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A survey of Islamic banking and finance literature: Issues, challenges and future directions

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ABSTRACT

This paper undertakes a survey of the literature on Islamic banking and finance. The aim is to provide an understanding of the literature, identify key issues and challenges, and explore potential directions for future research. Our survey reveals that there is a need to; (a) focus on new areas of research including datasets, (b) establish the economic significance of the statistical results, (c) undertake research that explores new questions/hypotheses, and (d) establish the robustness of the findings. The paper discusses these issues.

1. Introduction

This paper undertakes a survey of the literature on Islamic banking and finance. The goal is to provide an understanding of the work published in good journals,¹ the lessons learned, and key issues and challenges that exist for futures researchers to address. The paper concludes a research agenda for future research in Islamic banking and finance.

Our approach in addressing the aim of this paper is the following. First we identify all papers that are published in Islamic banking and finance in good journals. This search results in a total of 112 papers published in such journals as the *Journal of Economic Behavior and Organisation*, *Review of Finance*, *Journal of Banking and Finance*, *Journal of Corporate Finance*, *Pacific-Basin Finance Journal*, *Journal of International Financial Markets, Institutions and Money*, *Economic Modelling*, *International Review of Economics and Finance*, *International Review of Finance*, *Emerging Markets Review*, *Journal of Financial Services Research*, *World Development*, *Journal of Business Ethics*, *Applied Economics*, and *Economics Letters*. An important point of note here is that over 90% of these papers have been published in the last 4–5 years. This surge in publication can be attributed to a number of special issues on Islamic finance by some of these journals.

Our survey shows that these papers belong to six major topics, namely, Islamic bank performance, equity market performance, asset pricing, Islamic bonds, market interactions, and ethical issues in Islamic finance. Out of these, the most popular topic of research is Islamic bank performance on which there are 44% of papers. This is followed by research on equity market performance (24%). Research on asset pricing and market interactions make up between 7% and 13% of published research. The least popular topic of research is about the Islamic bond market.

Against this background, the rest of the survey is organised as follows. In [Section 2](#), existing research in each of the five identified areas are discussed and key lessons learned are highlighted. [Section 3](#) contains a discussion of the main features of the literature.

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E-mail address: narayan@deakin.edu.au (P.K. Narayan).¹ We define good journals as those journals ranked A and above by the Australian Business Dean's Council; see <http://www.abdc.edu.au/master-journal-list.php>.

Section 4 identifies the key challenges and establishes an agenda for future research. The final section concludes.

2. Existing research

This section has two parts. In the first part, we discuss what we have learnt about Islamic finance on each of the six most popular topics of research. A summary of these topics appear in Tables 1 to 6. In the second part, we identify the key features of this literature. It is these features of the literature which allow us to identify key challenges in Section 3, and draw an agenda for future research in Section 4.

2.1. Bank performance

The literature on Islamic bank performance is the most popular. Within this banking literature, there are several variants of studies. Beck et al. (2013) use data from 22 countries and show that Islamic banks are less cost effective compared to conventional banks but have a higher intermediation ratio, higher asset quality and are better capitalized. Abedifar et al. (2013) use data for over 200 banks to show that (a) small Islamic banks are more stable and (b) loan quality of Islamic banks is less responsive to domestic interest rates compared to conventional banks. Kabir et al. (2015) explore credit risk in Islamic and non-Islamic banks and find, expectedly, that Islamic banks have significantly lower credit risk compared to conventional banks. Olson and Zoubi (2011) claim that Islamic banks are less cost efficient but more profit efficient. Mobarek and Kalonov (2014) and Yousefi et al. (1997) show that Islamic banks are more stable.

Sorwar et al. (2016), using a sample of 65 Islamic and 65 conventional banks, find no difference in risk between Islamic and non-Islamic banks. Chong and Liu (2009) provide a different perspective by arguing that only a small proportion of Islamic bank financing is strictly based on profit and loss sharing. They argue that the bulk of the Islamic deposits are closely pegged to conventional deposits.² Grira et al. (2016) analyse deposit insurance premiums of Islamic banks vis-a-vis conventional banks. Based on a sample of 352 Islamic banks and over 30,000 conventional banks covering 213 countries they find that premiums for publicly listed Islamic banks are 28% lower than corresponding conventional banks.

Baele et al. (2014) compare default rates on conventional and Islamic loans using data from Pakistan. Their main conclusion is that default rate of Islamic loans is less than half the default rate of conventional loans. In addition, using a sample 44 Islamic banks and 84 conventional banks from 18 countries, Daher et al. (2015) show that privately owned Islamic banks are better able to safeguard shareholders by mitigating the effects of displaced commercial risk through higher capital buffers. In addition, Pappas et al. (2016) use data on 421 banks to show that Islamic banks have a significantly lower risk of failure than conventional banks.³

Several studies (see Rosman et al., 2014; Farook et al., 2014; Ahmad and Luo, 2011) explore the efficiency of Islamic banks with many comparing their efficiency with conventional banks (see Abdul-Majid et al., 2011; Darrat, 1988; Karim et al., 2014; Johnes et al., 2014; Wanke et al., 2016a).⁴ These studies provide mixed results on efficiency. Johnes et al. (2014), using data from 18 countries covering 45 Islamic banks and 207 conventional banks, conclude that Islamic banks are on par with conventional banks in terms of gross efficiency. Bank efficiency has also been studied during the subprime crisis. Belanès et al. (2015) use data from 30 Islamic banks and show that bank efficiency did decline during the crisis but this decline was minor.^{5,6,7}

Relatedly, Saeed and Izzeldin (2014) study the relationship between efficiency and default risk. Using data from eight countries covering 23 Islamic banks and 83 conventional banks they show that a decrease in default risk is associated with lower efficiency levels.⁸

There are studies that also test for the determinants of efficiency. Wanke et al. (2016b) use data from 114 Islamic banks covering 24 countries and find that variables related to country origin and cost structure have an impact on efficiency.

