0.2567***	1.1288***	0.0213***	-2.1531***	-1.7006***
	(0.2468)	(0.2195)	(0.0792)	(0.3173)	(0.0635)	(0.1030)	(0.0343)	(0.0364)	(0.0219)	(0.0278)	(0.0752)	(0.0030)	(0.0361)	(0.0044)	(0.0890)	(0.0360)
Fixed Assets	0.2516	-1.8779***	0.9475***	0.0252	0.0524	0.1277	0.7717***	0.1529*	0.6676***	1.2994***	1.9723***	0.3700***	0.1738***	0.0659***	0.3176*	2.6871***
	(0.1692)	(0.2207)	(0.2199)	(0.2344)	(0.0923)	(0.1276)	(0.0539)	(0.0886)	(0.0319)	(0.0938)	(0.1531)	(0.0085)	(0.0605)	(0.0080)	(0.1708)	(0.0721)
Non-lending assets	-0.0304	-0.7908***		-0.0740***	0.0558***	0.0385***	0.0381***	0.1255***	0.0320***	0.0562***	0.0723***	-0.0064***	-0.0441***	-0.0060***	0.7300***	-0.0698***
	(0.0247)	(0.0155)		(0.0142)	(0.0066)	(0.0132)	(0.0043)	(0.0082)	(0.0022)	(0.0064)	(0.0147)	(0.0004)	(0.0062)	(0.0009)	(0.0090)	(0.0029)
Obs.	4229	4348	4652	4186	4353	2771	4652	3304	4150	3284	4554	4613	4640	4643	4567	2497
Cross Sections	602	575	605	602	591	427	605	487	566	486	603	604	605	605	599	431
R-Sq.	0.0173	0.5436	0.1295	0.0397	0.1237	0.1259	0.5864	0.3750	0.2486	0.4423	0.4398	0.6219	0.2026	0.0595	0.6792	0.7180

Note: *** for p< .01; ** for p< .05; * for p< .10

Note: Table 3 reports the results for the baseline regression run to identify trends of reintermediation in the global banking market. As can be seen by the significance of the Islamic banking dummy, the performance of Islamic banks is positive and significant in most cases, and Islamic banks are seen to be an important characteristic of the reintermediated international market.

Table 4

Intermediation and Variables Explaining Reintermediation between Islamic and Conventional Banks - Controlling for Bank Characteristics & Post Crisis Period 2010 – 2015

Table 4 with Crisis

Intermediation and Variables Explaining Reintermediation between Islamic and Conventional Banks - Controlling for Bank Characteristics & Post Crisis Period 2010 – 2015

Variables	Intermediation				Business orientation and Capital adequacy				Asset Quality		Management		Earning Quality		Liquidity	Service quality
	Assets Growth	Loan-deposit Ratio	Loan to Earning Assets	Gross Loans Growth	Fee Income Ratio	Non-deposit lending Ratio	Equity Ratio	Total Capital Ratio	Loan Loss Reserves Ratio	Non-Performing Loans Ratio	Cost to Income	Overheads Ratio	ROAE	ROAA	Liquid Assets Ratio	Employee-Deposit Ratio
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
C	26.2054***	102.6804***	29.7539***	35.5961***	0.5107	16.6448***	38.9457***	36.6815***	0.6143***	6.1124***	95.7034***	6.3722***	-3.5319***	0.5864***	42.8246***	38.8256***
	(1.8971)	(2.7227)	(1.9774)	(2.4995)	(0.3853)	(1.3534)	(0.7846)	(0.3665)	(0.1756)	(0.5013)	(1.1520)	(0.0603)	(0.6731)	(0.0926)	(0.9246)	(0.4815)
Islamic dummy	0.6964	2.1132***	5.1919***	1.6606***	-2.0328***	3.3233***	2.7127***	0.2680	0.1401**	-0.3472***	3.3137***	0.0333	-1.1359***	-0.1747***	2.7297***	-0.8020***
	(0.4612)	(0.3988)	(0.3751)	(0.3301)	(0.1235)	(0.4443)	(0.2687)	(0.1667)	(0.0549)	(0.1129)	(0.3753)	(0.0258)	(0.1803)	(0.0229)	(0.2192)	(0.1169)
Ln (Total assets)	-1.0357***	0.7902***	2.2084***	-1.3922***	0.8573***	-0.7311***	-1.9141***	-1.4200***	0.0378***	-0.3604***	-3.1491***	-0.2820***	1.0478***	0.0491***	-2.2979***	-1.9850***
	(0.1440)	(0.1687)	(0.0930)	(0.1288)	(0.0228)	(0.0700)	(0.0478)	(0.0231)	(0.0072)	(0.0301)	(0.0796)	(0.0039)	(0.0304)	(0.0032)	(0.0620)	(0.0235)
Fixed Assets	-0.0946	-2.3238***	0.7709***	-0.3285	0.5826***	-0.1501	0.7050***	-0.2653***	0.7310***	1.5651***	1.1892***	0.3268***	0.2947***	0.1077***	-0.1781	2.1186***
	(0.0765)	(0.2260)	(0.2038)	(0.2443)	(0.0676)	(0.0917)	(0.0716)	(0.0546)	(0.0393)	(0.0742)	(0.0861)	(0.0104)	(0.0599)	(0.0085)	(0.1231)	(0.0668)
Non-lending assets	-0.0672***	-0.7362***		-0.1334***	0.0588***	0.0349***	0.0603***	0.1194***	0.0436***	0.0915***	0.1347***	-0.0038***	-0.0704***	-0.0070***	0.6895***	-0.0811***
	(0.0083)	(0.0047)		(0.0110)	(0.0029)	(0.0082)	(0.0039)	(0.0092)	(0.0020)	(0.0027)	(0.0100)	(0.0004)	(0.0056)	(0.0009)	(0.0058)	(0.0017)
Obs.	2710	2750	2945	2691	2803	1639	2945	2218	2697	2198	2901	2929	2938	2940	2892	1659
Cross Sections	597	566	600	597	585	392	600	474	562	474	597	599	600	600	593	388
R-Square	0.1357	0.5829	0.2053	0.1217	0.2261	0.2040	0.6595	0.4465	0.3092	0.5342	0.4323	0.6818	0.3737	0.1884	0.7016	0.8079

