



Cost efficiency and board composition under different takaful insurance business models[☆]



Hala Abdul Kader^a, Mike Adams^{b,*}, Philip Hardwick^c, W. Jean Kwon^d

^a Price Waterhouse Coopers London, UK

^b School of Management, University of Bath, Claverton Down, Bath, UK

^c Executive Business Centre, Bournemouth University, UK

^d School of Risk Management, St. John's University, New York City, USA

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ABSTRACT

This study examines the link between cost efficiency and board composition in non-life takaful insurance firms operating in 17 Islamic countries using panel data for 2004–2007. Nonparametric data envelopment analysis (DEA) is used to compute cost efficiency scores and a second-stage logit transformation regression model is then employed to test the influence of corporate characteristics on these efficiencies. We find that average levels of cost efficiency in takaful insurance markets mirror the efficiency in developed non-life insurance markets. The relative influence of board composition, such as the proportion of non-executive directors on the board, on the cost efficiency of takaful insurers depends on its interaction with other firm-specific characteristics such as board size. Hence, the effect of corporate governance systems on the cost efficiency of takaful insurers can be complicated by various firm-specific factors. Our results could have important commercial and policy implications.

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1. Introduction

This paper investigates cost efficiency and the extent to which it is affected by corporate governance in the takaful (mutual guarantee) insurance market operating in compliance with Islamic principles and in which risks are shared by the members participating in each takaful risk pool (Khorshid, 2004). Rediker and Seth (1995) report that firm-specific cost efficiencies depend in part on how effective the system of corporate governance is in controlling and resolving incentive conflicts between owners (principals) and managers (agents). A sound system of governance could also help takaful insurers realize operational efficiencies and enhance economic performance by improving systems of resource allocation and product design and strategic innovation, such as business restructuring initiatives (Thompson & Wright, 1995). Wang et al. (2007) and Huang, Lai, McNamara, and Wang (2011) report that the link between corporate governance and economic efficiency is important for the management of, among other things, insurance companies' asset–liability structure, claims handling, and ownership structure. We observe that investigating the corporate governance–cost efficiency relation in the takaful insurance market is particularly

important because directors' fiduciary responsibilities in this market not only extend to shareholders and policyholders, but they are also subject to oversight by the Shariah supervisory board of the company and the government agency in charge of industry regulation. This unique structure of the takaful insurance market thus warrants examination.

In this study we investigate the macroeconomic environments surrounding takaful markets and their impact on takaful insurers' cost efficiency using two economic variables (i.e., inflation and rates of interest). We also examine relative efficiency differences between insurers based on the type of takaful business model, namely, the *mudaraba*, *wakala* and *hybrid* models. In addition, we control for the potential cost efficiency impact of the Shariah supervisory board on decisions taken at the corporate board level. We believe that the findings of this study could offer all stakeholders – policyholders, insurers, Islamic scholars and government officials alike – a better guideline to further develop the takaful insurance industry. These contributions represent potentially important advances on recent exploratory studies of takaful insurance markets such as Marie, Rao, and Kashani (2009) and Abdul Kader, Adams, and Hardwick (2010). For example, in the present study we examine whether the cost efficiency–corporate governance relation is affected by input-side macroeconomic influences such as inflation and the effects of interest rates. Additionally, the governance effects on cost efficiency arising from the type of takaful model employed and the operation of the Shariah board are also investigated in this study. Incorporating such factors into our analysis contributes new and potentially important insights on the cost efficiency–

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* Corresponding author.

E-mail addresses: hala_abdulkader@hotmail.com (H.A. Kader), m.b.adams@bath.ac.uk (M. Adams), phardwick@bournemouth.ac.uk (P. Hardwick), kwon@stjohns.edu (W.J. Kwon).

governance relation in takaful insurers. We believe that this contribution helps improve our understanding not only of the underlying business economics of takaful insurance – an important emergent sector of the international insurance industry, but also of the function of Islamic corporate finance more generally.

Takaful insurance is a cooperative type of insurance in which the insurer helps policyholders to provide loss protection services for each other. This arrangement is in some ways similar to the mutual-type insurance business in the conventional market. This structure, on top of the Islamic principle governing the operational scope, limits takaful insurers' ability to generate additional capital and to invest policyholders' and shareholders' funds. Indeed, *Abouzaid (2007)* and *Swiss Re (2008)* argue that takaful insurance markets need more liquid and diversified investment choices to attract capital investors. In view of these constraints, optimizing operational cost efficiency is likely to be an important business objective for takaful insurers, particularly given the dampening of consumer demand in the wake of the recent global financial crisis (*Ernst & Young, 2009*). What is more, the takaful insurance industry is relatively young and not all jurisdictions in which the insurers operate have fully introduced laws and regulations related to takaful insurance operations and corporate governance (*Islam, 2003*). At the same time, a number of jurisdictions (e.g., Indonesia, Jordan, Malaysia and Saudi Arabia) permit competition between takaful and conventional insurance companies. To stay competitive, takaful insurers need to focus more on operating cost minimization than on profit maximization.

We also focus on economic rather than accounting-based measures of insurers' performance in this study (*Marie et al., 2009*). Accounting-based performance ratio measures are deficient for this study because they combine both input and output efficiencies, thus likely distorting the measurement and analysis of efficiency performance (*Pi & Timme, 1993*). Variations in the accounting and actuarial practices used by insurance companies can also complicate comparisons of reported financial performance (*Klumpes, 2005*). Focusing on economic measures of takaful insurer performance thus helps us avoid potentially confounding effects emanating from differences, say, in companies' treatment of accounting items and their reporting of annual earnings. Furthermore, a significant number of takaful insurers are not listed thereby precluding the use of share price-based measures as indicators of financial performance (*Abdul Kader et al., 2010*). Thus, we attempt in this paper to investigate the relation between cost efficiency and corporate governance and other firm-specific factors in takaful insurance markets globally.