There is another group of banking literature where the focus is on understanding the determinants of bank performance. Sun et al. (2016) find that capital adequacy, management quality, and diversification are all key determinants of margins.

There are also studies that explore corporate governance issues with respect to Islamic banks. For example, Abdelsalam et al. (2016), using a sample of 24 Islamic and 76 conventional banks, find that Islamic banks are less likely to manage earnings and end up adopting more conservative accounting policies. Mallin et al. (2014) explore the relationship between corporate social responsibility and financial performance of 90 Islamic banks covering 13 countries. A range of findings characterize Islamic banks in their study. Islamic banks; (i) pay least attention to environmental issues; (ii) show considerable awareness of the mandatory disclosure recommendations of the Accounting and Auditing Organisation for Islamic Financial Institutions and less awareness of the voluntary CSR disclosure; and (iii) show greater commitment to universal disclosures. Mollah and Zaman (2015) test the effect of Shariah supervisory board, board structure, and CEO power on bank performance using data consisting of 86 Islamic and 86 conventional

² Saraç and Zeren (2015) show that Islamic and conventional bank interest rates are mostly cointegrated in the case of Turkey. Ergeç and Arslan (2012) find that Turkish Islamic banks respond to interest rates. Azzam and Rettab (2013) show that Islamic banks are risk-averse while conventional banks are risk-neutral.

³ Performance of banks in terms of capitalisation, profitability and liquidity has been considered by Alqahtani et al. (2016). They find that Islamic banks performed better on these measures during the early stages of the global financial crisis but worse so later in the crisis stage.

⁴ The pricing behaviour of loan loss provisions in Islamic and conventional banks have been studied by Elnahass et al. (2014). They find that Islamic banks price the discretionary component of the LLP lower than conventional banks.

⁵ In a related study, Gregoriou et al. (2016) show that a change from a conventional to a Islamic banking system improves the liquidity of bank stocks.

⁶ Gheeraert and Weill (2015) examine whether development of Islamic banking influences macroeconomic efficiency. Using data from 70 countries, they find that Islamic banking development has stimulated macroeconomic efficiency, although there is a threshold effect to this proposed relationship.

⁷ Čihák and Hesse (2010) show, using data from 77 Islamic banks and 397 conventional banks that small Islamic banks tend to be financially stronger than small conventional banks.

⁸ The volatility of the Islamic banking sector has also been considered: Fakhfekh et al. (2016) study the volatility dynamics of Islamic and conventional banks using a GARCH type model. They find that bad news affects the volatility of conventional banks much more than Islamic banks.

Table 1
Summary of the bank performance topic.

Sub-theme	Papers	Findings
Bank performance	<ul style="list-style-type: none"> ● Beck et al. (2013) ● Abedifar et al. (2013) ● Kabir et al. (2015) ● Olson and Zoubi (2011) ● Mobarek and Kalonov (2014) ● Yousefi et al. (1997) ● Mollah et al. (2016) ● Chong and Liu (2009) ● Saraç and Zeren (2015) ● Ergec and Arslan (2012) ● Azzam and Rettab (2013) ● Griira et al. (2016) ● Baele et al. (2014) ● Alqahtani et al. (2016). 	<ul style="list-style-type: none"> ● Islamic banks are less cost effective compared to conventional banks but have a higher intermediation ratio, higher asset quality and are better capitalized. ● Small Islamic banks are more stable. ● Loan quality of Islamic banks is less responsive to domestic interest rates compared to conventional banks. ● Islamic banks have significantly lower credit risk compared to conventional banks. ● Islamic banks are less cost efficient but more profit efficient. ● Islamic and conventional bank interest rates are mostly co-integrated. ● Islamic banks are risk-averse while conventional banks are risk-neutral.
Efficiency and default risk Loan loss provisions	<ul style="list-style-type: none"> ● Saeed and Izzeldin (2014) ● Elnahass et al. (2014) 	<ul style="list-style-type: none"> ● A decrease in default risk is associated with lower efficiency levels. ● Islamic banks price the discretionary component of the loan loss provisions lower than conventional banks.
Volatility of the Islamic banking sector	<ul style="list-style-type: none"> ● Fakhfekh et al. (2016) 	<ul style="list-style-type: none"> ● Bad news affects the volatility of conventional banks much more than Islamic banks.
Efficiency of Islamic banks and conventional banks	<ul style="list-style-type: none"> ● Rosman et al. (2014) ● Farook et al. (2014) ● Ahmad and Luo (2011) ● Abdul-Majid et al. (2011) ● Darrat (1988) ● Karim et al. (2014) ● Johnes et al. (2014) ● Wanke et al. (2016a) ● Belanès et al. (2015) ● Gregoriou et al. (2016) ● Gheeraert and Weill (2015) ● Čihák and Hesse (2010) ● Wanke et al. (2016b) 	<ul style="list-style-type: none"> ● Mixed results on efficiency. ● Islamic banks are on par with conventional banks in terms of gross efficiency. ● Bank efficiency did decline during the crisis but this decline was minor.
Determinants of bank efficiency	<ul style="list-style-type: none"> ● Sun et al. (2016) 	<ul style="list-style-type: none"> ● Variables related to country origin and cost structure have an impact on efficiency.
Determinants of bank performance	<ul style="list-style-type: none"> ● Sun et al. (2016) 	<ul style="list-style-type: none"> ● Capital adequacy, management quality, and diversification are all key determinants of margins.
Corporate governance issues of Islamic banks	<ul style="list-style-type: none"> ● Abdelsalam et al. (2016) ● Mallin et al. (2014) ● Mollah and Zaman (2015) ● Mollah et al. (2016) ● Athari et al. (2016) 	<ul style="list-style-type: none"> ● Islamic banks are less likely to manage earnings and end up adopting more conservative accounting policies. ● Islamic banks pay least attention to environmental issues. ● Islamic banks show considerable awareness of the mandatory disclosure recommendations of the Accounting and Auditing Organisation for Islamic Financial Institutions and less awareness of the voluntary CSR disclosure. ● Islamic banks show greater commitment to universal disclosures. ● Shariah supervisory board has a positive effect on Islamic bank performance while board structure and CEO power have negative effects.
Corporate governance issues of Islamic banks	<ul style="list-style-type: none"> ● Sun et al. (2016) 	<ul style="list-style-type: none"> ● The governance structure of Islamic banks allows them to take higher risks and achieve better performance because of product complexities and transaction mechanisms.
Islamic banks and small medium enterprises (SMEs)	<ul style="list-style-type: none"> ● Shaban et al. (2016) ● Aysan et al. (2016b) ● Aysan et al. (2016a) ● Kumru and Sarntisart (2016) 	<ul style="list-style-type: none"> ● Price competition will allow Islamic banks to gain market share because of its differentiated product; however, at a later stage lending to SMEs declines. ● Islamic banks are more inclined toward financing SMEs compared to conventional banks.
Macro perspective in effects of Islamic banking	<ul style="list-style-type: none"> ● Ibrahim (2016) ● Imam and Kpodar (2016) ● Abedifar et al. (2016) ● Gheeraert (2014) 	<ul style="list-style-type: none"> ● The cyclical nature of bank lending only matters to conventional banks and not to Islamic banks. ● Islamic banking is positively related to economic growth. ● Strong relationship between market share of Islamic banks and financial development including economic welfare.
Theoretical work on Islamic finance	<ul style="list-style-type: none"> ● Bashir (1983) ● Ebrahim et al. (2016) ● Azmat et al. (2015a) 	<ul style="list-style-type: none"> ● Islamic finance spurs banking sector development. ● Develop a model of portfolio management for Islamic banks. ● Develop a model of structural flaws of securitized debt. ● Develop a model to study the dominance of asset side debt contracts in Islamic banks.

