JOURNAL OF ECONOMIC SURVEYS

doi: 10.1111/joes.12113

ISLAMIC BANKING AND FINANCE: RECENT EMPIRICAL LITERATURE AND DIRECTIONS FOR FUTURE RESEARCH

Pejman Abedifar

School of Management
University of St Andrews

Shahid M. Ebrahim

Durham Business School
Durham University Business School

Philip Molyneux*

Bangor Business School
Bangor University

Amine Tarazi

Université de Limoges
LAPE

Abstract. This paper examines the recent empirical literature in Islamic banking and finance, highlights the main findings and provides a guide for future research. Early studies focus on the efficiency, production technology and general performance features of Islamic versus conventional banks, whereas more recent work looks at profit-sharing and loss-bearing behaviour, competition, risks as well as other dimensions such as small business lending and financial inclusion. Apart from key exceptions, the empirical literature suggests no major differences between Islamic and conventional banks in terms of their efficiency, competition and risk features (although small Islamic banks are found to be less risky than their conventional counterparts). There is some evidence that Islamic finance aids inclusion and financial sector development. Results from the empirical finance literature, dominated by studies that focus on the risk/return features of mutual funds, finds that Islamic funds perform as well, if not better, than conventional funds – there is little evidence that they perform worse than standard industry benchmarks.

Keywords. G21; G23

1. Introduction

The key principles underlying Islamic banking and finance – namely the prohibition of *Riba* (narrowly interpreted as interest) and adherence to other *Shariá* (Islamic law) requirements – are as ancient as religion

*Corresponding author contact email: p.molyneux@bangor.ac.uk; Tel.: +44 1407 382170.

itself, although it has only been since the 1960's that banks have offered Islamic financial services.[1] These *Shariá* compliant services now sum-up to a global industry amounting to around $2 trillion in assets, of which 80% is accounted for by Islamic banks (including Islamic windows of conventional banks), 15% *Sukuk* (Islamic bonds),[2] 4% Islamic mutual funds and 1% *Takaful* (Islamic insurance) (The Economist, 2014). According to the Islamic Financial Services Board (2013), Iran is the biggest Islamic banking market (accounting for around 40% of global Islamic banking assets) followed by Saudi Arabia (14%), Malaysia (10%) and the United Arab Emirates (UAE) and Kuwait (both with 9% shares). There are few countries that have solely Islamic banks – only Iran and Sudan – in the majority of Muslim countries Islamic banks compete head-on with conventional banks. For instance in places such as Saudi Arabia around 35% of banking sector assets are *Shariá* compliant, figures are lower for UAE (22%), Qatar (20%) and Malaysia (20%). While Islamic banking and financial assets comprise under 1% of total global financial assets (given Credit Suisse's 2013 estimates of world financial assets) it is a sector that has grown faster than conventional (Western) finance since the 2007–2008 banking crisis, and this trend is expected to continue into the near future (The Economist, 2014). In addition to the growth in banking assets there is increasing competition between major financial centres to take the lead in *Sukuk* issuance and to develop a broader array of Islamic investment products (TheCityUk, 2013). In the light of these developments it is timely to provide a review of the recent empirical literature on Islamic banking and finance to highlight the main areas of interest and futures areas for further research.

2. A Brief History

From the earliest stages in Islamic history, Muslims were able to establish a system without interest for mobilizing resources to finance productive activities and consumer needs. The system worked quite effectively during the heyday of Islamic civilization and for centuries thereafter. According to Goitein (1971) the *Mudharabah* partnership (incorporating profit-sharing and loss-bearing – PSLB-features), the Musharakah facility (incorporating profit and loss – PLS-sharing features) and non-interest–based borrowing and lending formed the basis of commerce and industry in twelfth and thirteenth centuries in the Mediterranean region.[3] However, the Protestant Reformation in the Western world provided an impetus to intellectual growth (Hillebrand, 2009). This eventually led to the change in the centre of economic gravity to the West and Western financial institutions (especially banks) became dominant and the Islamic tradition remained dormant. Over the last 50 years or so, however, there has been a revival of interest in developing a modern version of the historic Islamic financial system in the wake of Muslims' desire to stay clear of interest and practice financial transactions consistent with *Shariá* principles.

When commercial banking emerged after the industrial revolution, Muslim scholars expressed reservations with the Western model of financial intermediation due to its reliance on interest and they called for the development of alternative mechanisms to perform a financial intermediation function in Muslim societies (Iqbal and Molyneux, 2005, Molyneux and Iqbal, 2005). Muslims to a significant extent refrained from dealing with commercial banks. However, the growing needs of traders, industrialists and other entrepreneurs in rapidly monetizing economies were pressing and as a consequence Muslim economists and bankers took up the challenge of developing alternative models of financial intermediation. In the early 19th century most of the Muslim world was under colonial rule. When many of these countries gained their independence after World War II, practical experiments in interest-free financing started at a modest scale and gradually expanded in scope.

While credit societies and cooperatives working on an interest-free basis existed in several Muslim countries even during the colonial period, the semblance of banking institutions started emerging in the early 1960s. A pioneering experiment of putting Islamic principles governing financial dealings into practice was conducted in Mit-Ghamr, Egypt, from 1963–1967. Modelled on the German saving banks (Sparkassen), the Mit-Ghamr initiative mobilized small savings from the rural sector largely through

savings accounts. No interest was paid to account holders. However, as an incentive they were eligible for small short-term interest-free loans for productive purposes. Account holders were allowed to withdraw their deposits on demand. In addition, investment accounts on the basis of *Mudharabah* were also introduced. The funds so mobilized were invested on the basis of PSLB with entrepreneurs.

The first interest-free institution with 'bank' in its name, Nasser Social Bank, was established in Egypt in 1971.[4] This was the first time a government in a Muslim country provided public support for incorporating an interest-free institution. Even though the objectives of the Nasser Social Bank were mainly social, such as providing interest-free loans to the poor and needy; scholarships to students; and micro-credits to small projects on a PLS basis; the involvement of a public authority in interest-free banking sent important signals to Muslim businessmen having surplus funds. A group of such businessmen established the Dubai Islamic Bank in 1975. This was the first Islamic Bank established on private initiative. However, official support was crucial with the governments of UAE and Kuwait contributing respectively 20% and 10% of the capital (Iqbal and Molyneux, 2005).

Probably one of the most important developments in the history of Islamic banking took place with the establishment of the Islamic Development Bank (IDB) in 1975. The IDB was established as an international financial institution by representatives of member countries of the Organization of the Islamic Conference (OIC) (in 1975 there were 23 members increasing to 57 by 2014). The IDBs main objective is to promote economic and social development in the Muslim world in accordance with the principles of *Shariá* and it has been a major financier and promoter of an array of Islamic banking and finance initiatives since its formation.

Between 1975 and 1990 the Islamic financial industry developed into an alternative model of financial intermediation. The period was marked by the establishment of a substantial number of Islamic financial institutions in the private sector. In addition, governments in three countries, namely, Pakistan, Iran and Sudan, expressed the desire to gradually eliminate interest from their entire economies and substitute it with banking systems based entirely on Islamic principles – by 1983 and 1984 Iran and Sudan had (virtually) achieved these objectives. Even more important was the fact that several multinational banks started offering Islamic financial products. This was a clear recognition of the viability of the new model and its acceptance by international players. The International Monetary Fund and the World Bank also recognized Islamic financial products as alternative means of financial intermediation (Sundararajan and Errico, 2002; World Bank, 2013). During the 1990s, while growth in the Islamic banking industry continued, attention was also given to the development of non-bank financial institutions. Islamic financial institutions other than banks started coming on the scene in increasing numbers. These included insurance companies and investment funds although (as noted earlier) the bulk of Islamic financial assets (80%) are in banking business.

Initiatives for the establishment of some infrastructure institutions supporting the Islamic financial industry also started in the 1990s. In the beginning, Islamic banking institutions had to work within the institutional framework that supported conventional banking and they were at somewhat of a comparative disadvantage because the institutional framework was not specifically geared to Islamic needs. While still in its infancy, a beginning was made towards constructing a network of supporting institutions for the Islamic financial industry.

Nowadays Islamic banking and finance manifests itself in five ways:

1. Banks and financial institutions operate in countries where the promotion of an Islamic financial system receives active government support.[5]
2. Islamic banks and financial institutions operate in the private corporate sector competing with conventional (Western) institutions.
3. Islamic banking is practiced by conventional commercial banks (via Islamic windows), traditional Islamic banks as well as non-bank financial institutions.
4. Multinational financial institutions (like the IDB in Jeddah) operate on *Shariá* principles.

5. Islamic capital market instruments (mutual funds, *Sukuk*), and insurance *(Takaful)* are becoming more important, for instance, *Sukuk* issuance partly funded London's Olympic Village and 'Shard' building.

3. Principle of Islamic Banking and Finance

Islamic banking and finance is based on *Shariá* principles which forbid payment or receipt of *Riba* generally misconstrued as interest (Pryor, 2007).[6] The lending facility encouraged in the medieval era of Islamic society is that of gratuitous loans termed as *Qard Al-Hasan*. It is interesting to note that *Shariá* recognizes the time value of money, since according to Islamic rules the price of a good to be sold on a deferred payment basis can be different from its current value.[7] While *Shariá* recognizes excessive payments in business transactions, it prohibits the same on lending activities (Obaidullah, 2005). Islamic banks typically fund their lending with depositors funds and their equity capital (very rarely do they employ *Sukuk* bonds for such financing). Islamic finance has evolved based on the precedence of transactions conducted specifically in the medieval era and recorded under *Fiqh al-Muamalat*. These can mainly be categorized as: 1) Debt-based financing: where the financier purchases or has the underlying assets constructed or purchased and then this is sold to the client at a mark-up. The sale would be on a deferred-payment basis with one or several instalments. 2) Lease-based financing: the financier purchases or has the underlying assets constructed or purchased and then rents it to the client. At the end of the rental period (or proportionate to the rentals) ownership would be transferred wholly or partially to the client. 3) PSLB financing: the financier is the partner of the client and the realized profit or loss would be shared according to pre-agreed proportions (Khan and Ahmed, 2001). The first two Islamic finance methods are collectively known as 'Non-PSLB' contracts.