Note: *** for p< .01; ** for p< .05; * for p< .10

Note: Table 4 shows the results for the first robustness check that is to run the baseline regressions by restricting the time period of the sample from 2010 to 2015, which is defined as the post crisis period.

Table 5

Intermediation and Variables Explaining Reintermediation between Islamic and Conventional Banks - Controlling for Income Group for Sample Period 2004 – 2015

Table 5															
Comparing Islamic and Conventional Banks - Controlling for Bank Characteristics & Income Group															
	Intermediation				**Business orientation and Capital adequacy**				**Asset Quality**		**Management**		**Earning Quality**		**Liquidity**	**Service quality**
Variables	Assets Growth	Loan-deposit Ratio	Loan to Earning Assets	Gross Loans Growth	Fee Income Ratio	Non-deposit lending Ratio	Equity Ratio	Total Capital Ratio	Loan Loss Reserves Ratio	Non-Performing Loans Ratio	Cost to Income	Overheads Ratio	ROAE	ROAA	Liquid Assets Ratio	Employee-Deposit Ratio
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Constant	20.1413***	88.8333***	31.1863***	30.3613***	5.4456***	5.1606***	41.1030***	37.9219***	3.1166***	8.8546***	88.8213***	5.9389***	-4.1838***	1.0129***	43.0929***	29.9465***
	(3.7515)	(3.4012)	(1.2121)	(4.5376)	(1.0376)	(1.2111)	(0.5161)	(0.3889)	(0.3725)	(0.5385)	(0.9691)	(0.0673)	(1.0080)	(0.1283)	(1.7015)	(0.6498)
High Income & Islamic	3.8060***	7.1333***	-1.4501	4.4889***	-3.3428***	2.5970***	9.7113***	3.8694***	0.2093***	-0.8307***	-1.2838	-0.0299	-3.7303***	0.0904	2.0091***	-4.1240***
	(1.0360)	(0.5640)	(0.9202)	(1.1873)	(0.3660)	(0.4570)	(0.5427)	(0.2861)	(0.0739)	(0.1611)	(1.2772)	(0.0335)	(0.6706)	(0.1349)	(0.2592)	(0.1615)
Lower Middle & Islamic	1.3011*	2.5623	-0.4199	0.6182	-0.9099**	13.3324***	-3.0568***	-2.7744***	-0.7195***	0.6687	0.2216	0.1293***	1.6640***	-0.0674	-1.0129**	5.7153***
	(0.7434)	(1.9902)	(0.9005)	(0.7304)	(0.4319)	(0.9918)	(0.2457)	(0.3430)	(0.0815)	(0.4180)	(0.7266)	(0.0315)	(0.3636)	(0.0427)	(0.4164)	(0.3328)
Upper Middle & Islamic	0.0395	-2.4334**	15.2793***	-1.0769	-3.3552***	-0.2219	0.6267***	0.1475	-0.1004	-0.6023***	3.8060***	-0.2955***	-0.8107***	-0.2590***	7.2818***	-4.5491***
	(1.6853)	(1.1925)	(0.7160)	(2.1694)	(0.2265)	(0.3516)	(0.2186)	(0.1822)	(0.1039)	(0.0998)	(0.5337)	(0.0433)	(0.2470)	(0.0281)	(0.6214)	(0.1731)
Ln (Total assets)	-0.6041**	1.8283***	1.9561***	-1.0520***	0.6533***	-0.0175	-2.0426***	-1.5448***	-0.1043***	-0.4810***	-2.7112***	-0.2486***	1.1251***	0.0278***	-2.3841***	-1.4835***
	(0.2442)	(0.2347)	(0.0888)	(0.3122)	(0.0621)	(0.0813)	(0.0342)	(0.0301)	(0.0221)	(0.0293)	(0.0771)	(0.0037)	(0.0517)	(0.0061)	(0.1039)	(0.0333)
Fixed Assets	0.3008*	-1.9176***	0.9487***	0.0808	0.1243	0.2446**	0.7727***	0.0459	0.6646***	1.2929***	1.9981***	0.3746***	0.1515**	0.0624***	0.0429	2.5392***
	(0.1773)	(0.2276)	(0.1676)	(0.2333)	(0.0921)	(0.1026)	(0.0478)	(0.0805)	(0.0273)	(0.0920)	(0.1516)	(0.0087)	(0.0668)	(0.0082)	(0.2055)	(0.0502)
Non-lending assets	-0.0318	-0.7965***		-0.0745***	0.0542***	0.0141	0.0368***	0.1210***	0.0332***	0.0559***	0.0773***	-0.0075***	-0.0469***	-0.0063***	0.7374***	-0.0744***
	(0.0258)	(0.0156)		(0.0124)	(0.0054)	(0.0091)	(0.0025)	(0.0077)	(0.0025)	(0.0065)	(0.0147)	(0.0004)	(0.0065)	(0.0008)	(0.0093)	(0.0027)
Obs.	4229	4348	4652	4186	4353	2771	4652	3304	4150	3284	4554	4613	4640	4643	4567	2497
Cross Sections	602	575	605	602	591	427	605	487	566	486	603	604	605	605	599	431
R-Square	0.0210	0.5467	0.2561	0.0425	0.1333	0.0906	0.6168	0.4186	0.2569	0.4496	0.4413	0.6190	0.2706	0.0798	0.6675	0.7697

Note: Table 5 presents results where the countries in the sample are divided into three income groups according to their World Bank income classifications. This is to identify cross country income group effects on bank performance and reintermediation in these markets.

Table 6

Intermediation and Variables Explaining Reintermediation between Islamic and Conventional Banks - Controlling for Income Group & Post Crisis Period 2010 – 2015