Table 2
Summary of the asset pricing topic.

Sub-theme	Papers	Findings
Stock return predictability	<ul style="list-style-type: none"> • Narayan et al. (2016a) • Narayan and Bannigidadmath (2015) 	<ul style="list-style-type: none"> • A dozen financial and macroeconomic variables are able to predict Islamic stock return • Financial news is a powerful source of information to predict Islamic stock market returns as well as conventional stock market returns. • Information utilized from predictive model is useful to devising profitable trading strategies.
Price discovery	<ul style="list-style-type: none"> • Narayan et al. (2016b) 	<ul style="list-style-type: none"> • Using a range of econometric tests, time-varying price discovery is able to predict Islamic portfolio stock returns. • This evidence of statistical predictability translates to mean-variance investor profits of 7.36% per annum.
Islamic stock risk-return characteristics	<ul style="list-style-type: none"> • Merdad et al. (2015) • Hayat and Kraeussl (2011) 	<ul style="list-style-type: none"> • The Islamic risk factor captures strong common variation in Saudi stock returns. • Islamic equity funds underperform compared to both Islamic and conventional equity benchmarks.
Calendar effect	<ul style="list-style-type: none"> • Białkowska et al. (2012) • Białkowski et al. (2013) • Abalala and Sollis (2015) 	<ul style="list-style-type: none"> • Stock returns during Ramadan are significantly higher and less volatile than during the rest of the year. • The performance of domestic institutional funds, hybrid funds and foreign Turkish equity funds is substantially higher during Ramadan. • There is a positive Saturday effect on stock returns.

Table 3
Summary of the bond market topic.

Sub-theme	Papers	Findings
Islamic bond credit ratings	<ul style="list-style-type: none"> • Azmat et al. (2015b) • Azmat et al. (2014a) 	<ul style="list-style-type: none"> • Islamic bond characteristics, such as the type of religious advisor, the regulatory changes by the Accounting and Auditing Organization for Islamic Financial Institutions, and the bond issuer's industry all influence bond ratings.
Factors affect an issuer's choice of Islamic bond structure	<ul style="list-style-type: none"> • Azmat et al. (2014b) 	<ul style="list-style-type: none"> • There is a significant difference between Islamic and conventional bond issuer's choice of determinants which they attribute to Islamic bond specific characteristics.
Shariah compliance challenge	<ul style="list-style-type: none"> • Azmat et al. (2014c) 	<ul style="list-style-type: none"> • Due to higher Islamic instrument cost, the Islamic bond industry's existence is contingent upon a Shariah conscious ethical investor base that can absorb the lower Shariah premium. • Competition amongst Shariah advisors along with issuer fatwa shopping results in a non-compliant Islamic financial instrument. • The Shariah compliance challenge is dependent on Shariah conscious ethical investors, apart from market incentives and strong regulations.
Islamic bonds and stock market conditions	<ul style="list-style-type: none"> • Naifar et al. (2016) 	<ul style="list-style-type: none"> • The Islamic bonds relate significantly to stock market volatility. • Islamic bond yields are more sensitive to global (conventional) stock markets than to Islamic stock markets.

banks. They find that while Shariah supervisory board has a positive effect on Islamic bank performance, board structure and CEO power have negative effects. Mollah et al. (2016) use data from 14 countries consisting of 52 Islamic banks and 104 conventional banks to investigate whether governance structures influence risk taking and performance of Islamic banks vis-a-vis conventional banks. They conclude that the governance structure of Islamic banks allows them to take higher risks and achieve better performance because of product complexities and transaction mechanisms.⁹

There is work also on the relationship between Islamic banks and small medium enterprises (SMEs). In theoretical work, Shaban et al. (2016) suggest that price competition will allow Islamic banks to gain market share because of its differentiated product; however, at a later stage lending to SMEs declines. In applied work, using Turkish bank data, Aysan et al. (2016b) show that Islamic banks are more inclined toward financing SMEs compared to conventional banks.^{10,11}

There is another branch of the literature which has taken a more macro perspective in trying to understand the effects of Islamic banking.¹² Imam and Kpodar (2016) use data from 52 countries and show that Islamic banking is positively related to economic growth. Abedifar et al. (2016) study the finance-growth nexus and dual-banking systems using yearly data from 22 Islamic countries.