Besides restrictions on *Riba*, *Shariá* has various other prohibitions which have to be taken into account. For instance, according to *Shariá* all contracts should be free of '*Gharar*', which is narrowly interpreted as excessive uncertainty.[8] Hence as noted earlier, Islamic financial institutions face some restrictions on application of financial derivatives and other types of contracts (including various forms of insurance policies). In addition, Islamic financial firms are not allowed to undertake business prohibited under Islamic law (known as *Haraam*) such as investing in companies involved with alcohol, gambling, non-Islamic financial services, pornography, tobacco or weapons. However, as many large firms receive a modest proportion of income from such prohibited activities (for instance, hotel chains and alcohol sales), modern *Shariá* scholars tend to allow investment in companies with tolerable proportions of revenues from prohibited activities under the condition of *Haraam* purification. This requires investors to donate equivalent proportion of their distributions from such companies to charities to purify their earnings from prohibited activities (Hoepner *et al.*, 2011). Islamic financial institutions all have *Shariá* supervisory boards composed of executive management as well as Islamic scholars whose role it is to ensure that the firm's activities are undertaken in a *Shariá* compliant manner.[9]

It has been argued that Islamic finance contracts are more complex than conventional contracts (Errico and Farahbaksh, 1998; Dar and Presley, 2000; Sundararajan and Errico, 2002 and Abedifar *et al.*, 2013, discuss the complexity of the *Sharia*-based finance contracts). Generally, in debt-based or lease-based finance, such as *Murabaha,* Islamic banks arrange for the goods/projects to be purchased and then sell or rent them (at a mark-up) to clients. For purchase/implementation of the goods/projects, Islamic banks normally appoint the client as their agent. Such a framework is somewhat complicated as compared to conventional loan contracts. Sundararajan and Errico (2002) note the specific risks attached to various Non-PSLB methods, such as *Salam* and *Ijara*. In the former, Islamic banks are exposed to both credit and commodity price risks; in the latter, unlike conventional lease contracts, Islamic banks cannot transfer ownership and therefore have to bear all the risks until the end of the lease period.

Another area of debate relates to the treatment of default penalties. Some jurisdictions rule that such penalties are not authorized by *Shariá,* so banks make use of rebates instead (Khan and Ahmed, 2001). Here the mark-up on the finance arrangement implicitly covers the return to the banks as well as a default penalty component. If the client repays the loan in a timely manner then they will receive the rebate. While default interest payments are typically calculated over the delayed period in conventional banking, some Islamic banks collect the delayed penalty over the whole financing period. In addition, Islamic banks can also face restrictions regarding the use of derivatives as well as different types of collateral, for instance, they are not authorized to use interest-based assets, like money market instruments or bonds, for security.

In addition to lending, conventional banks also allocate a part of their funds to investments. Such investments normally include purchase of bonds (as well as instruments with shorter maturities) of different types that have risk/return features that help manage portfolio risk. Islamic banks have limited options for such investments since they are not authorized to invest in interest bearing instruments. Alternatively they can invest in short-term *Sukuk* issued by the International Islamic Liquidity Management Corporation (IILM – see Archer and Karim, 2014).[10] Although (like in short-term Islamic money markets) the asset class still remains relatively underdeveloped, limitations on Islamic bank investment opportunities has been weakened over time due to *Haraam* purification as well as the expansion of alternative Islamic financing instruments. Interest rates (in a mixed system) and 'PSLB rates' in a purely Islamic system are typically set by the central bank. The interbank rates based on 'wakalah' (agency) agreements are set on PSLB rates, which usually track market rates.

4. Performance of Islamic versus Conventional Banks

Table 1 illustrates recent empirical literature comparing the performance of Islamic and conventional banks. Early studies focus on single countries, such as those by Bashir (1999) on Sudan, Samad (1999) and Majid *et al.* (2003) on Malaysia, and El-Gamal and Inanoglu (2002) on Turkey, and use a variety of approaches (OLS regression, analysis of variance and stochastic frontier analysis) to compare various performance features of Islamic versus conventional banks. More recent studies tend to be cross-country in nature and use frontier modelling approaches, either parametric (Majid *et al.*, 2003; Mohamad *et al.*, 2008; Gheeraeart and Weill, 2014) or non-parametric (Yudistra, 2004; Bader *et al.*, 2008; Johnes *et al.*, 2014) to model cross-country bank cost and profit efficiency (as well as productivity). Mohamad *et al.* (2008), for instance, analyse a sample of banks operating in 21 OIC member countries between 1990 and 2005 and use the non-parametric Data Envelopment Analysis (DEA) approach to compare the cost, profit and revenue efficiency of conventional banks with Islamic banks. They find no significant difference between the efficiency features of the two kinds of banks. In contrast, Johnes *et al.* (2009) look at banks operating in six Gulf Cooperation Council (GCC) countries between 2004 and 2007 again using DEA, as well as various other performance metrics including the Malmquist productivity index. Johnes *et al.* (2009) find that Islamic banks are significantly less efficient than their conventional counterparts and this result is also confirmed in a later study by Johnes *et al.* (2014) that has a larger sample – banks from countries where more than 60% of the population are Muslim (18 countries in total) over 2004 and 2009.

Possibly the most comprehensive study is that by Beck *et al.* (2013) who investigate Islamic bank performance issues using a sample of banks from 141 countries over 1995 and 2007. Using a variety of regression approaches (OLS, fixed effects and robust regression) and comparing risk, efficiency and business model features, they find few significant differences between Islamic and conventional banks.

Despite the focus of performance comparisons to be dominated by efficiency comparisons, no strong consensus emerges from this literature, although a (small) majority of studies find no major difference

Table 1. Performance of Islamic versus Conventional Banks – Recent Empirical Evidence.

Authors	Country(ies) of Study	Period	Data Type	Research Focus	Methodology	Main Finding
Bashir (1999)	Sudan	1979–1993	Yearly bank-level accounting data	Asset size and bank performance	Regression - OLS	Larger banks are more profitable yet have higher leverage. Analysis is based on only two Islamic banks.
Samad (1999)	Malaysia	1992–1996	Yearly bank-level accounting data	Cost efficiency	Descriptive statistics and ANOVA	Islamic banks are more efficient than their conventional counterparts.
El-Gamal *et al.* (2002)	Turkey	1990–2000	Yearly bank level accounting data	Production technology	Stochastic Frontier Analysis	Islamic banks have a similar production technology to conventional commercial banks.
Majid *et al.* (2003)	Malaysia	1993–2000	Yearly bank level accounting data	Cost efficiency	Stochastic Frontier Analysis	No statistically significant difference in the level of efficiency between Islamic and conventional banks and no evidence to suggest that ownership influences cost efficiency.

(*Continued*)

Table 1. *Continued.*

Authors	Country(ies) of Study	Period	Data Type	Research Focus	Methodology	Main Finding
Hassan and Bashir (2003)	Islamic banks operating in 21 countries	1994–2001	Yearly bank level accounting data	Determinants of bank profitability (ROA, ROE, NIM)	Regression - GLS	Controlling for macroeconomic environment, financial market structure, and taxation, the results indicate that high capital and loan-to-asset ratios lead to higher profitability (as does favorable macroeconomic conditions).
Yudistra (2004)	Islamic banks operating in 12countries	1997–2000	Yearly bank level accounting data	Technical and scale efficiency	Data Envelopment Analysis (DEA) and OLS regression	Islamic bank inefficiencies appear relatively low (around 10%) compared with those for conventional banks derived from other studies. Small to medium-sized Islamic banks exhibit diseconomies of scale. Islamic banks in the Middle East are less efficient than those operating outside the region.

(*Continued*)

Journal of Economic Surveys (2015) Vol. 29, No. 4, pp. 637–670

Table 1. *Continued.*

Authors	Country(ies) of Study	Period	Data Type	Research Focus	Methodology	Main Finding
Al-Jarrah and Molyneux (2005)	Bahrain, Egypt, Jordan and Saudi Arabia	1992–2000	Yearly bank level accounting data	Cost and profit efficiency	Stochastic Frontier Analysis	Islamic banks are found to be the most cost and profit efficient banks compared to conventional commercial and investment banks.
Mohamad *et al.* (2008)	21 Organization of Islamic Conference (OIC) countries	1990–2005	Yearly bank level accounting data	Cost and profit efficiency	Stochastic Frontier Analysis	No significant difference between cost and profit efficiency of conventional versus Islamic banks, irrespective of size, age and geographical location Islamic banks based in the Middle East and Turkey are more cost efficient than their African counterparts.
Bader *et al.* (2008)	21 OIC countries	1995–2005	Yearly bank level accounting data	Cost, revenue and profit efficiency	Data Envelopment Analysis	No significant difference between cost, revenue and profit efficiency of conventional versus Islamic banks. Note this study uses the same sample as Mohamad *et al.* (2008).