Table 6 With Income Post Crisis															
Intermediation and Variables Explaining Reintermediation between Islamic and Conventional Banks - Controlling for Bank Characteristics, Income Groups & Post Crisis Period 2010 - 2015															
	Intermediation				Business orientation and Capital adequacy				Asset Quality		Management		Earning Quality		Liquidity	Service quality
Variables	Assets Growth	Loan-deposit Ratio	Loan to Earning Assets	Gross Loans Growth	Fee Income Ratio	Non-deposit lending Ratio	Equity Ratio	Total Capital Ratio	Loan Loss Reserves Ratio	Non-Performing Loans Ratio	Cost to Income	Overheads Ratio	ROAE	ROAA	Liquid Assets Ratio	Employee-Deposit Ratio
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Constant	26.1474***	106.8407***	29.6676***	36.6084***	-0.2254	15.9954***	43.4673***	39.8224***	0.7235***	5.6074***	97.0907***	6.3736***	-5.6534***	0.4457***	47.0750***	34.8206***
	(1.9310)	(2.5026)	(1.6540)	(2.1270)	(0.4285)	(1.2185)	(0.5715)	(0.4384)	(0.1776)	(0.4345)	(1.2975)	(0.0738)	(0.5689)	(0.0683)	(1.0839)	(0.7497)
High Income & Islamic	2.4291***	12.7163***	-4.2895***	4.2326***	-2.5035***	4.5687***	8.4251***	3.0731***	0.4436***	-1.0167***	4.5979***	0.0889**	-5.1674***	-0.3560***	2.9315***	-4.2949***
	(0.4553)	(0.6117)	(0.6094)	(0.6324)	(0.3717)	(0.3842)	(0.2879)	(0.3106)	(0.1468)	(0.1091)	(0.5419)	(0.0370)	(0.4261)	(0.0278)	(0.2421)	(0.1054)
Lower Middle & Islamic	-0.4675	-2.6005***	2.0480***	1.6774***	-0.6254	10.5551***	-4.2360***	-3.0544***	-0.4009***	0.2388	0.7197	0.0804	2.2098***	0.0265	-1.2836***	4.9643***
	(0.7300)	(0.9517)	(0.3602)	(0.3670)	(0.3914)	(1.8469)	(0.2121)	(0.2868)	(0.0510)	(0.3226)	(0.8541)	(0.0511)	(0.3429)	(0.0373)	(0.3847)	(0.2928)
Upper Middle & Islamic	-1.7184	-0.4298	15.3776***	-3.0610	-2.1969***	-1.1868***	1.2145***	-0.1629	0.2704**	-0.4208***	4.2151***	-0.1660***	-0.4483***	-0.2426***	7.4664***	-4.9379***
	(1.1528)	(0.5596)	(0.7000)	(2.0321)	(0.1497)	(0.2685)	(0.1746)	(0.1713)	(0.1298)	(0.1380)	(0.6848)	(0.0400)	(0.1634)	(0.0223)	(0.6485)	(0.2091)
Ln (Total assets)	-1.0274***	0.5205***	2.1894***	-1.4344***	0.8936***	-0.6442***	-2.1926***	-1.6059***	0.0268***	-0.3245***	-3.2617***	-0.2798***	1.1733***	0.0598***	-2.6108***	-1.7148***
	(0.1411)	(0.1621)	(0.0768)	(0.1093)	(0.0237)	(0.0636)	(0.0344)	(0.0233)	(0.0083)	(0.0245)	(0.0896)	(0.0044)	(0.0319)	(0.0025)	(0.0615)	(0.0363)
Fixed Assets	-0.0524	-2.3118***	1.0203***	-0.4133**	0.5483***	-0.2250***	0.8816***	-0.2959***	0.7540***	1.5696***	1.2355***	0.3255***	0.2895***	0.0968***	-0.0129	2.1826***
	(0.0949)	(0.2000)	(0.1608)	(0.2043)	(0.0678)	(0.0593)	(0.0636)	(0.0482)	(0.0360)	(0.0671)	(0.0746)	(0.0095)	(0.0625)	(0.0083)	(0.2230)	(0.0431)
Non-lending assets	-0.0700***	-0.7354***		-0.1407***	0.0659***	0.0156*	0.0473***	0.1123***	0.0442***	0.0891***	0.1423***	-0.0045***	-0.0623***	-0.0071***	0.7028***	-0.0860***
	(0.0071)	(0.0065)		(0.0097)	(0.0030)	(0.0082)	(0.0022)	(0.1123)	(0.0018)	(0.0036)	(0.0100)	(0.0004)	(0.0047)	(0.0007)	(0.0061)	(0.0025)
Obs.	2710)	2750	2945	2691	2803	1639	2945	2218	2697	2198	2901	2929	2938	2940	2892	1659
Cross Sections	597	566	600	597	585	392	600	474	562	474	597	599	600	600	593	388
R-Square	0.1489	0.6099	0.3771	0.1356	0.2483	0.2052	0.7475	0.4822	0.3249	0.5159	0.4477	0.6723	0.4449	0.2008	0.7008	0.8179
Note: *** for p< .01; ** for p< .05; * for p< .10															

Note: Table 6 shows results for regressions similar to the regressions run in table 5, with the additional specification that the time period is restricted to the post crisis phase defined for table 4. Islamic banks seem to over-perform frequently in many countries for all income groups during the post crisis period

Table 7

Intermediation and Variables Explaining Reintermediation between Islamic and Conventional Banks - Controlling for Cross Country Variation for the Sample Period 2004 – 2015