⁹ Athari et al. (2016) examine the dividend policy behaviour of Islamic and conventional banks. One of their key findings is that Islamic banks use the dividend policy as a substitute mechanism for alleviating relatively more significant agency problems and higher risks of expropriation by insiders.

¹⁰ Aysan et al. (2016a) argue that deposit insurance reform has increased the market discipline in the Islamic banking sector in Turkey.

¹¹ The welfare implications of Islamic banks are studied in Kumru and Sarntisart (2016).

¹² Ibrahim (2016) studies business cycle and bank lending issues. Using a panel data consisting of 21 conventional banks and 16 Islamic banks. He finds that the cyclicity of bank lending only matters to conventional banks and not to Islamic banks.

Table 4
Summary of the market interaction topic.

Sub-theme	Papers	Findings
Co-movement, cointegration and/or spillover and contagion effects in Islamic markets	<ul style="list-style-type: none"> ● Rizvi et al. (2015) ● Kenourgios et al. (2016) ● Hammoudeh et al. (2014) ● Alexakis et al. (2016) ● Alaoui et al. (2015) ● Ajmi et al. (2014) ● Mazouz et al. (2016) ● Yilmaz et al. (2015) ● Sensoy (2016) ● Balçilar et al. (2015) ● Nazlioglu et al. (2015) 	<ul style="list-style-type: none"> ● Islamic markets were less vulnerable than conventional markets to the 2007 global financial crisis. ● Islamic equities and bonds may provide a cushion against risk and instability, more so in periods of economic and financial turmoil. ● There is a dynamic dependence of the global Islamic equity index with global conventional equity market index. ● Not only Islamic markets co-move, they are also related to their conventional counterparts. ● Islamic stocks co-move with the Islamic market index. ● There are positive risk exposures of Islamic equity sectors from global market shocks. ● There is volatility contagion between Islamic and conventional equity markets.
Islamic market and other markets	<ul style="list-style-type: none"> ● Majdoub and Sassi (2016) ● Nagayev et al. (2016) ● Mensi et al. (2015) 	<ul style="list-style-type: none"> ● There is strong evidence of asymmetric spillover effects from the Chinese market to Asian Islamic stock markets. ● There is a substantial and persistent increase in return correlations between commodities and the Islamic market returns at the onset of the 2008 financial crisis. ● Investors can diversify risk (or minimise risks) during crisis times by including in their portfolio either gold or Islamic stocks.

Table 5
Summary of the equity performance topic.

Sub-theme	Papers	Findings
Trading-strategy-based profitability	<ul style="list-style-type: none"> ● Narayan and Phan (2016) ● Narayan et al. (2015) ● Dewandaru et al. (2015) ● Derigs and Marzban (2009) 	<ul style="list-style-type: none"> ● Islamic stocks are profitable. ● Momentum strategies are profitable for Islamic stocks but profit is dependent on stock characteristics. ● Profitability of Islamic stocks is merely compensation for risks and not due to mispricing. ● Momentum profits exist regardless of credit quality of stocks. A portfolio of low credit quality stocks earns more profits than a portfolio of high credit quality stocks.
Method-based profitability	<ul style="list-style-type: none"> ● Al-Khazali et al. (2014) ● Bahloul et al. (2016) ● Mohammad and Ashraf (2015) ● Jawadi et al. (2015) ● Ho et al. (2014) ● Boo et al. (2016) ● Kamil et al. (2014) ● Umar (2015) ● Ashraf and Mohammad (2014) ● Mwamba et al. (2016) ● Rahim and Masih (2016) ● Shamsuddin (2014) ● Nasr et al. (2016) ● Mensi et al. (2016a) ● Dewandaru et al. (2016) ● Mensi et al. (2016b) ● Arouri et al. (2013) ● Minhath and Dzolkarnaini (2017) 	<ul style="list-style-type: none"> ● The empirical evidence from these studies is inconclusive. ● Conventional stocks outperform Islamic stocks in some cases. ● Majority of the evidence points towards a better performance of the Islamic market.
Corporate governance.	<ul style="list-style-type: none"> ● Hayat and Hassan (2016) ● Elnahas et al. (2016) 	<ul style="list-style-type: none"> ● There is no evidence that 'Islamic label' contributes to good governance. ● Religion improves the accuracy of corporate bankruptcy.
Performance persistence	<ul style="list-style-type: none"> ● Abdelsalam et al. (2014) ● Abdelsalam et al. (2015). 	<ul style="list-style-type: none"> ● There is evidence of performance persistence in a large sample of Islamic funds and socially responsible investment funds.

They discover a strong relationship between market share of Islamic banks and financial development including economic welfare. Gheeraert (2014) tests the hypothesis that Islamic finance spurs banking sector development, and using a large bank dataset finds empirical support for his proposed hypothesis.¹³

¹³ There are two papers on Islamic finance which in our reading do not belong to the six areas of research we have identified in this survey. These are Mertzianis (2016) and Pepinsky (2013), both based on survey methods and study, respectively, family ties and access to finance and development/social change.

Table 6
Summary of the ethical issues topic.