(*Continued*)

Table 1. *Continued.*

Authors	Country(ies) of Study	Period	Data Type	Research Focus	Methodology	Main Finding
Abdul-Majid *et al.* (2010)	10 countries	1996–2002	Yearly bank level accounting data	Returns to scale and efficiency	Parametric output distance function	Islamic banks are found to have moderately higher returns to scale than conventional banks but appear less efficient due to *Sharia* compliance. Country effects have a significant impact on efficiency differences.
Johnes *et al.* (2009)	GCC – 6 countries	2004–2007	Yearly bank level accounting data	Efficiency and productivity	DEA Malmquist productivity Ratio Analysis	Islamic banks have (significantly) lower efficiency than conventional banks. Modest productivity growth over the study period.
Rashwan (2010)	15 countries	2007–2009	Bank level data	Profitability and efficiency over the banking crisis	Multivariate analysis of variance (MANOVA)	Islamic banks are more profitable and efficient than traditional banks pre-crisis but the opposite is the case post-crisis.
Abdul-Majid *et al.* (2011a,b)	Malaysia	1996–2002	Bank level data	Efficiency and productivity	Stochastic Frontier Analysis	Islamic banks and Islamic window banks are less cost efficient than their conventional counterparts.

(*Continued*)

Table 1. *Continued.*

Authors	Country(ies) of Study	Period	Data Type	Research Focus	Methodology	Main Finding
Beck *et al.* (2013)	141 countries (including 22 OIC member countries)	1995–2007	Yearly bank-level accounting data	Efficiency, asset quality, stability and business orientation	Regression – OLS Fixed effects, Robust	Few significant differences are found between Islamic and conventional banks.
Gheeraeart and Weill (2014)	70 countries	2000–2005	Yearly bank-level accounting data and macro data	Examines Islamic banking development and macroeconomic efficiency	Stochastic Frontier Analysis	There is a non-linear relationship between Islamic banking development and macroeconomic efficiency. Islamic banking aids macroeconomic efficiency up to a point and then restricts it thereafter.
Johnes *et al.* (2014)	Countries where at least 60% of the population is Muslim – 18 countries.	2004–2009	Yearly bank-level accounting data	Efficiency	DEA, meta-frontier, Two-stage approach examining determinants of efficiency	Islamic banks are less efficient, in general, than their conventional counterparts.

Source: Adapted from Abedifar *et al.* (2013) Table 1 and authors updates.

between Islamic and conventional banks in terms of cost and profit efficiency. Fewer studies focus on the determinants of bank profitability (Hassan and Bashir, 2003, Rashwan, 2010) and here there is some evidence that better capitalised and loaned-out Islamic banks are more profitable. A study by Gheeraeart and Weill (2014) covering 70 countries, interestingly finds a non-linear relationship between Islamic banking development and macroeconomic efficiency – Islamic banking aids macroeconomic efficiency up to a point and then restricts it thereafter.[11]

5. Risks in Islamic Banking?

Islamic banking is characterized by features that appear on the one hand to reduce risk: the religious beliefs of clients may induce greater loyalty and discourage default (it may also reduce deposit withdrawal risk). On the other hand it could increase risk due to such factors as: the complexity of Islamic loan contracts, limited default penalties and moral hazard incentives caused by PSLB contracts. In terms of insolvency risk, the special relationship with depositors could provide Islamic banks with greater capacity to bear losses yet at the same time, operational limitations on investment and risk management activities could make them less stable than their conventional counterparts. Moreover, while interest is forbidden in Islamic banking, those institutions that compete with conventional banks may be forced to mirror their pricing behaviour and as such may be subject to (indirect) interest rate risk.

After the global financial crisis in 2007–2008 there has been increased interest in risk in banking in general as well as in the Islamic world. Table 2 illustrates the most recent literature.

Early studies typically use regression approaches to try and explain various types of risk and to examine differences between conventional and Islamic banks. Čihák and Hesse (2010) study banks operating in 20 OIC member countries over 1993–2004, and Abedifar *et al.* (2013) with a more recent sample from 24 OIC countries over 1999–2009. Both use regression analysis to examine risk (using the Z-score measure) to gauge insolvency risks and typically find that small Islamic banks have lower default risk compared with small conventional banks, but the opposite is the case for larger Islamic banks where insolvency risk is higher. Beck *et al.* (2013), however, using a more comprehensive sample find no such differences. The most recent studies have tended to investigate survivorship of the two types of banks, again cross country, using duration models. Pappas *et al.* (2014), for instance, model the survival rates of Islamic and conventional banks over 1995–2010 using duration analysis and find that Islamic banks have significantly lower failure rates compared to similar conventional banks. Baele *et al.* (2014) use hazard functions to model the loan default rates of small business loan borrowers in Pakistan. Using a unique data sample of 150,000 small business loans (from the Central Bank of Pakistan's Credit Register) over 2006–2008 they find that the default rate on small business Islamic loans is less than half that of conventional loans. The study also shows that small business borrowers that take on loans from both conventional and Islamic banks are more likely to default on the former – this they put down to the moral pressures linked to religious beliefs.[12] Saeed and Izzeldin (2014) take a different slant looking at the link between profit efficiency (derived from parametric stochastic frontier estimates) and distance to default and show that for Islamic banks defaults rates are inversely related to profit efficiency whereas there is a positive relationship for their conventional counterparts.[13] Mollah *et al.* (2014) investigates a variety of determinants of Islamic bank risk-taking across seven countries over 2006–2009. Using accounting risk measures (among other things) they find that corporate governance and financial disclosure issues appear to have the biggest impact on Islamic bank risk-taking whereas the nature of *Shariá* boards does not seem to limit risk-taking. Reviewing the studies in Table 2 one can again see somewhat mixed findings from studies that typically use different bank samples, methodologies and study periods. The majority of the literature appears to suggest that small Islamic banks may be less risky than similar sized conventional banks.

Table 2. Risk and Islamic Banking.

Authors	Country(ies) of Study	Period	Data Type	Research Focus	Methodology	Main Finding
Čihák and Hesse (2010)	20 OIC member countries	1993–2004	Yearly bank-level accounting data	Insolvency risk	Regression – OLS and Robust	Small Islamic banks are more stable than small conventional banks; however, large Islamic banks are less stable than their conventional counter-parts.
Hassan and Dridi (2010)	8 countries	2007–2009	Yearly bank-level accounting data	Factors influencing performance, growth and ratings over crisis period	Regression – OLS	The credit and asset growth of Islamic banks was more than that of conventional banks from 2008–2009 'contributing to financial and economic stability', although profits of Islamic banks fell more than conventional banks in 2009 due to limitations in their risk management practices.

(*Continued*)

Table 2. *Continued.*

Authors	Country(ies) of Study	Period	Data Type	Research Focus	Methodology	Main Finding
Abedifar *et al.* (2013)	24 OIC member countries	1999–2009	Yearly bank-level accounting data	Credit risk, insolvency risk, interest rate risk and possibility of extracting religious rent	Regression – random effects	Islamic banks that are small, leveraged and based in countries with predominantly Muslim populations have lower credit risk than conventional banks. Small Islamic banks appear more stable than similar sized conventional banks. During the recent crisis, however, large Islamic banks exhibit lower stability than large conventional banks. Implicit interest income and expense, as well as credit risk of Islamic banks are less responsive to domestic interest rates. Islamic banks do not seem to charge special rents to their clients for offering *Shariá* compliant financial products.
Beck *et al.* (2013)	141 countries (including 22 OIC member countries)	1995–2007	Yearly bank-level accounting data	Efficiency, asset quality, stability and business orientation	Regression – OLS Fixed effects, Robust	Few significant differences are found between Islamic and conventional banks.

(*Continued*)

Journal of Economic Surveys (2015) Vol. 29, No. 4, pp. 637–670

Table 2. *Continued.*

Authors	Country(ies) of Study	Period	Data Type	Research Focus	Methodology	Main Finding
Pappas *et al.* (2014)	20 countries	1995–2010	Yearly bank-level accounting data	Survival rates of Islamic and conventional banks	Duration models, hazard rates	Islamic banks have a significantly lower risk of failure both unconditionally and conditionally on time-varying bank characteristics, market structure and macro-economic conditions.
Baele *et al.* (2014)	Pakistan	2006:04–2008:12	150000 Monthly business loans	Loan default rate	Hazard function	Default rate of Islamic loans is less than half the default rate of conventional loans. Islamic loans are less likely to default during Ramadan.
Saeed and Izzeldin (2014)	Bahrain, Bangladesh, Indonesia, Kuwait, Pakistan, Qatar, Saudi Arabia and UAE	2002–2010	Yearly bank-level accounting data	Profit efficiency and default risk	Stochastic Frontier Analysis and distance to default (Merton) model	Profit efficiency is inversely related to default risk for Islamic banks, whereas for conventional banks it is positively linked.
Mollah *et al.* (2014)	Bahrain, Bangladesh, Malaysia, Pakistan, Saudi Arabia, The United Arab Emirates, and The United Kingdom	2006–2009	Yearly bank-level accounting data	Links between risk exposure, governance indicators and bank performance/value	OLS and GMM	Corporate governance (CGI) and financial disclosure (FDTI) indexes have emerged as the key driving forces for risk-taking for Islamic banks. *Shariá* boards do not inhibit risk-taking.

Source: Adapted from Abedifar *et al.* (2013)Table 1 and authors updates.