Table 7 Cross Country

Intermediation and Variables Explaining Reintermediation between Islamic and Conventional Banks - Controlling for Cross Country Variation for the Sample Period 2004 – 2015
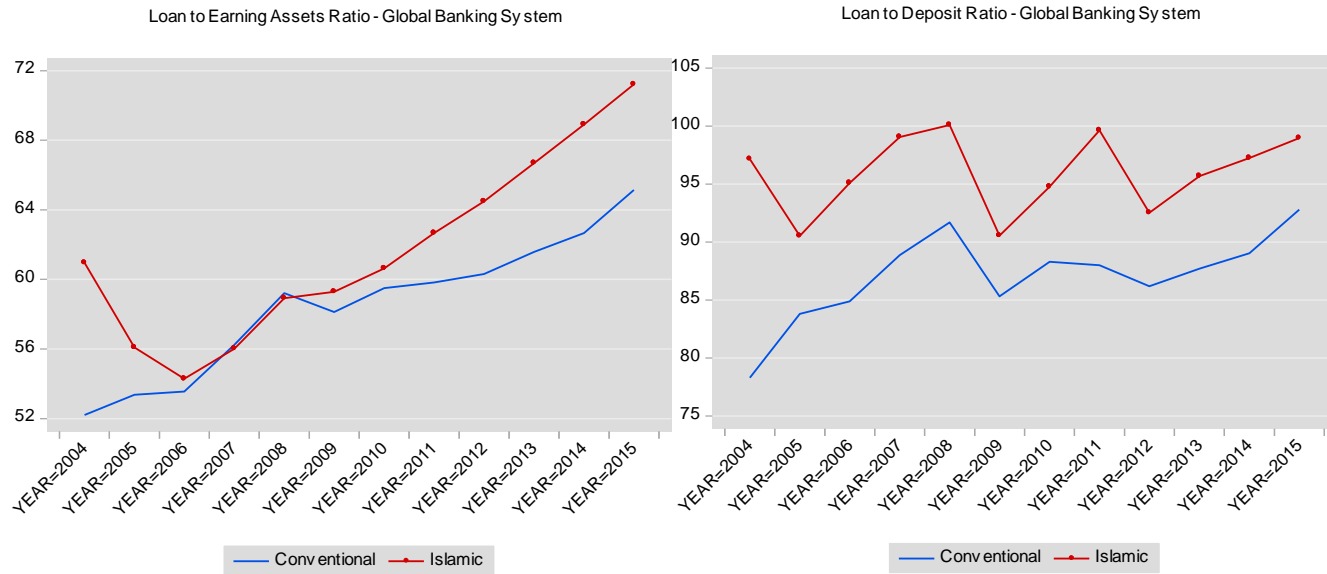
Variable	Intermediation				Business orientation and Capital adequacy				Asset Quality		Management		Earning Quality		Liquidity	Service quality
	Assets Growth	Loan-deposit Ratio	Loan to Earning Assets	Gross Loans Growth	Fee Income Ratio	Non-deposit lending Ratio	Equity Ratio	Total Capital Ratio	Loan Loss Reserves Ratio	Non-Performing Loans Ratio	Cost to Income	Overheads Ratio	ROAE	ROAA	Liquid Assets Ratio	Employee-Deposit Ratio
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
C	20.3444***	90.1204***	34.6682***	29.5458***	5.8984***	23.9781***	38.4752***	49.7114***	3.3234***	11.0195***	88.7911***	5.9149***	-3.5249***	1.1591***	38.9702***	28.9574***
	(3.2264)	(3.5333)	(1.6017)	(4.9532)	(0.9023)	(2.5200)	(0.5579)	(1.1891)	(0.3996)	(1.4883)	(0.9767)	(0.0750)	(1.0209)	(0.1397)	(1.7889)	(0.7415)
BHR	-0.3117	11.7339**	-14.7957***	2.1635	-1.5520***	10.0794***	15.8284***	4.8273**	-0.0377	-0.0320	2.6930**	0.5069***	-2.8155***	0.0185	-0.4111	-1.8491***
	(1.7895)	(5.0376)	(1.3608)	(1.4583)	(0.3933)	(1.5049)	(1.0132)	(2.0764)	(0.0844)	(0.7357)	(1.2792)	(0.0854)	(0.8529)	(0.1434)	(0.8449)	(0.6649)
BGD	6.0059***	-11.5667***	25.2563***	4.4365*	-1.7571***	-5.6981***	-5.6277***	-5.7686***	-0.0017	1.2769	-10.9452***	-1.0962***	0.2204	-0.5597***	1.0675**	2.1249***
	(1.7005)	(1.3465)	(0.6782)	(2.5739)	(0.6537)	(0.2657)	(0.1978)	(0.4596)	(0.1613)	(1.4303)	(1.4996)	(0.0449)	(0.8610)	(0.0455)	(0.4757)	(0.6291)
EGY	0.4652	-22.2386***	-8.7784***	-4.0346**	-1.5287	-6.9599***	-7.7443***	-9.2213***	5.7490***	8.0979***	-9.4371***	-1.0189***	1.3180	-0.5694***	-22.8694***	-4.0307***
	(1.0401)	(0.7685)	(2.2273)	(1.9452)	(0.9871)	(0.3129)	(0.2150)	(0.4965)	(0.5010)	(1.5061)	(1.6752)	(0.1393)	(2.0871)	(0.1590)	(3.5993)	(0.4249)
IND	6.3302*	8.7778**	18.9933***	8.7972*	-6.5334***	2.1720	-2.9410***	0.3098	-0.9342***	-0.0386	9.2022***	0.9722***	-2.2658***	-0.4111***	-0.4981	9.6228***
	(3.7012)	(3.8774)	(1.3843)	(5.0242)	(0.6448)	(3.0198)	(0.6798)	(0.8335)	(0.1520)	(1.1309)	(1.2737)	(0.0833)	(0.4339)	(0.0726)	(0.5809)	(0.7872)
IRQ	16.8844***	-8.9168***	4.9538	21.4436***	14.5245***	-4.7923***	25.3677***	34.2757***	9.3839***		-29.2537***	-1.8500***	3.0832***	2.0745***	68.0912***	3.2373**
	(4.8555)	(1.2289)	(5.6902)	(7.1249)	(3.2940)	(0.9661)	(0.8024)	(0.8402)	(2.8005)		(2.1846)	(0.0344)	(1.1830)	(0.2516)	(3.2223)	(1.5577)