Sub-theme	Papers	Findings
Ethical identity of and reporting in Islamic banks	<ul style="list-style-type: none"> • Haniffa and Hudaib (2014) • Belal et al. (2014) 	<ul style="list-style-type: none"> • In the majority of banks, there is evidence of discrepancies, inconsistent with the Islamic ethical business framework. • There is an increase in ethical disclosures over time but full disclosures on certain aspects of business is generally lacking.
Controls for speculative trading	<ul style="list-style-type: none"> • Naughton and Naughton (2000) 	<ul style="list-style-type: none"> • Regulatory authorities in Islamic countries will face these challenges (controls for speculative trading) in attempting to structure a viable trading system.
Effect of ethical screening on performance	<ul style="list-style-type: none"> • Naingolan et al. (2016) • Ashraf (2016) 	<ul style="list-style-type: none"> • Based on testing whether ethical screening affects portfolio performance, the Islamic equity funds underperform conventional funds. • Based on testing whether Shariah screening causes abnormal returns, there is not any statistically significant difference in performance between the Islamic and conventional indices.
Corporate social responsibility	<ul style="list-style-type: none"> • Platonova et al. (2016) • Aribi and Arun (2014) 	<ul style="list-style-type: none"> • There is mixed evidence on the effect of CSR. • Islamic financial institutions fall short of their ethical and social objectives implied by Shariah principles. • A statistically significant positive relationship between CSR disclosure and financial performance of Islamic banks.

Finally, there is a small but growing group of studies on theoretical work on Islamic finance. Bashir (1983) develops a model of portfolio management for Islamic banks. He utilises the model to illustrate how optimal profit sharing ratios and optimal portfolios can be worked out. Ebrahim et al. (2016) develop a model of structural flaws of securitized debt. Azmat et al. (2015a) develop a model to study the dominance of asset side debt contracts in Islamic banks.

2.1.1. What have we learned?

There are four features of the Islamic banking literature that we have some understanding about. First, on bank efficiency, there is mixed evidence with some finding Islamic banks to be efficient than conventional banks while others find not much difference between the two types of banks. Second, generally the relatively smaller Islamic banks tend to be more stable and are able to mitigate risks better. Third, Islamic banks are characterised by better asset quality and are found to be less at risk of failure compared to conventional banks. Fourth, Islamic banks are more inclined toward funding SMEs.

2.2. Asset pricing

Compared to the literature on Islamic banking research, those on asset pricing are limited to eight studies. A sub-set of these studies focuses on predictability of stock returns. Narayan et al. (2016a) compile a new monthly dataset (January 1981 to December 2014) consisting of 2577 stocks. Using econometric tests they discover evidence of both in-sample and out-of-sample predictability: that is, a dozen financial and macroeconomic variables are able to predict Islamic stock returns. The authors utilize this information on predictability to design trading strategies. Their trading strategies show that investing in regional (industry) portfolios offer annualized profits of 6.16% (6.03%). In addition, they show that investing in an emerging market portfolio maximises profits at 9.89% per annum.

Narayan and Bannigidadmath (2015) test the relation between financial news (as reported by newspapers) and Islamic stock market index returns. They show that financial news is a powerful source of information to predict Islamic stock market returns as well as conventional stock market returns. In their analysis, it is the positive news that has a bigger effect on returns on both market types compared to negative news. Most importantly, they utilize a mean-variance investor utility function to show that investors in Islamic stock markets by using the information in financial news are able to make more profits compared to investors in conventional stock markets.

Narayan et al. (2016b) develop a framework to study how price discovery contributes to asset pricing. In this study the authors extend the price discovery methodology to a time-varying one, extract evidence of price discovery over time and utilise this as a predictor of stock returns. Their dataset consists of 21 portfolios made up of 188 Islamic stocks belonging to the Dow Jones Asia-Pacific Index. They find, using a range of econometric tests, that time-varying price discovery predicts Islamic portfolio stock returns. They show that this evidence of statistical predictability translates to mean-variance investor profits of 7.36% per annum.

Merdad et al. (2015) test for an Islamic risk factor in expected stock returns. Using time-series data for 146 Saudi Arabian listed firms they find that the Islamic risk factor captures strong common variation in Saudi stock returns.

Hayat and Kraeusel (2011) study risk-return characteristics of Islamic equity funds using weekly time-series data for 145 equity funds. They show that Islamic equity funds underperform compared to both Islamic and conventional equity benchmarks.

Finally, Białkowska et al. (2012) examine investor sentiment and stock returns during the month of Ramadan. Using daily time-series (1989–2007) data from 14 Islamic countries, they show that stock returns during Ramadan are significantly higher and less volatile than during the rest of the year. Another study on the effect of Ramadan by Białkowski et al. (2013) test whether mutual fund managers investing in Turkish stocks are able to benefit from the Ramadan effect. They find that the performance of domestic

institutional funds, hybrid funds and foreign Turkish equity funds is substantially higher during Ramadan. This study is complemented by [Abalala and Sollis \(2015\)](#) who test for the Saturday effect on the Saudi Arabian stock market. Using time-series daily data they find a positive Saturday effect on stock returns.

2.2.1. What have we learned?

There are two main messages from studies on Islamic stock pricing. The first message pertains to predictability and its economic meaning. We learn that both Islamic stock market index and the constituent stocks are predictable. This predictability comes not only from conventional financial and macroeconomic predictors but also from financial news and price discovery variables. The related message is that investors are able to make use of these information from predictor variables to design profitable trading strategies.

The second message relates to the effect of Ramadan. There is clearly a calendar effect as shown by these studies in that the month of Ramadan tends to exert a positive effect on the performance of Islamic markets including equity funds.

2.3. Islamic bond market

Like the literature on asset pricing, the literature on Islamic bond market is evolving. [Azmat et al. \(2015b\)](#) analyse 1166 Malaysian Islamic bonds over the period 2002 to 2010. Specifically, they study Islamic bond credit ratings and find that Islamic bond characteristics, such as the type of religious advisor, the regulatory changes by the Accounting and Auditing Organization for Islamic Financial Institutions, and the bond issuer's industry all influence bond ratings.¹⁴

[Azmat et al. \(2014b\)](#) study factors that affect an issuer's choice of Islamic bond structure as compared to conventional financial instruments. They fit a multinomial probit model to 456 Malaysian corporate Islamic bond issues over the period 2002 to 2010 using daily data. They discover significant differences between Islamic and conventional bond issuer's choice of determinants which they attribute to Islamic bond specific characteristics.