6. Other Topical Banking Issues

6.1 *PSLB versus non-PSLB Types of Finance*

The theory of Islamic banking, emanating from Uzair (1978) conceptualizes an Islamic financial intermediary as a double *Mudharabah* (quasi-equity PSLB) contract. This involves underwriting the contractual relationship on the asset as well as the liabilities side as a *Mudharabah* one twice. This conceptual model of Uzair (1978) is not observed in practice as Islamic banks often tend to deviate from PSLB financing principles and operate similar to conventional banks (see Abedifar *et al.*, 2013). This is because *Mudharabah*: (1) defies the general law of hire and runs afoul of a number of *ahādith*; (2) suffers from an agency issue due to the *fiqh* constraint on *rabb-al-māl* providing 100% capital; and (3) suffers from both adverse selection and moral hazard and thus needs to overcome these problems (Kahf and Khan, 1992; Ebrahim and Sheikh, 2014b). In addition, potential deposit withdrawal risk may persuade management to vary from PSLB principles by paying competitive returns to investment account holders if they are competing with conventional banks. For instance, Chong and Liu (2009) use Malaysian data over 1995–2004 and Granger causality tests to illustrate that monthly investment deposit rates of Islamic banks are closely linked to those of their conventional counterparts. Also, when lending Islamic banks are likely to apply non-PSLB principles due to the risks and complexities associated with the PSLB method. For instance, under PSLB financing, Islamic banks need to determine how to share the realized return for each project which can be complicated due to difficulties in quantifying the characteristics of clients and the proposed business opportunity. Also under PSLB revenue is not guaranteed and since under these types of contracts banks typically cannot collect collateral from clients, they need to put more effort into selection and monitoring so as to ensure that informational rents are not extracted by borrowers.[14] Hence, for short-term financing, it may not always be viable for Islamic banks to use the PSLB method. Moreover, under the *Mudharabah* contract, Islamic banks have limited means to control and intervene in the management of a project.

There is evidence to suggest that Islamic banks typically do not depend on PSLB contracts to undertake their financing activities. Aggarwal and Yousef (2000) show that Islamic banks mainly use Non-PSLB instruments to avoid moral hazard problem associated with PLS financing. Chong and Liu (2009) also find that in Malaysia, only 0.5% of Islamic bank finance is based on PSLB principles and Baele *et al.* (2014) find that the bulk of Islamic financing in Pakistan is not via PSLB. According to the Bank Indonesia Report (2009) PSLB modes of finance account for 35.7% in the financing of Islamic banks operating in the country by the end of 2008, and this they claim to be the highest proportion in any Islamic banking system.[15]

6.2 *Competition*

A handful of studies, noticeably Turk Ariss (2010) and Weill (2011) investigate competition in various countries where Islamic and conventional financial institutions operate together. The former study uses a variety of competition indicators – both concentration ratios, and the non-structural Panzar-Rosse H-statistic and Lerner indexes – to gauge market structure and competition issues. Turk Ariss (2010) uses a sample of 58 Islamic and 192 conventional banks operating in 13 countries between 1992 and 2006 and measures competition using the Panzar-Rosse and Lerner indicators finding that Islamic banks are less competitive than conventional operators. This finding, however, conflicts with Weill (2011) who uses the Lerner index to gauge bank market power in 17 OIC member countries, and he finds that Islamic are more competitive. An interesting study by Aysan *et al.* (2014) uses Central Bank of Turkey deposit data and a panel-VAR methodology to investigate depositor responsiveness to interest rate changes. Surprisingly, Islamic depositors seem to respond more to deposit rate changes compared to conventional bank depositors – this provides (perhaps) some indirect evidence that Islamic banks on the deposit-side are more competitive.

6.3 *Small Business Lending and Other Issues*

Other areas covered in the empirical banking literature span a variety of issues. Ongena and Şendeniz-Yüncü (2011) use cross-sectional data for Turkish banks in 2008, and apply multinomial logit analysis to examine bank-firm relationships. Shaban *et al.* (2014) analyze similar relationships in Indonesia over 2002–2010 using Granger causality and dynamic panel modelling approaches (Generalized Method of Moments – GMM). Both studies find that Islamic bank business borrowers are dominated by relatively small and young firms that have multiple bank relationships. Islamic banks have a preponderance of such borrowers and they generate relatively high margins. Other studies cover a range of disparate themes. Imam and Kpodar (2010) model the diffusion (take-up) of banking across 117 countries and find that the probability of the development of Islamic banking increases with a larger Muslim population share, greater income per capita and when the country is an oil exporter. Higher interest rates limit the take-up of Islamic banking. Mallin *et al.* (2014) use a sample of banks from 13 countries to examine how corporate social responsibility (CSR) disclosure of Islamic banks influences performance. They find that there is a positive relationship between CSR disclosure and bank performance (profitability) and a highly significant link between the size of *Shariá* supervisory boards and the level of CSR disclosure. Elnahass *et al.* (2014) use a sample of 74 conventional and 32 Islamic banks over 2006–2011 from Middle East North Africa (MENA) countries to examine the link between loan-loss provisioning (an indicator of credit risk) and shareholder value creation where they find conventional banks are more sensitive to provisioning compared to Islamic banks. A recent interesting study by Gheeraert (2014) uses aggregate financial and economic data from the World Bank's Financial Structure Database from 55 countries over 2000–2005 to examine the finance and growth nexus. The study finds that Islamic banking sector development aids overall banking sector growth. A summary of the areas discussed in this section are summarised in Table 3.

7. Islamic Finance

7.1 *Islamic Mutual Funds*

So far we have discussed the literature that looks at Islamic banking. In this section we outline recent developments in the study of Islamic finance – typically in capital markets areas. The empirical literature is dominated by work that compares the risk and return features of Islamic mutual funds with various benchmarks including conventional and Islamic market indexes as well as portfolios of conventional bonds. These offer an avenue to observe the risk-sharing aspect of Islamic financial intermediation in practice. The main difference between Islamic funds and their conventional counterparts is that managers have a smaller universe of companies to invest in as they are subject to screening out businesses that are not *Shariá* compliant – this includes (religious) screening out of companies that operate in areas prohibited under Islamic law and screening out firms that cannot achieve certain financial criteria (for instance, exceeding maximum interest payments on debt deemed permissible). All in all, Islamic fund managers have a more limited investment choice.[16] Typically, the Islamic fund literature uses performance metrics – Sharpe ratios, Jensen's alpha, Treynor indexes, Fama and French and related models, to compare the risk-adjusted returns of funds and testing to see if these are statistically different for Islamic and conventional funds. Recent empirical studies, such as Elfakhani *et al.* (2005), Hayat (2006), Abderrezak (2008), Haddad *et al.* (2009) and Hoepner (2011) find no difference in the performance of Islamic equity funds with other conventional funds or index benchmarks. Others, such as Ferdian and Dewi (2007) and Mansor and Bhatti (2011) even find that Islamic funds perform better. There is little evidence, however, that Islamic funds perform worse – Hayat and Kräussl (2011) being the exception. A couple of studies have combined efficiency analysis (that tends to dominate the empirical Islamic banking literature) with analysis of fund returns (Saad *et al.*, 2010; and Abdelsalam *et al.*, 2014a). Saad *et al.* (2010) use

Table 3. Other Islamic Banking Issues

Authors	Country(ies) of Study	Period	Data Type	Research Focus	Methodology	Main Finding
Chong and Liu (2009)	Malaysia	1995:04–2004:04	Monthly interest rates (rates of return for Islamic banks)	Causality relationship between Islamic banks deposits rates and interest rates in conventional banking.	Granger causality test	Rates of return on the investment deposits of Islamic banks are closely related to rates on conventional banks' deposits.
Imam and Kpodar (2010)	117 countries	1992–2006	Country level data	Determinants of the diffusion of Islamic banking	Regression - Tobit	Probability for Islamic banking to develop in a country rises with the share of the Muslim population, income per capita, and whether the country is a net exporter of oil. Increasing interest rates limit the diffusion of Islamic banking.
Turk Ariss (2010)	13 countries	2000–2006	58 Islamic and 192 conventional banks. Yearly bank accounting data from Bankscope	Competitive conditions in banking markets	Measures of concentration, PanzarRosse H-statistic and Lerner index (market power)	Islamic banks are less competitive compared to conventional banks.

(*Continued*)

Journal of Economic Surveys (2015) Vol. 29, No. 4, pp. 637–670

Table 3. *Continued.*

Authors	Country(ies) of Study	Period	Data Type	Research Focus	Methodology	Main Finding
Ongena andŞendeniz-Yüncü (2011)	Turkey	2008	Bank-firm relationships	Firm bank choice	Multinomial logit	Islamic banks mainly have corporate clients that are young, transparent, industry-focused, and have multiple-bank relationships.
Weill (2011)	17 OIC member countries	2001–2007	Yearly bank-level accounting data	Market power	Regression – random effects GLS	Islamic banks have lower market power than conventional banks.
Aysan *et al.* (2014)	Turkey	2004:03–2012:12	Deposit data	Behavioral aspects of Islamic bank depositors in a dual banking system	Panel vector autoregression (panel-VAR)	Conventional bank depositors are relatively less sensitive to interest rate changes compared to Islamic bank depositors since only the largest depositor groups are found to be significantly responsive to interest rate shocks.

(*Continued*)

Table 3. *Continued.*

Authors	Country(ies) of Study	Period	Data Type	Research Focus	Methodology	Main Finding
Hassan *et al.* (2014)	55 OIC countries	1990–2011	Financial inclusion indicators (e.g. ATM usage) and GDP growth measures	Examines the relationship between financial inclusion and economic development in Islamic economies	Panel VAR, forecast error variance decompositions, Panel Granger causality tests	Financial inclusion has a positive link to economic development and the relationship varies across regions.
Shaban *et al.* (2014)	Indonesia	2002–2010	Data on small business lending and other financial data on 107 conventional banks and 7 Islamic banks. Data from the Central Bank of Indonesia	Determinants of small business lending	Dynamic GMM and Granger causality tests	Small and more profitable banks are more likely to focus on small business lending. Islamic banks also have a higher proportion of small business lending on their books from which they earn relatively high margins.
Mallin *et al.* (2014)	13 countries - Bahrain, Bangladesh, Indonesia, Jordan, Kuwait, Malaysia, Pakistan, Qatar, Saudi Arabia, Sudan, Syria, UAE and UK.	2010–2011	Constructs a corporate social responsibility (CSR) disclosure index	Examines the relationship between Islamic bank CSR disclosure and the features of the *Shariá* Supervisory Board on bank performance	OLS and 3SLS	Positive link between *CSR* disclosure and performance. There is also a positive and highly significant link between the *Shariá* supervisory board (*SSB)* size and *CSR* disclosure index.