IRN	1.5253	6.3159***	13.3637***	-0.3391	-5.3606***	6.7116*	-2.8124***	0.6273	-0.3560	4.3277***	16.5205***	0.2302**	-0.7027	-0.4760***	4.4797***	-6.2228***
	(3.7855)	(2.6708)	(0.9985)	(4.0113)	(0.5187)	(3.9392)	(0.4357)	(1.7125)	(0.2171)	(1.5406)	(1.4034)	(0.1050)	(1.0189)	(0.0714)	(0.4846)	(0.2490)
JDN	1.3322	-29.3509***	19.8715***	1.8322	-2.6379***	8.3448	-4.3351***	6.1232***	-1.1196***	-1.1969***	-8.0360***	-1.2031***	0.5631	-0.2711***	16.8581***	-3.8838***
	(1.0295)	(3.1374)	(3.0789)	(3.8860)	(0.4140)	(7.1609)	(0.1696)	(2.0593)	(0.2099)	(0.3679)	(2.4646)	(0.0305)	(0.8764)	(0.0878)	(1.5172)	(0.9730)
KEN	7.1399	-9.5679***	18.5676***	3.2724	0.6429	-	-5.4262***	-6.3402***	-2.9912***	0.5381	17.0235***	3.3175***	-1.3804	-0.5157	3.6148***	6.6630***
	(5.6606)	(1.0206)	(5.2189)	(6.1195)	(1.8687)	-	(1.5175)	(2.1845)	(0.5216)	(2.2691)	(2.5726)	(0.1373)	(3.0533)	(0.3791)	(1.3625)	(2.6964)
KWT	-1.0046	5.4544***	-3.9425***	-0.4734	-6.3862***	12.4117***	4.6568***	4.7934***	1.0750***	1.8841*	-5.3160**	-0.3135***	-4.8817***	-0.1614	-0.1779	-8.4257***
	(1.7912)	(1.1701)	(1.3106)	(2.2313)	(0.3328)	(2.9667)	(0.6704)	(1.0616)	(0.2773)	(0.9822)	(2.3989)	(0.1036)	(0.8875)	(0.1762)	(0.9257)	(0.7911)
MYS	-7.2500***	-5.6315***	16.9023***	-6.9297***	-8.6418***	-1.7284***	-2.1926***	-1.3021**	-0.2683*	-0.4556	3.9693***	-0.7254***	-2.4486***	-0.6918***	-2.7990**	-4.6377***
	(1.8870)	(1.1962)	(0.6258)	(1.9251)	(0.3827)	(0.4082)	(0.0398)	(0.5193)	(0.1417)	(0.3340)	(0.5148)	(0.0462)	(0.3244)	(0.0311)	(1.4205)	(0.1826)
OMN	16.7166***	73.0084***	-2.6664	51.7564***	-8.8929***	-	31.6397***	20.7807***	-3.3055***		47.1271***	2.0659***	-14.2968***	-3.0625***	33.4713***	-0.1367
	(1.8623)	(10.2241)	(17.3294)	(0.3229)	(2.9772)	-	(4.4453)	(2.5342)	(0.7108)		(2.2889)	(0.3330)	(0.6018)	(0.0991)	(13.7638)	(2.9804)
PK	-7.1164***	-4.5276***	-24.8407***	0.8059	-8.8687***	18.9925***	-1.7157	-8.0439***	0.5892***	-1.1582	6.8961***	1.4215***	2.3335***	0.3781*	-23.5533***	12.1858***
	(2.1719)	(0.9400)	(3.3977)	(3.8578)	(0.5032)	(4.0161)	(1.8255)	(0.4887)	(0.1274)	(0.9886)	(1.6206)	(0.1561)	(0.8081)	(0.2172)	(3.7009)	(0.7775)
PLT	1.8712	-6.0784	1.7427	5.7953*	-4.7566***	24.5060***	-3.7363***	-2.0821	-3.5322***	-3.9491***	10.5319***	-0.1646*	-1.5593	-0.3326*	9.8767**	-2.5036**
	(1.4302)	(7.8406)	(2.3510)	(3.1207)	(0.7130)	(7.8048)	(0.4138)	(1.7936)	(0.1649)	(0.2328)	(2.8061)	(0.0874)	(1.2840)	(0.1711)	(4.2640)	(1.1350)
QTR	14.0092***	8.4518***	0.8170	18.5024***	-7.9595***	-1.1585	10.2013***	3.8175***	-1.9914***	-2.3844***	-21.6934***	-0.7386***	2.6848***	1.4957***	-5.0908***	-3.7649***