[Azmat et al. \(2014c\)](#) develop a theoretical model where they aim to understand the Shariah compliance challenge in Islamic bond markets. They document a number of important ideas. (1) Due to higher Islamic instrument cost, the Islamic bond industry's existence is contingent upon a Shariah conscious ethical investor base that can absorb the lower Shariah premium. (2) Competition amongst Shariah advisors along with issuer fatwa shopping results in a non-compliant Islamic financial instrument. (3) The Shariah compliance challenge is dependent on Shariah conscious ethical investors, apart from market incentives and strong regulations.

Finally, [Naifar et al. \(2016\)](#) examine the relationship between Islamic bonds and stock market conditions (returns and volatility) for three Islamic countries using daily time-series data. They find that the Islamic bonds relate significantly to stock market volatility. Moreover, their analysis reveals that Islamic bond yields are more sensitive to global (conventional) stock markets than to Islamic stock markets.

2.3.1. What have we learned?

There are three takeaways from this literature. First, the credit rating of Islamic bonds are dependent on factors such as religious orientation and institutional changes. Second, the existence of the Islamic bond market depends in large part on Shariah conscious ethical investors.

Third, the Islamic bond market seems to be related to the second moment of returns rather than returns. Moreover, the Islamic bond market is more sensitive to global conventional markets than to Islamic markets.

2.4. Market Interactions

The Islamic finance literature on market interactions can be categorized into two streams; namely, studies that examine the co-movement, cointegration and/or spillover and contagion effects in Islamic markets, and studies that examine the relation between Islamic market and other markets including commodity markets.

We first consider studies in the first stream. [Rizvi et al. \(2015\)](#) and [Kenourgios et al. \(2016\)](#) study the co-movement of Islamic and conventional markets and contagion effects (of the global financial crisis and the Eurozone sovereign debt crisis) on Islamic equity and bond markets. Using time-series daily data and a range of Islamic and conventional indices, [Rizvi et al. \(2015\)](#) show that Islamic markets were less vulnerable to the 2007 global financial crisis. Using time-series daily data, [Kenourgios et al. \(2016\)](#) support the findings of [Rizvi et al. \(2015\)](#) in that their main finding is that Islamic equities and bonds may provide a cushion against risk and instability, more so in periods of economic and financial turmoil.¹⁵

Several other studies such as [Alexakis et al. \(2016\)](#), [Alaoui et al. \(2015\)](#), and [Ajmi et al. \(2014\)](#) study either cointegration or co-movement of Islamic markets both amongst Islamic markets and with conventional markets.¹⁶ The overall finding from these studies is that not only do Islamic markets co-move they are also related to their conventional counterparts. This finding is supported by evidence from the stock level data: [Mazouz et al. \(2016\)](#) find that Islamic stocks co-move with the Islamic market index. They find that this co-movement actually increases during the Ramadan period.¹⁷

¹⁴ [Azmat et al. \(2014a\)](#) examine credit risk in joint venture Islamic bonds using 52 Malaysian Islamic bond issuers' data.

¹⁵ [Hammoudeh et al. \(2014\)](#) study the dynamic dependence of the global Islamic equity index with global conventional equity market index. Using daily time-series data, they find evidence of time-varying dependence.

¹⁶ A sectorial analysis of dynamic correlations has also been undertaken by [Yilmaz et al. \(2015\)](#).

¹⁷ [Sensoy \(2016\)](#) studies systematic risk in Islamic and conventional equity markets. Using time-series daily data he finds that systematic risk in conventional

In related studies, [Balçılar et al. \(2015\)](#) design a three-regime risk spillover model to study the risk exposure of ten major Islamic sectoral indices with respect to shocks emanating from the global (conventional) market. Using time-series daily data, they show positive risk exposures of Islamic equity sectors from global market shocks. Using these statistical results, the authors demonstrate, both in in-sample and out-of-sample tests, that portfolio diversification strategies are economically meaningful. Similarly, [Nazlioglu et al. \(2015\)](#) study volatility transmission between Islamic and conventional equity markets, and find evidence of contagion between markets.

The second stream of studies considers the relation between Islamic stocks and the Chinese and other Asian markets ([Majdoub and Sassi, 2016](#)), the relation between Islamic equity markets and commodities ([Nagayev et al., 2016](#)), and the relation between Islamic stocks, gold, and US Treasury ([Mensi et al., 2015](#)). [Majdoub and Sassi \(2016\)](#) using time-series daily data show strong evidence of asymmetric spillover effects from the Chinese market to Asian Islamic stock markets. [Nagayev et al. \(2016\)](#) using time-series daily data on 17 commodities and the Dow Jones Islamic Market Index find a substantial and persistent increase in return correlations between commodities and the Islamic market returns at the onset of the 2008 financial crisis. [Mensi et al. \(2015\)](#) use weekly time-series data to show that investors can diversify risk (or minimise risks) during crisis times by including in their portfolio either gold or Islamic stocks; however, the inclusion of US T-bills does not aid risk diversification.

2.4.1. What have we learned?

There are two important messages emanating from market interaction based studies. The first message is about Islamic markets (including stocks) co-moving with other Islamic markets and conventional markets. This co-movement offers opportunities for risk diversification particularly during times of crises. It has been shown by the literature that Islamic stocks are more resilient to global crises than conventional markets.

The second message relates to the connection between Islamic stock markets and other markets. The evidence tends to suggest that Islamic markets are well connected to commodity markets thereby offering opportunities for portfolio risk diversification.

2.5. Equity performance

The literature on the profitability and performance of Islamic markets has treated the analysis from several perspectives. We will look at each of these perspectives. Consider first studies that have attempted to study profitability of Islamic markets using the popular momentum trading strategy. [Narayan and Phan \(2016\)](#) implement the momentum strategy on a large number of US Islamic and non-Islamic stocks using monthly time-series data from January 1974 to December 2014. They conclude with two key findings. (1) Momentum strategies are profitable for Islamic stocks but profit is dependent on stock characteristics. (2) Profitability of Islamic stocks is merely compensation for risks and not due to mispricing.