The remainder of our paper is structured as follows. *Section 2* describes the key features of takaful insurance. *Section 3* provides the literature review related to corporate governance and takaful insurance cost efficiency. *Section 4* defines cost efficiency and discusses the methodology and data for the first-stage DEA analysis and the second-stage regression analysis. *Section 5* analyzes the results and *Section 6* concludes the study.

2. Takaful insurance – operations

Interest in insurance markets and the products designed in compliance with Islamic law (Shariah) continues to rise around the world. Takaful insurance is growing rapidly in numerous Islamic states and Muslim populous countries in the Middle East and North Africa. Several countries in other regions, notably Malaysia and Indonesia, also promote takaful insurance operations (*Kwon, 2007*). *Swiss Re (2008)* reports that in 2007 Muslim countries generated about 11% (US \$45 billion) of global insurance premiums written. The takaful insurance market share was roughly 4% (US\$1.7 billion) in those countries. Despite being small in size in global terms, the takaful insurance market continues to grow at a fast annual rate. For example, *Swiss Re (2008)* note that its growth rate (25%, after adjustment for inflation) was much higher than that of the conventional market (10.2%) during the

four years 2004–2007. *Ernst and Young (2009)* also reports that global takaful premiums are projected to reach US\$8 billion in 2012.¹ It is estimated that there are between 100 and 150 takaful insurance companies of varying size and complexity operating in nearly 30 countries including a handful of licensed operations in Europe.²

As alluded to above, takaful insurers combine elements of the conventional mutual form (e.g., by assigning primacy to the financial claims of policyholders) and the equity-capitalized and profit-orientated stock company structure (*Swiss Re, 2008*). Takaful insurance operations share several unique characteristics. First, the takaful insurer must separate the policyholders' (*takaful*) fund from the shareholders' fund. This separation permits the insurer to draw money from the former fund to support its insurance operations, while leaving the latter fund intact unless it experiences underwriting losses. When policyholders and shareholders share operating profits after closure of the book, the arrangement is based on the common *mudharabah* model (see *Fig. 1*).

As *Fig. 1* makes clear, the *mudharabah* (“profit-sharing”) model allows the capital provider (e.g., shareholder) to determine ex-ante the profit-sharing ratio with the capital user (e.g., insurance pool) but bear the full risk of underwriting and investment losses. A key advantage of the *mudharabah* model is that ostensibly the managers of takaful insurance firms have incentives to engage in efficient operational activities in order to maximize returns for capital providers. The *mudharabah* model has traditionally been common in East Asian countries such as Brunei and Malaysia (*Swiss Re, 2008*).

When a takaful insurer is permitted to deduct a fee upon receipt of the premium, the arrangement is based on the *wakalah* model (see *Fig. 2*). In this case, the shareholders may be entitled to a discretionary return on the annual surplus arising from insurance operations in addition to their *wakalah* (“fee”) for contributing capital to support the insurance operations (*Kassim, 2007*).

In both types of arrangements, insurance premiums are in essence treated as *tabarru* (“donations”) to policyholders' (takaful) funds. Additionally, any surplus – less reserves for future claims and other qualified contingencies – on the takaful fund must be returned to policyholders as an annual policy refund or paid out as a *zakat* (“charitable contribution”). In both types of arrangements, takaful insurers – that is, the shareholder investors – must be ready to provide a *qard al-hasanah* (“interest-free loan”) for the takaful fund when the fund experiences deficit or, where applicable, fail to meet the minimum requirement to maintain solvency margin (*Swiss Re, 2008*). The loan is repayable from future annual surpluses. Variant funding arrangements also exist in the financing of takaful insurance operations.³ Finally, hybrid (i.e., joint *mudharabah* and *wakalah*) models are becoming increasingly common in takaful insurance markets with the principles of the profit-sharing-based *mudharabah* model being applied to investment activities with the *wakalah* model being used for underwriting (*Thompson & Flower, 2007*).

Regardless the financing arrangement structure, takaful operations must be Shariah compliant. The insurer must avoid having any *haram* (“forbidden”) elements in insurance contracts that are incompatible with Islamic principles – for example, *jahalah* (“ambiguity or uncertainty”) or *riba* (“charging interest”). As such, fully Islamic finance allows shareholders to participate in the surplus arising from the use of contributed insurance capital on a profit-sharing basis that has been agreed ex-ante with policyholders (*Kwon, 2007*). The sharing percentages (%)

¹ See also *Abouzaid (2007)*, *Bhatty (2007)* and *Kwon (2007)* for a detailed analysis of takaful insurance operations by region and globally.

² For example, in 2007 the United Kingdom's (UK) insurance industry regulatory – the Financial Services Authority (FSA) – approved a license for the first takaful insurer – Salaam Insurance – to operate in the country. However, to date business has been slow to develop for this UK-based takaful insurance firm.

³ For example, the *musharaka* mode of financing allows a capital user (e.g., insurance pool) to enter into agreement with a secondary capital supplier (e.g., reinsurer) but then share profits and losses in proportion to their respective capital contributions. Takaful reinsurance tends to suit this mode of operation (*Abouzaid, 2007*).

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