(*Continued*)

Journal of Economic Surveys (2015) Vol. 29, No. 4, pp. 637–670

Table 3. *Continued.*

Authors	Country(ies) of Study	Period	Data Type	Research Focus	Methodology	Main Finding
Elnahass *et al.* (2014)	Middle East North Africa (MENA) countries	2006–2011	74 Conventional and 32 Islamic banks	Looks at the link between loan loss provisioning (LLP) and value creation	Fixed effects regression	LLP has positive value relevance to investors in both banking sectors. Investors in Islamic banks price the discretionary component relatively lower than their conventional counterparts.
Gheeraert (2014)	55 countries	2000–2005	Aggregate data on banking and financial sector development. Data from the World bank's Financial structure database	Examines the link between Islamic banking and aggregate banking sector development	Regression	Islamic banking sector developments aids overall banking sector development.

non-parametric Data Envelopment Analysis (DEA) and a variety of inputs and outputs to gauge fund efficiency and find that some Islamic funds are more efficient than their conventional counterparts. Abdelsalam *et al.* (2014a) show that the average socially responsible investment fund is more efficient than the average Islamic fund.

7.2 *Sukuk*

A more recent trend has been to examine features of the Islamic bond – *Sukuk* – market. Cakir and Raei (2007) show that *Sukuk* returns are not highly correlated with Eurobond returns and therefore present portfolio diversification opportunities (although Derigs and Marzban, 2008 find no such potential benefits). Both Godlewski *et al.* (2010) and Alam *et al.* (2013) use event study approaches to examine investor reaction to *Sukuk* issuance – they both find evidence of negative market reaction suggesting that investors do not view such activities in a positive light. Finally, Bialkowski *et al.* (2012) also use an event study approach to look at the 'Ramadan effect' – they find that stock returns are higher and less volatile than during the rest of the year. They say, 'Ramadan positively affects investor psychology, as it promotes feelings of solidarity and social identity among Muslims world-wide, leading to optimistic beliefs that extend to investment decisions'(p.835). Table 4 provides a summary of the recent empirical finance literature.

7.3 *Islamic Micro and Social Finance*

The current practice is to avoid subterfuges concealing interest bearing lending involving Murabaha facilities (see El-Gamal, 2005). This initiative stems from charitable organizations such as Akhuwat in Pakistan to help the poor and underprivileged (see http://www.akhuwat.org.pk/). This trend is supported by academic research espousing mutual savings banks or financial cooperatives to avoid subterfuges (see El-Gamal, 2007). The rationale behind this is elaborated in Salleh *et al.* (2014) as emanating from the Qur'anic contrast of *Riba* with charity (*sadaqah*) (Q 2: 276–277, 30:39). This implies incorporating the Qard Al-Hasan facility in mutual/financial cooperatives and employing the technology of Accumulating Savings and Credit Associations (ASCRAs): (i) to fund homes for the poor and underprivileged (Ebrahim, 2009); and (ii) offer inexpensive short-term credit facility as an alternative to usurious payday loans (Salleh *et al.*, 2014). The employment of Qard Al-Hasan is deemed charitable helping social cohesiveness in contrast to *ribawi* loans, which factionalizes society (see again Ibn Taymiyah, 1951).

8. Conclusion and Future Research

An extensive empirical literature has emerged over the last decade or so investigating Islamic banking and financial issues. The main finding from this body of works is that Islamic banks are at least as efficient and (particularly for smaller banks) have lower default/insolvency risk than their conventional counterparts. Islamic banks typically focus more on higher margin small business borrowers who are less likely to default. Evidence on market power issues is mixed although there is some evidence that Islamic banks can be more competitive than their conventional counterparts. Other (albeit somewhat limited evidence) suggest that the spread of Islamic banking can aid financial inclusion and economic development. Results from the empirical finance literature, dominated by studies that focus on the risk/return features of mutual funds, finds that Islamic funds generally perform the same or better than conventional funds – there is little evidence that they perform worse than standard industry benchmarks.

Nowadays a broader array of issues are being analysed, including the link between Islamic banking and financial and economic development, the diffusion of Islamic banking, the role of *Shariá* Supervisory Boards and governance issues, the impact of religious and financial screening on fund performance, and comparisons of *Shariá* screening with other types of investment filtering – like those for socially

Table 4. Empirical Evidence from Islamic Finance.

Authors	Sample	Period	Data Type	Research Focus	Methodology	Main Finding
Ismail and Shakrani (2003)	12 Islamic Malaysian mutual funds	May 1999 to July 2001	Monthly mutual fund returns and market benchmark	Examining the link between market risk and fund returns	CAPM and cross-sectional regression	Beta explained most of the variation in Islamic fund returns.
Elfakhani *et al.* (2005)	46 Islamic mutual funds	January 1, 1997, and ends on August 31, 2002	Mutual fund monthly returns from Failaka International and Standard & Poor's	Comparing the performance of Islamic mutual funds with conventional equity benchmarks also at market timing and selectivity issues	Sharpe, Treynor, Jensen ratios plus the Mazury (TM) model	There is no statistically significant risk-adjusted abnormal reward or penalty associated with investing in *Sharia* compliant mutual funds.
Hayat (2006)	59 (Malaysian and International)	August 2001 to August 2006	Fund weekly returns from Bloomberg	Comparing return/risk performance against conventional and Islamic benchmarks	Sharpe, CAPM Jensen Alpha, Timing and Mazury (TM) model	Islamic fund do not significantly under or outperform their Islamic as well as conventional benchmarks under normal market conditions. During the bear market of 2002 Islamic funds did however significantly outperform the Islamic and conventional market.

(*Continued*)

Table 4. *Continued.*

Authors	Sample	Period	Data Type	Research Focus	Methodology	Main Finding
Abdullah *et al.*(2007)	65 Malaysian funds, 14 of which are Islamic funds	January 1992 to December 2001	Mutual fund monthly returns from	Comparing the performance of Islamic mutual funds with conventional equity benchmarks	Sharpe, Jensen Alpha, Timing and selectivity ability	Islamic funds performed better than the conventional funds during bearish economic trends while, conventional funds showed better performance than Islamic funds during bullish economic conditions.
Ferdian and Dewi (2007)	20 Malaysia 5 Indonesian Islamic Funds	1 October 2005 to 30 April 2007	Monthly returns obtained from Bloomberg	Comparing returns with the market and Islamic indexes	Treynor, Sharpe and Jensen measures	Malaysian Islamic funds outperform Indonesian Islamic Funds. Islamic mutual funds relatively outperform the market.

(*Continued*)

Journal of Economic Surveys (2015) Vol. 29, No. 4, pp. 637–670

Table 4. *Continued.*

Authors	Sample	Period	Data Type	Research Focus	Methodology	Main Finding
Cakir and Raei (2007)	Sovereign and conventional bond issues in international markets by Malaysia, Pakistan, Qatar, and Bahrain.	Date of issue to end-June 2007	Daily and Weekly price data. DataStream for Malaysian, Pakistani, and Qatari bonds. Bloomberg for Bahrain	Assesses the impact of issuance of *Sukuk* on the cost and risk structure of investment portfolios	Value-at-Risk (VaR) measures. Delta-normal and Monte Carlo simulation	Correlations of *Sukuk* returns with returns on conventional bonds are much smaller than the correlations of returns on conventional bonds with each other. They can provide portfolio diversification benefits.
Abderrezak (2008)	46 International Islamic funds	January 1997 to August 2002	Monthly returns	Comparing returns with the market and Islamic indexes and conventional funds	Sharpe, Fama and 3-factor Fama and French model. Selectivity and timing	No significant performance difference between Islamic and conventional funds. Islamic and conventional funds did not outperform the SP500.
Derigs and Marzban (2008)	Assets included in the S& P 500 index	S&P500 index on the September 17, 2007 and company data from 2006	Monthly Index and company returns from Bloomberg	Simulating various types of *Shariá* compliant portfolios	Portfolio simulation	*Shariá* -compliant portfolios can be constructed that have return and risk profiles comparable to conventional non-constrained portfolios.

(*Continued*)

Journal of Economic Surveys (2015) Vol. 29, No. 4, pp. 637–670

Table 4. *Continued.*

Authors	Sample	Period	Data Type	Research Focus	Methodology	Main Finding
Haddad *et al.* (2009)	46 International Islamic funds	January 1997 to August 2002	Monthly returns	Examine systematic risk and fund returns relating to S&P500 and FT Global Islamic index	Single factor Schwert and Seguin model	Islamic mutual funds are similar to conventional funds. Volatility persistence is affected by the market proxy.
Saad *et al.* (2010)	27 Malaysian funds of which 5 are Islamic	2002–2005	Input and Output measures (returns are an output)	Examines the efficiency and productivity (Malmquist) of the funds industry in Malaysia	Data Envelopment Analysis (DEA)	Some of the Islamic funds are more efficient than their conventional counterparts.
Godlewski *et al.* (2010)	170 Malaysian bond issues of which 77 are *Sukuk* and 93 conventional bonds	2002–2009	Date of issuance and closing stock price of companies issuing debt (from Bloomberg)	Impact of conventional bonds and *Sukuk* announcements on market	Market model event study	No significant stock-market reaction to conventional bond announcements, a negative reaction to *Sukuk* issues and significant difference in stock market reactions to *Sukuk* and conventional bond issues.