[Narayan et al. \(2015\)](#) test whether momentum profits (on Islamic stocks) are dependent on credit quality of stocks. Using a large sample (188 Islamic stocks) of Islamic stocks over the sample period January 1980 to December 2014, they find that while momentum profits exist regardless of credit quality of stocks, a portfolio of low credit quality stocks earns 4.68% more profits than a portfolio of high credit quality stocks.

[Dewandaru et al. \(2015\)](#) using a sample of 488 Islamic stocks over a much shorter sample period (1996 to 2012) also document evidence that Islamic stocks are profitable.¹⁸

Second, there are method-based studies. A number of studies have used different methods to show profitability (or otherwise) of Islamic stocks. [Al-Khazali et al. \(2014\)](#) and [Bahloul et al. \(2016\)](#) use stochastic dominance analysis; [Mohammad and Ashraf \(2015\)](#) and [Jawadi et al. \(2015\)](#) use both parametric and non-parametric tests; [Ho et al. \(2014\)](#), [Boo et al. \(2016\)](#), and [Kamil et al. \(2014\)](#) use various risk-adjusted performance measures; [Umar \(2015\)](#) uses a strategic asset allocation framework; [Ashraf and Mohammad \(2014\)](#) use a logistic smooth transition autoregressive model; [Mwamba et al. \(2016\)](#) use both the block maxima method and the peak-over-threshold method; [Rahim and Masih \(2016\)](#), [Shamsuddin \(2014\)](#), [Nasr et al. \(2016\)](#), and [Mensi et al. \(2016a\)](#) use GARCH type models; [Dewandaru et al. \(2016\)](#) use mean-variance spanning tests; [Mensi et al. \(2016b\)](#) use quantile regression and wavelet approach; [Aroui et al. \(2013\)](#) use vector autoregressive models; and [Minhat and Dzolokarnaini \(2017\)](#) use panel random effects model. The empirical evidence from these studies is inconclusive. Some find that conventional stocks outperform Islamic stocks; however, the majority of the evidence points towards a better performance of the Islamic market.

Third, there are studies related to corporate governance. In an extensive panel data study, consisting of 500 firms over the period 2010 to 2012, [Hayat and Hassan \(2016\)](#) do not find any evidence that 'Islamic label' contributes to good governance. [Elnahas et al. \(2016\)](#) study the relationship between religion and corporate decision making and financial reporting. Using data on 444 US firms they find that religion improves the accuracy of corporate bankruptcy.¹⁹

Fourth, there are studies on performance persistence. [Abdelsalam et al. \(2014\)](#) analyse the performance persistence of Islamic and socially responsible investment mutual funds. Using a large sample of Islamic funds (138 funds) and socially responsible investment funds (636 funds) fitted to monthly time-series data, they find evidence of performance persistence. This evidence is complemented

(footnote continued)

markets is slightly higher than Islamic markets.

¹⁸ [Derigs and Marzban \(2009\)](#) constitute a theoretical study on a proposal for new strategies.

¹⁹ On a completely different aspect of Islamic finance, [Dewandaru et al. \(2014\)](#) investigate factors that impede stock market development in Islamic countries. Using a panel dataset consisting of 11 countries (over 1996–2011), they show that while financial openness is less important, financial intermediary plays a significant role in promoting financial development.

by Abdelsalam et al. (2015).

2.5.1. What have we learned?

The literature on profitability and performance of Islamic equity markets is large and growing. Two specific messages emerge clearly. The first message is that studies using momentum strategies find conclusive evidence that Islamic markets are profitable and beat conventional markets. This is not the case when other methods are used. Other approaches which count in the dozens offer mixed evidence on profitability and performance.

The second message relates to the relevance of Islamic label in general; it seems to matter to predicting bankruptcy but not to the quality of governance.

2.6. Ethical issues in Islamic finance

It is almost natural to think of ethical issues with respect to Islamic finance. It is natural because there are issues of Shariah compliance at stake. Given this, a range of topics have been researched, although at best this area of research is still evolving. There are, for instance, studies that (a) explore the ethical identity of and reporting in Islamic banks (Haniffa and Hudaib, 2014 and Belal et al., 2014), (b) consider controls for speculative trading (Naughton and Naughton, 2000), (c) examine the effect of ethical screening on performance (Nainggolan et al., 2016; Ashraf, 2016), and (d) analyse the corporate social responsibility aspect of Islamic finance (Platonova et al., 2016 and Aribi and Arun, 2014).

More specifically, Haniffa and Hudaib (2014) undertake a survey of seven Islamic banks with the aim of identifying any discrepancies between information disclosed in the annual reports and the disclosure of information consistent with the Islamic ethical business framework (IEBF). In the majority of banks, they find evidence of discrepancies, inconsistent with the IEBF. Belal et al. (2014), by comparison, study ethical reporting in Islamic Bank Bangladesh Limited over a 28-year sample period. While they do discover an increase in ethical disclosures over time, full disclosures on certain aspects of business was lacking.

Naughton and Naughton's work connects with an aspect of financial trading—namely, speculative trading, short—selling and margins trading, which are all prohibited under Islamic finance. In their theoretical analysis, the authors argue that regulatory authorities in Islamic countries will face these challenges in attempting to structure a viable trading system.

The two studies on ethical screening and market performance also reveal interesting insights. Nainggolan et al. (2016) use a panel (consisting of 32 countries over a time period of 1984 to 2010) data framework to study whether ethical screening affects portfolio performance of a large sample of Islamic equity funds (IEFs). They find that the IEFs underperform conventional funds by an average of 40 basis points per month. Ashraf (2016), by comparison, examines whether Shariah screening causes abnormal returns for a sample of 29 Islamic equity indices (IEIs) vis-a-vis conventional indices. The results do not conclude with any statistically significant difference in performance between the two types of indices.