	(1.9072)	(2.2390)	(1.5197)	(1.1825)	(0.8292)	(1.2447)	(0.9754)	(1.3235)	(0.1085)	(0.5379)	(0.7628)	(0.0455)	(0.3559)	(0.1754)	(1.6674)	(0.3173)
KSA	4.5220***	-10.3954***	11.2963***	2.4682	1.1966	20.7771***	10.4265***	7.9501***	0.0015	-3.2448***	-1.7932	-0.3159***	-4.7357***	0.4035***	6.3411***	-4.3222***
	(1.1521)	(1.4837)	(1.5266)	(1.8650)	(0.9387)	(1.0008)	(0.7550)	(0.7901)	(0.1899)	(0.2582)	(2.5101)	(0.0422)	(0.8850)	(0.1394)	(1.2565)	(0.2284)
SDN	-2.0301	7.1160***	-8.3569***	-4.2509**	9.7335***	22.5098***	-1.7470***	8.5031***	-2.3331***	-3.7446**	-8.1826***	0.0198	9.1796***	1.5690***	1.4135	1.7239**
		(1.9533)	(1.9657)	(2.1263)	(1.0537)	(1.5677)	(0.3917)	(2.3178)	(0.2746)	(1.6980)	(1.1083)	(0.0818)	(0.7382)	(0.0613)	(1.6332)	(0.8665)
SYR	-0.0041	-3.9903	-22.1063***	13.0007	-5.5431**	-	-3.1212**	19.2981***	4.4784		-17.6584***	-1.3389***	-0.8497	-0.1070	26.9939***	-4.8836***
	(7.4039)	(4.1388)	(4.9043)	(14.4029)	(1.7076)	-	(1.2109)	(2.8313)	(3.1163)		(3.7571)	(0.1150)	(2.8522)	(0.4350)	(2.1845)	(0.1441)
TUR	7.3284**	-3.2421*	24.9163***	2.9925	0.8872	0.0048	0.1045	0.4627	-0.1539	-0.3721	3.4009***	0.4999***	2.7091***	0.1811	4.5349***	-5.0861***
	(3.5564)	(1.9085)	(0.8433)	(3.7064)	(0.8866)	(1.6282)	(0.3603)	(0.7300)	(0.1149)	(0.4181)	(1.0035)	(0.1030)	(0.7628)	(0.1160)	(0.6977)	(0.3450)
UAE	8.1890***	0.6128	10.5874***	5.9916**	-4.3864***	1.2760**	2.7114***	3.1949***	0.1440	0.8029	-6.1612***	-0.3962***	-3.1349***	0.0452	1.8598**	-3.5512***
	(2.6042)	(0.9656)	(0.9324)	(2.9762)	(0.2551)	(0.5418)	(0.2797)	(0.7133)	(0.2615)	(0.8698)	(1.2851)	(0.0363)	(0.7586)	(0.1642)	(0.7385)	(0.7107)
UK	-0.3233	144.5503***	-22.3489***	10.9888*	-10.1595***		29.8843***	20.0173***	3.4876***	3.5154***	31.1508***	1.7372***	-10.7285***	-1.4891***	25.2558***	-5.3351***
	(5.8373)	(7.6351)	(2.9713)	(6.2310)	(0.9082)		(1.8949)	(0.6505)	(1.1961)	(0.2827)	(1.8992)	(0.2625)	(0.7970)	(0.2399)	(4.9286)	(0.3420)
YMN	-1.6555	7.0632*	-17.9553***	-6.1265***	8.4797***	10.0969***	-1.4961	-11.8958***	2.6658***	-0.3743	5.1108*	-0.3132***	-6.7306***	-0.8786***	-3.5845**	
	(3.1666)	(3.9225)	(2.7812)	(2.1154)	(1.6378)	(3.8650)	(0.9399)	(0.7068)	(0.8832)	(1.0266)	(2.9588)	(0.0799)	(0.6373)	(0.1121)	(1.8017)	
Ln (Total assets)	-0.6542***	1.7930***	1.6748***	-0.9942***	0.6949***	-1.1427***	-1.8458***	-2.2873***	-0.1099***	-0.6460***	-2.7075***	-0.2439***	1.0998***	0.0232***	-2.1024***	-1.4190***
	(0.2358)	(0.2425)	(0.1192)	(0.3200)	(0.0565)	(0.1434)	(0.0366)	(0.0813)	(0.0247)	(0.0851)	(0.0748)	(0.0041)	(0.0537)	(0.0067)	(0.1111)	(0.0391)