(*Continued*)

Journal of Economic Surveys (2015) Vol. 29, No. 4, pp. 637–670

Table 4. *Continued.*

Authors	Sample	Period	Data Type	Research Focus	Methodology	Main Finding
Mansor and Bhatti (2011)	128 Islamic and 350 conventional Malaysian funds	January 1995 to December 1998 and January 2005 to December 2008	Monthly returns of funds from Morningstar	Examines descriptive statistics on return and volatility comparing conventional and Islamic funds	Summary return and volatility statistics	Islamic and conventional funds outperform the market return Islamic funds are more risky than conventional Malaysian funds.
Hayat and Kräussl (2011)	145 Islamic equity funds	January 2000 to February 2009	Weekly returns	Comparing return/risk performance against conventional and Islamic benchmarks	CAPM and investigating market timing	Islamic equity funds underperform compared to Islamic as well as to conventional equity benchmarks. Underperformance seems to have increased during the 2007–2008 financial crisis.

(*Continued*)

Table 4. *Continued.*

Authors	Sample	Period	Data Type	Research Focus	Methodology	Main Finding
Hoepner *et al.* (2011)	265 Islamic equity funds from 20 countries	September 1990 - April 2009	Mutual fund monthly returns and related data from Eureka hedge	Comparing Islamic fund performance and investment style with an array of conventional benchmarks	CAPM and Carhart models	No strong evidence that Islamic funds in general under- or outperform equity markets. National characteristics explain the heterogeneity in Islamic fund performance. Islamic funds from the GCC and Malaysia perform competitively or even outperform international equity market benchmarks.
Razzaq *et al.* (2012)	9 Pakistan Islamic funds	2009–2010	Daily returns	Case study on the performance of nine funds	Sharpe, Treynor, Jensens alpha	Returns on Islamic funds are risk related.
Białkowski *et al.* (2012)	Countries where the proportion of Muslim population exceeded 50% - 14 countries	1994–2006 (Various for different countries)	Stock market index data from Datastream	Event study on the impact of Ramadan	Market model, event study	Stock returns during Ramadan are significantly higher and less volatile than during the rest of the year. No declines in market liquidity are recorded.

(*Continued*)

Journal of Economic Surveys (2015) Vol. 29, No. 4, pp. 637–670

Table 4. *Continued.*

Authors	Sample	Period	Data Type	Research Focus	Methodology	Main Finding
Alam *et al.* (2013)	79 *Sukuks*and 87 conventional bonds from Malaysia, Indonesia, Singapore, Pakistan, UAE, Bahrain and Qatar	2004–2012	Closing stock prices for firms issuing debt from Bloomberg	Impact of conventional bonds and *Sukuk* announcements on shareholder wealth	Market model event study	Negative market reaction for the announcements of *Sukuk* issues before and during 2007 global financial crisis.
Abdelsalam *et al.* (2014a)	138 Islamic funds and 636 socially responsible funds	January, 1989 to March, 2011	Input and output fund measures	Efficiency analysis comparing Islamic with social responsible mutual funds	Non-parametric Free Disposable Hull (FDH) efficiency analysis and second stage quantile regression	The average efficiency of socially responsible (SRI) funds is slightly higher than that of Islamic funds.
Azmat *et al.* (2014)	Malaysian	2002–2010	Islamic bond issuers from the IFIS data base.	Evaluation of the credit risk of Islamic (*Sukuk*) bonds	Survival probability simulation	Traditional credit risk methodologies underestimate the survival risk of Islamic bonds, or to put another way, they rate them as higher credit risk.
Abdelsalam *et al.* (2014b)	138 Islamic funds and 636 socially responsible funds	December 2000 to March 2011	Input and output fund measures. Simulation to evaluate persistence	Analyses performance persistence using efficiency analysis	Non-parametric Free Disposable Hull (FDH) efficiency analysis with second and third stage analysis	Performance of Islamic and Socially Responsible funds persist but only for worst and best performing funds.

responsible or environment friendly investments. Much of the governance work is in its infancy, as is the analysis of *Sukuk* and related instruments. In the banking area there still needs to be work done on examining systemic risks and seeing how this links to Islamic and conventional banking. Also, (as in the conventional empirical banking literature) more work is needed on the features and links between liquidity and market funding risks. There is room for more work to be done on pricing too-big-to fail and other government safety net subsidies in Islamic banking systems, as well as (hypothetical) stress testing of banks in Muslim countries. Can one identify systemically important financial institutions and measure the risks they pose to the countries and regions in which they operate? Also, as many Islamic institutions are based in the GCC countries, and as their economies are mainly driven by energy prices, it would be interesting to investigate to what extent such factors influence bank performance and risk? Broader questions should focus on linking financial and social inclusion in the Islamic world and see how this is related to notions of poverty, equality and economic development. Is there a link between health and finance in the Islamic world (see Clayton *et al.*, 2015)? These and many more questions pertinent to both the conventional and Islamic banking and financial sectors are worthy (in our view at least) of future academic investigation.

Notes

1. In general, we have abstained from taking a partisan (for or against) approach to studies in the literature to avoid the accusation of being prejudiced. However, in specific cases we have been critical of the literal perspective adopted by Islamic scholars.
2. It should be noted that not all asset-backed *Sukuk* are financial obligations resembling bonds. There are, however, other *Sukuk* structures that are quasi-equity in nature resembling the classic *Mudharabah* or *Musharakah* vehicles in early Islam.
3. See also Cizakca (1996) for an economic history of the classic *Mudharabah* facility.
4. Please note that LembagaTabung Haji (Pilgrims Fund Board) of Malaysia was the first Islamic Investment Company established in 1962 to help fund pilgrimage activities of the Malaysian Muslim Community. We are grateful to an anonymous referee for pointing this out.
5. While promoted by government, as far as we are aware, Islamic banks operating in dual economies coexist with their conventional counterparts and operate under a level regulatory playing field/competitive environment with seemingly no obvious tax advantages or incentives. It is for the same reason that empirical research typically uses similar accounting benchmarks to compare their performance such as: ROE, ROA, cost of deposits, spreads, capital ratios and so on. The Islamic Financial Services Board has published standards to customize/tailor Basel II/III capital adequacy standards to fit to the Islamic banking model, where the deposit side contractually operates on a Profit and Loss sharing basis to highlight the quasi-equity nature of the liability side of the balance sheet. Despite the fact that the adoption of the aforementioned IFSB capital adequacy approach would ease pressure on Islamic bank capital requirements, in the major jurisdictions (Saudi Arabia, UAE, Pakistan, and Malaysia) regulators tend to operate and calculate their capital adequacy requirements based on standard/conventional Basel III regulation. Furthermore, industry databases like Bloomberg, Thomson Reuters and Bankscope report data on Islamic banks absolutely comparable to that of conventional banks.
6. This misunderstanding ensues from a literal Arabic translation of the word *Riba* implying an excess or an addition over the amount loaned (see al-Zuhayli, 2006). The Qur'an, in contrast to the majority of the religious scholars, describes *Riba* as an expropriation of a counterparty's assets whether it be on a spot-trade (*riba al-fadl*) or a deferred trade (*riba an-nasi'ah*) (see Q 4:161). This is reflected in the Sunnah, where the Prophet (PBUH) is reputed to have prohibited all kinds of market manipulations (see Thomas, 2005). This outlook of the Qur'an and the Sunnah is reflected in scholarly studies such as those of Ibn Taymiya (1951) as well as that of Ibn Qayyim (1973). Ebrahim *et al.* (2014a), thus

rationalize this injunction as deterring the employment of financial facilities with endemic agency costs of debt as they lead to expropriation of the assets of either the lender (in case of risk shifting) or that of the borrower (in case of underinvestment). In the context of the recent subprime crisis, *Riba* can be construed as 'toxic' debt that can infect institutions thus impinging on both the real and financial sectors of the economy.

7. This legality or permissibility is deduced from the precedence of Prophet Muhammad and his companions. It is also rationalized by religious scholars as emanating from the Qur'anic verse (2: 275): '*God has permitted trade* (implying credit sales) *and forbidden Riba* (implying financial facilities with embedded agency issues). The ramification of this precedence has not been understood from a financial economics perspective until recently. This is explicated by Sen (1998, p. 435) as follows: '*when financial markets are imperfect* (as in the medieval era of the Prophet and his companions), *a seller can find it optimal to offer a menu of deferred payment plans*".
8. From a financial economics perspective '*Gharar*' can be construed as the following. One, it involves market manipulation ensuing from asymmetric information (Thomas, 1995). This definition is consistent with the views of Greenbaum and Thakor (1987) and has credence in the light of the recent market manipulating scandals such as LIBOR fixing, gold price fixing etc. (http://www.ft.com/indepth/libor-scandal, http://online.wsj.com/news/articles/SB10001424127887324077704578358381575462340). Two, it involves 'trading in risk' (El-Gamal, 2009). This view is consistent with that of Claessens *et al.* (2012).
9. The AAOIFI Governance Standard on Sharia Supervisory Boards mandate the appointment, composition, and report of a Shari'ah Supervisory Board (SSB) comprising of three members of which one is an expert in accounting, economics etc. Members of executive management are not normally members of the SSB. We are grateful to an anonymous referee for this comment.
10. We are grateful to an anonymous referee, who has pointed out that these *Sukuk* are tradable denominated in U.S. Dollars and rated 'A-1' by the Standard and Poor's Rating Services. According to various press releases, the IILM has issued *Sukuk* amounting to 1.85 million U.S. Dollars during the period August 2013 to November 2014 (see www.iilm.com). These facilities were reissued ten times at maturity. The amount of *Sukuk* that were issued and reissued until January 2015 amounted to 7.64 U.S. billion.
11. This study measures macroeconomic efficiency as a form of technical efficiency, which measures how close a country's production is to what that country's optimal production would be for using the same bundle of inputs and outputs.
12. An interesting question asked by one referee is to what extent is the finding of less risky lending by Islamic financial institutions due to credit rationing? It could be that because of a limited supply of funds only the least risky Islamic investors are able to borrow? We have no hard empirical evidence on this although in our opinion this cannot be explained by credit rationing; because the interest (called mark-up in Islamic terminology) rate of Islamic finance is not significantly lower than conventional finance. Even some studies claim that Islamic finance is even more expensive (Baele *et al.*, 2014). Abedifar *et al.* (2013) suggest that the lower default rate could be attributed to religiosity of borrowers as for instance they are more risk averse.
13. The distance-to-default measure used in the study is based on the structural valuation model of corporate debt by Merton (1974) and was developed by Moody's KMV as a company default indicator. It includes information from both financial statements and equity market prices. Distance-to-default indicates the number of standard deviations from a default point at a fixed time horizon, so a decline in distance-to-default suggests greater insolvency risk.
14. Islamic banks are (to some extent) discouraged from equity/quasi-equity based lending due to the relatively high capital charges PLS based lending incurs. All forms of contractual lending can of course be collateralized as legitimized by the concepts '*Rahn*' (collateral) and '*Waad*' (promise), however equity based lending is usually a modest proportion in most Islamic bank's balance sheets.