Finally, on the effect of corporate social responsibility, there is mixed evidence. Using survey data from Bahrain, Aribi and Arun (2014) study the response of Islamic financial institutions (IFIs) to the welfare needs of the society. They find that IFIs fall short of their ethical and social objectives implied by Shariah principles. On the other hand, Platonova et al. (2016) use a panel data model (24 Islamic banks with data over the period 2000–2014) and discover a statistically significant positive relationship between CSR disclosure and financial performance of Islamic banks.

2.6.1. What have we learned?

The research on aspects of ethical issues in Islamic finance offers are three important messages. First, there is still strong evidence that ethical issues and CSR objectives are not met by many financial institutions.

Second, there is mixed evidence on the relationship between ethical issues of bank/institutional performance. Overall, these aspects of Islamic finance need more research to arrive at some sort of consensus.

3. General features of the literature

The first feature relates to the distribution of studies on Islamic finance. Fig. 1 reports on this distribution by topic, as covered in Section 2. The topic of research is heavily skewed toward bank performance (44%) followed by equity market performance (24%). The subject of market interactions has attracted around 13% research. The two least popular research areas are bond market and asset pricing.

The second feature of the literature relates to methods used. Since the majority of the studies are empirical (only around 3% of papers are theoretical), the most popular methods are time-series econometric tests followed by panel data methods.

The third feature relates to robustness tests. Of the 112 studies only around 50% of the studies have engaged in robustness tests. The majority of these though engage in robustness tests that can best be deemed to be weak.

The fourth feature relates to dataset. Given the empirical nature of the literature, apart from the findings and implications alluded to in Section 2, a key contribution of this literature has been new datasets. There are studies that have compiled unique, historical time-series data at the stock level. There are also studies which have put together large scale panel datasets of banks and equities covering thousands of stocks for a large number of countries.

Lastly, since the bulk of the research in Islamic finance is applied there has been too much focus on 'econometrics' or statistical analysis. There is limited story-telling by way of trying to understand what these statistics mean and imply. Therefore, an aspect of this literature is lacking the economic significance story.

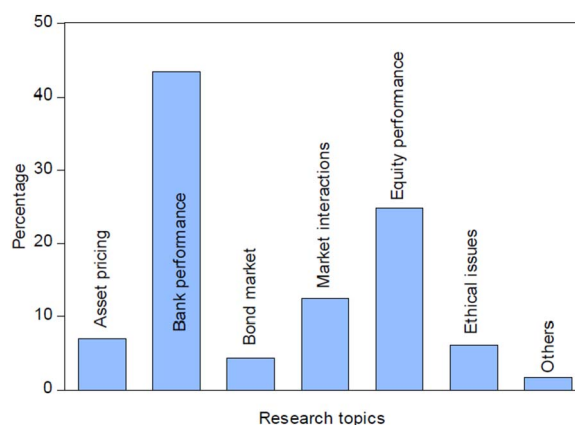


Fig. 1. Distribution of Islamic banking and finance research by topic.

4. Key challenges and directions for future research

There are several challenges for Islamic finance research which actually also pave the way for future research. The first challenge revolves around ensuring that Islamic finance studies stand independent of conventional finance. To understand this succinctly note that the majority of the studies have their starting point of research in a comparative sense—that is, Islamic finance compared to conventional finance. This is not a criticism of the literature. A start had to be made and it has been made. No longer can the Islamic finance profession admit to be seen in a comparative way. By standing independent of conventional finance will allow research in Islamic finance to carve an identity and make contributions to mainstream finance in a way conventional finance makes. This is not to say that comparative studies should be ignored; rather, this should not be made a habit. This to us is a key challenge for future research.

The second challenge, which we believe will aid in overcoming the first challenge, relates to data quality and data uniqueness. Data quality and uniqueness are complementary and it should be treated accordingly. A unique dataset which has a quality tag will ensure Islamic finance-specific research questions to be addressed in the best possible ways thus opening up implications for research in conventional finance. Some studies, as alluded to in Section 2, have already made a start on compiling new datasets to aid unique Islamic finance related research questions. The challenge will be to make serious progress on this front.

The third challenge will be to embrace the relatively less researched topics in Islamic finance. It is surprising that there is a very small proportion of studies on asset pricing which is a traditional branch of research in mainstream finance. Given that Islamic finance product is different, the pricing aspect of these products needs greater research. It is clear that as new datasets become available, not only in asset pricing but also on bond markets, there will be greater research on these subjects. In addition, there is a need for more theoretical work on Islamic finance. The current status, as this survey brings forward, is a literature which is very much applied.

The fourth challenge has roots in the lack of research on corporate finance related topics in Islamic finance. There is much to gain from such research. There is for instance no knowledge on the determinants of capital structure, on the speed of adjustment to leverage, and on what determines leverage. These aspects of research will add more insights to what we already know from research on conventional corporate finance research.

The fifth challenge has to do with developing the link between statistical analysis and economic significance. As highlighted in Section 2, the bulk of the existing research is heavily focused on the econometric or statistical analysis and the question of ‘so what?’ lingers in many cases. The statistics is fine and is needed, but drawing the economic meaning from these statistics is equally important. The challenge for future research in Islamic finance is to build the bridge between statistics on the one hand and the economic significance of it on the other hand.

Lastly, we believe that establishing the robustness of the empirical findings will also be a challenge. It is true that some attempt has been made by the existing literature to test the robustness of the findings but more concrete work needs to be done in this respect. This is the challenge for future research. We predict that the trend towards applied/empirical research will continue, making it that much more important to design robustness tests that help deliver the main conclusions and implications with limited doubt.

5. Concluding remarks

This survey paper is a response to a significant growth in research on Islamic banking and finance published in well-respected journals. Five years ago there was hardly any literature. Today, we count a total of 112 papers published in respected journals. This calls for a need to understand what research has taken place, what we understand from this research, what challenges lie ahead and, as a result, what can potentially constitute future research. This survey article covers all these issues.

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