Fixed Assets	0.2489**	-1.9793***	1.3447***	0.1064	-0.1565**	-0.0990	0.8284***	-0.2340	0.6435***	1.3316***	2.0441***	0.3558***	-0.0662	0.0254***	-0.3815***	2.5539***
	(0.1079)	(0.2504)	(0.1700)	(0.1014)	(0.0696)	(0.2747)	(0.0601)	(0.2171)	(0.0326)	(0.1806)	(0.1649)	(0.0088)	(0.0669)	(0.0069)	(0.1085)	(0.0640)
Non-lending Assets	-0.0159	-0.8164***		-0.0731***	0.0368***	0.0167	0.0254***	0.1419***	0.0307***	0.0902***	0.0736***	-0.0080***	-0.0465***	-0.0068***	0.7472***	-0.0742***
	(0.0215)	(0.0176)		(0.0195)	(0.0056)	(0.0148)	(0.0038)	(0.0084)	(0.0020)	(0.0078)	(0.0144)	(0.0004)	(0.0059)	(0.0008)	(0.0089)	(0.0021)
Obs.	4229	4348	4652	4186	4353	2151	4652	3304	4150	3281	4554	4613	4640	4643	4567	2486
Cross Sections	4229	575	605	602	591	340	605	487	566	485	603	604	605	605	599	428
R-Sq.	0.0679	0.6700	0.4981	0.8859	0.3450	0.2463	0.6721	0.3411	0.3825	0.1755	0.5412	0.7185	0.4082	0.4617	0.7027	0.7820