15. As pointed out by a referee, as Islamic banks mainly use non-PLS instruments this may have implications for the types of investment project that they fund, e.g. less new start-ups. Although we do not have empirical evidence on this, there is anecdotal evidence that Islamic banks are more conservative in their lending approach and are more likely to extend credit to established business.
16. *Shariá* screening has been found to tilt a portfolio towards 'growth' stocks with the exclusion of value stocks. This leads to a style bias impacting on the long term performance of the portfolio (Hoepner *et al.*, 2011).

References

Abdelsalam, O., Duygun, M.F., Matallín-Sáez, J.C., and Tortosa-Ausina, E. (2014a) On the comparative performance of socially responsible and Islamic mutual funds. *Journal of Economic Behavior and Organization* 103(Supplement Special Issue on Islamic Finance, July): S108–S128.

Abdelsalam, O., Duygun, M.F., Matallín-Sáez, J.C., and Tortosa-Ausina, E. (2014b) Do ethics imply persistence? The case of Islamic and socially responsible funds. *Journal of Banking and Finance* 40(3): 182–194.

Abderrezak, F. (2008) *The Performance of Islamic Equity Funds: A Comparison to Conventional, Islamic and Ethical Benchmarks*. PhD Thesis, Netherlands: Department of Finance, University of Maastricht.

Abdul-Majid, M., Saal, D.S., and Battisti, G. (2010) Efficiency in Islamic and conventional banking: An international comparison, *Journal of Productivity Analysis* 34(1): 25–43.

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

Abdul-Majid, M., Saal, D.S., and 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.

Abdullah, F., Hassan, T., and Mohamad, S. (2007) Investigation of the performance of Malaysian Islamic unit trust funds. *Managerial Finance* 33(2): 142–153.

Abedifar, P., Molyneux, P., and Tarazi, A. (2013) Risk in Islamic banking, *Review of Finance* 17(6): 2035–2096.

Aggarwal, R.K. and Yousef, T. (2000) Islamic banks and investment financing, *Journal of Money, Credit and Banking* 32(1): 93–120.

Alam, N., Hassan, M.K., and Haque, M.A. (2013) Are Islamic bonds different from conventional bonds? International evidence from capital market tests. *Borsa Istanbul Review* 13(3): 22–29.

Al-Jarrah, I. and Molyneux, P. (2005) Efficiency in Arabian banking. In M. Iqbal and R. Wilson (eds.), *Islamic Perspectives on Wealth Creation*, Chapter 6, (pp. 97–117). Edinburgh: Edinburgh University Press.

Al-Zuhayli, W. (2006). The juridical meaning of *riba*. In A.S. Thomas (ed.), *Interest in Islamic economics: Understanding riba*, (pp. 26–54). London, New York: Routledge.

Archer, S. and Abdel Karim, R.A. (2009). Profit-sharing investment accounts in Islamic banks: Regulatory problems and possible solutions. *Journal of Banking Regulation* 10: 300–306.

Aysan, A.F., Disli, M., and Oztur, H. (2014) The impact of religious commitment on Islamic bank depositors: Does size matter? Paper presented at a seminar on *Finance and Development in Muslim Economies*, sponsored by Islamic Research Training Institute (IRTI), Islamic Development Bank and the Journal of Financial Services Research, 15 September, Bangor University, UK.

Azmat, S., Skully, M., and Brown, K (2014) Credit risk in Islamic joint venture bond. *Journal of Economic Behavior and Organization* 103(Supplement Special Issue on Islamic Finance, July): S129–S145

Bader, M.K.I., Mohamad, S., Ariff, M., and Hassan, T. (2008) Cost, revenue and profit efficiency of Islamic versus conventional banks: International evidence using Data Envelopment Analysis. *Islamic Economic Studies* 15(2): 23–76.

Baele, L., Farooq, M., and Ongena, S. (2014) Of religion and redemption: Evidence from default on Islamic loans. *Journal of Banking and Finance* 44(6):141–159.

Bank Indonesia Report (2009) *The Lack of Profit-and-Loss Sharing Financing in Indonesia's Islamic Banks: Revisited*. Jakarta, Indonesia: Center of Education and Central Banking Studies, Bank Indonesia.

Bashir, A. (1999) Risk and profitability measures in Islamic banks: The case of two Sudanese banks, *Islamic Economic Studies* 6(2): 1–24.

Beck, T., Demirgüc-Kunt, A. and Merrouche, O. (2013) Islamic vs. conventional banking: business model, efficiency and stability. *Journal of Banking and Finance* 37(2): 433–447.
Białkowski, J., Etebari, A., and Wisniewski, T.P (2012) Fast profits: Investor sentiment and stock returns during Ramadan'. *Journal of Banking and Finance* 36(3): 835–845.
Cakir, S and Raei, F. (2007) Sukuk vs. Eurobonds: Is there a difference in Value-at-Risk? *International Monetary Fund Working Paper*, WP/07/237, October, Washington, DC: IMF
Chong, B.S. and Liu, M.H. (2009) Islamic banking: Interest-free or interest-based? *Journal of Pacific-Basin Finance* 17(1): 125–144.
Čihák, M. and Hesse, H. (2010) Islamic banks and financial stability: An empirical analysis. *Journal of Financial Services Research* 38(2): 95–113.
Cizakca, M. (1996). *Comparative Evolution of Business Partnerships*. Leiden: E. J. Brill
Claessens, S., Pozsar Z., Ratnovski L., and Singh M. (2012) Shadow Banking: Economics and Policy. *International Monetary Fund Staff Discussion Note* SDN/12/12, Washington, DC: IMF
Clayton, M., Liñares-Zegarra, J., and Wilson, J.O. (2015) Does debt affect health? Cross country evidence on the debt-health nexus. *Social Science and Medicine* 130: 51–58.
Credit Suisse (2013) *Global Wealth Databook*. Zurich: Credit Suisse Research Institute. Available at: https://publications.credit-suisse.com/tasks/render/file/?fileID=1949208D-E59A-F2D9-6D0361266-E44A2F8. (Last accessed March 3, 2015).
Dar, H. A. and Presley, J. R. (2000) Lack of profit loss sharing in Islamic banking: Management and control imbalances. Department of Economics, Loughborough University.
Derigs, U. and Marzban, S. (2008) Review and analysis of current Shariah-compliant equity screening practices. *International Journal of Islamic and Middle Eastern Finance and Management* 1(4): 285–303.
Ebrahim, M.S. (2009). Can an Islamic model of housing finance cooperative elevate the economic status of the underprivileged?" *Journal of Economic Behavior and Organization* 72(3): 864–883.
Ebrahim, M.S., Jaafar, A., Molyneux, P. and Salleh, M.O. (2014a). Agency costs, financial contracting and the Muslim world. Working Paper, UK: Durham University Business School, University of Durham.
Ebrahim, M.S., and Sheikh, M. (2014b). The *Muḍāraba* facility: Evolution, stasis and contemporary revival, Working Paper, England, UK: Durham University Business School.
Economist, The (2014) Islamic finance, Big interest, no interest, 412 (8904) September 13, 75–76.
Elfakhani, S., Hassan, M.K., and Sidani, Y. (2005) Comparative performance of Islamic versus secular mutual funds. Presentation at the *Economic Research Forum Conference* in Cairo, Egypt, May, 19–21.
El-Gamal, M.A. and Inanoglu, H. (2002) Efficiencies and unobserved heterogeneity in Turkish banking: 1990–2000, unpublished working paper, Rice University, Department of Economics.
El-Gamal, M.A. (2005). Limits and dangers of Shari'a arbitrage. In S. Ali (ed.), *Islamic Finance: Current Legal and Regulatory Issues*. Cambridge, MA: Islamic Finance Project, Harvard Law School.
El-Gamal, M.A. (2007) Mutuality as an Antidote to Rent-Seeking *Shariah* Arbitrage in Islamic Finance. *Thunderbird International Business Review* 49(2): 187–202.
El-Gamal, M.A. (2009) *Islamic Finance: Law, Economics and Practice*. NY: Cambridge University Press.
Elnahass, M, Izzeldin, M., and Abdelsalam, O. (2014) Loan loss provisions, bank valuations and discretion: A comparative study between conventional and Islamic banks. *Journal of Economic Behavior and Organization* 103(Supplement Special Issue on Islamic Finance, July): S160–S173.
Errico, L and Farahbaksh, M (1998) Islamic banking: Issues in prudential regulations and supervision, IMF Working Paper No 98/30, pp. 1–32.
Ferdian, I. and Dewi, M. (2007) The performance analysis of Islamic mutual funds – A comparative study between Indonesia and Malaysia. Presentation at the *International Conference on Islamic Capital Markets*, August 27–29, Jakarta, Indonesia.
Gheeraert, L. and Weill, L. (2014) Does Islamic banking development favour macroeconomic efficiency? Evidence on the Islamic finance-growth nexus. *Laboratoire de RechercheenGestion&Economie Working Paper* 2014-04. University of Strasbourg, Strasbourg: LaRGE.
Gheeraert, L. (2014) Does Islamic finance spur banking sector development? *Journal of Economic Behavior and Organization* 103(Supplement Special Issue on Islamic Finance, July): S4–S20.
Godlewski, C.J, Turk Ariss, R., and Weill, L. (2010) 'Are Islamic investment certificates special? Evidence on the post-announcement performance of Sukuk issues', *Laboratoire de RechercheenGestion et Economie Working Paper2010-05*, University of Strasbourg, Strasbourg: LaRGE.

Goitein, S.D. (1971) *A Mediterranean Society*. Berkeley and Los Angeles: University of California Press.
Haddad, M., Homaifar, G., Elfakhani, S., and Ahmedov, H. (2009) Intertemporal test of beta stationarity performance of Islamic sector structured mutual funds. *Journal for International Business and Entrepreneurship Development* 4(4): 275–285.
Hassan, M.K. and Bashir, A. (2003) Determinants of Islamic banking profitability, paper presented at the *Economic Research Forum (ERF) Tenth Annual Conference*, Marrakesh, Morocco, 16–18 December.
Hassan, M.K. and Dridi, J. (2010) The effects of the global crisis on Islamic and conventional banks: A comparative study. *International Monetary Fund Working Paper No. 10/201*, Washington, DC: IMF
Hassan, M.K, Yu, J-S, and Kim, D-W. (2014) Financial inclusion and economic growth in OIC countries. Paper presented at the seminar on *Finance and Development in Muslim Economies*, sponsored by Islamic Research Training Institute (IRTI), Islamic Development Bank and the Journal of Financial Services Research, 15 September, Bangor University, UK.
Hayat, R. (2006). An empirical assessment of Islamic equity fund returns. Failaka website: 1–69. Available at: http://www.kantakji.com/media/7134/70093.pdf. (Last accessed May 8, 2015).
Hayat, R. and Kräussl, R. (2011) Risk and return characteristics of Islamic equity funds. *Emerging Markets Review* 12(2): 189–203.
Hillebrand, H. J. (ed.) (2009). *The Protestant Reformation*, Revised Edition, NY: Harper Perennial.
Hoepner, A., Rammal, H., and Rezec, M. (2011) Islamic mutual funds' financial performance and international investment style: Evidence from 20 countries. *The European Journal of Finance* 17(9-10): 829–850.
Ibn Qayyim, al-JawziyyaShams al-Din Abu'Abd Allah Muhammad. (1973). *I'lam al-muwaqqa'in 'ala rabb 'al-'alamin*. In Taha'Abd Al-Ra'ufSa'd (Ed.), Vol. II, 153–164 and Vol. III, 4. Lebanon: Dar Al-Jil, Beirut.
Ibn Taymiyah, Taqi al-Din Ahmed bin 'Abd al-Halim. (1951) Al-Qawā'id al-Nūrāniyya al-fiqhiyya. In M.al-Fiqi (ed.) (pp. 112–113) Cairo, Egypt: Al-sunna al-muhammadiyya.
Imam, P. and Kpodar, K. (2010) Islamic banking: How has it diffused? *International Monetary Fund Working Paper No. 10/195*, Washington, DC: IMF.
Iqbal, M and Molyneux, P. (2005) *Thirty Years of Islamic Banking*. London: Palgrave Macmillan.
Islamic Financial Services Board (2013) *Islamic Financial Services Industry Stability Report*, IFSB Bank Negara Malaysia: Kuala Lumpur.
Ismail, A. and Shakrani, M.S. (2003) The conditional CAPM and cross-sectional evidence of return and beta for Islamic unit trusts in Malaysia. *Journal of Economics and Management* 11(1): 1–31.
Johnes, J., Izzeldin, M. and Pappas, V. (2009) The efficiency of Islamic and conventional banks in the Gulf Cooperation Council (GCC) countries: An analysis using financial ratios and Data Envelopment Analysis. Lancaster University Management School Working Paper 2009/023, Lancaster, UK.
Management School Working Paper 2009/023. Lancaster UK: Lancaster University.
Johnes, J., Izzeldin, M., and Pappas, V. (2014) A comparison of performance of Islamic and conventional banks 2004–2009, *Journal of Economic Behavior and Organization* 103(Supplement Special Issue on Islamic Finance, July): S93–S107.
Kahf, M. and Khan, T. (1992). Principles of Islamic Financing: A Survey, Research paper No. 16.Jeddah, KSA: Islamic Research and Training Institute, Islamic Development Bank.
Khan, T. and Ahmed, H. (2001) Risk management: An analysis of issues in Islamic financial industry, *Islamic Development Bank Occasional Paper No. 5*, Islamic Research Training Institute, Jeddah: Islamic Development Bank.
Majid, A.M., Nor, N.G., and Said, F.F. (2003) Efficiency of Islamic banks in Malaysia, Paper presented to the *Fifth International Conference on Islamic Economics and Banking*, Bahrain, October, 7–9.
Mallin, C., Farag, H., and Ow-Yong, K. (2014) Corporate social responsibility and financial performance in Islamic banks. *Journal of Economic Behavior and Organization* 103(Supplement Special Issue on Islamic Finance, July): S21–S38.
Mansor, F. and Bhatti, M. (2011) Islamic mutual funds performance for emerging markets, during bullish and bearish periods: The case of Malaysia. Paper presented at the *2nd International Conference on Business and Economic Research*. 14–16 March, Langkawi, Kedah, Malaysia.
Merton, R.C., 1974. On the pricing of corporate debt: the risk structure of interest rates. *Journal of Finance* 29: 449–470.

Mohamad, S., Hassan, T., and Bader, M.K.I. (2008) Efficiency of conventional versus Islamic banks: International evidence using the stochastic frontier approach (SFA). *Journal of Islamic Economics, Banking and Finance* 4(2): 107–130.

Mollah, S., Hassan, M.K., and Al Farooque, O. (2014) Corporate governance, risk-taking and firm performance of Islamic banks during the global financial crisis, Paper presented at the seminar on *Finance and Development in Muslim Economies*, sponsored by Islamic Research Training Institute (IRTI) , Islamic Development Bank and the Journal of Financial Services Research, 15 September, Bangor University, UK.

Molyneux, P. and Iqbal, M., (2005) *Arab Banking and Financial Systems*, London: Palgrave Macmillan.

Obaidullah, M. (2005) Islamic financial services, *Islamic Economics Research Center*, Occasional Paper 158, King Abdulaziz University, Jeddah, Saudi Arabia.

Ongena, S. and Şendeniz-Yüncü, İ. (2011) Which firms engage small, foreign, or state banks? And who goes Islamic? Evidence from Turkey. *Journal of Banking and Finance* 35(12): 3213–3224.

Pappas, V., Ongena, S., Izzeldin, M. and Fuertes, A.-M. (2014) Do Islamic banks 'Live free and die harder'?, Paper presented at the seminar on *Finance and Development in Muslim Economies*, sponsored by Islamic Research Training Institute (IRTI) , Islamic Development Bank and the Journal of Financial Services Research, 15 September, Bangor University, UK.

Pryor, F.L. (2007) The economic impact of Islam on developing countries. *World Development* 35(11): 1815–1835.

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. (Last accessed May 8, 2015).

Razzaq, N., Gul, S., Sajid, M., and Mughal, S. (2012) Performance of Islamic mutual funds in Pakistan. *Economic and Finance Review* 2(3): 16–25.

Saad, N., Majid, M., Kassim, S., Hamid, Z., and Yusof, R. (2010) A comparative analysis of the performance of conventional and Islamic unit trust companies in Malaysia. *International Journal of Managerial Finance* 6(1): 24–47.

Saeed, M. and Izzeldin, M (2014) Examining the relationship between default risk and efficiency in Islamic and conventional banks. *Journal of Economic Behavior and Organization* (forthcoming).

Salleh, M.O., Jaafar, A., and Ebrahim, M.S. (2014). Can an interest-free credit facility be more efficient than a usurious payday loan? *Journal of Economic Behavior and Organization* 103: S74-S92.

Samad, A. (1999) Comparative efficiency of the Islamic bank vis-à-vis conventional banks in Malaysia. *IIUM Journal of Economics and Management* 7(1): 1–25.

Sen, A. (1998) Seller financing of consumer durables. *Journal of Economics and Management Strategy* 7(3): 435–460.

Shaban, M., Duygun, M., Anwar, M., and Akbar, B. (2014) Diversification and banks' willingness to lend to small businesses: Evidence from Islamic and conventional banks in Indonesia. *Journal of Economic Behavior and Organization* 103(Supplement Special Issue on Islamic Finance, July): S39–S55.

Sundararajan, V. and Errico, L. (2002) Islamic financial institutions and products in the global financial system: Key issues in risk management and challenges ahead. *International Monetary Fund Working Paper WP/02/192*. Washington, DC: IMF.

The City UK (2013) *Islamic Finance*. London: TheCityUK. Available at: http://www.thecityuk.com/research/our-work/reports-list/islamic-finance-2013/. (Last accessed May 8, 2015).

Turk Ariss, R. (2010) Competitive conditions in Islamic and conventional banking: A global perspective, *Review of Financial Economics* 19(3): 101–108.

Uzair, M. (1978). *Interest-Free Banking*. Karachi, Pakistan: Royal Book Company.

Weill, L. (2011) Do Islamic banks have greater market power? *Comparative Economic Studies* 53(2): 291–306.

World Bank (2013) *Economic Development and Islamic Finance*. In Z. Iqbal and A. Mirakhor (eds.), Washington, DC: World Bank. Available at: http://dx.doi.org/10.1596/978-0-8213-9953-8. (Last accessed May 8, 2015).

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