Note: *** for p< .01; ** for p< .05; * for p< .10

Note: Table 7 presents regressions results for regressions that take into account cross country variations in banking performance. The countries in the sample belong to many income levels and intrinsic factors may affect the types and levels of risk inherent in the banking business across these countries.

Key for countries: Bahrain (BHR), Bangladesh (BGD), Egypt (EGY), Indonesia (IND), Iraq (IRQ), Iran (IRN), Jordan (JDN), Kenya (KEN), Kuwait (KWT), Malaysia (MYS), Oman (OMN), Pakistan (PK), Palestine (PLT), Qatar (QTR), Saudi Arabia (KSA), Sudan (SDN), Syria (SYR), Turkey (TUR), United Arab Emirates (UAE), United Kingdom (UK), Yemen (YMN).

Figure 1
Intermediation Ratios

Loan to Earning Assets Ratio - Global Banking System

Loan to Deposit Ratio - Global Banking System

Note: Figure 1 shows the trend in the yearly mean values of the two primary intermediation ratios for Islamic and Conventional banks for the years 2004 – 2015. Islamic banks have had substantially high intermediation ratios, surpassing those for conventional banks. Loan to earning assets ratio rose to nearly 70 percent and loan to deposit ratio was almost 100 percent for Islamic banks by the end of year 2015. These trends thus give rise to the need for an empirical investigation regarding the hypothesis of reintermediation "*within*" the banking sector and possible drivers of this trend.