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The role of the stock market in the provision of Islamic development finance: Evidence from Sudan

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ABSTRACT

This paper assesses the impact of stock exchange funding in the Shari'ya compliant Islamic economy of Sudan. Evidence suggests that while Islamic financial instruments have considerable potential in facilitating development finance through their emphasis on partnership this is better achieved by the banking system rather than the Khartoum Stock Exchange. A case study of the Sudan Telecommunications company shows that larger firms able to cross-list elsewhere are likely to choose regional markets in preference to their domestic one thus benefiting from lower costs of equity. However, governance preferences are likely to favour block shareholders following the Islamic finance partnership concept.

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1. Introduction

Islamic finance is one of the fastest growing sectors of the global banking industry and has risen to prominence recently through its distinctive adherence to the concept of partnership embodied within its profit–loss–sharing (PLS) paradigm. While many well known international institutions such as HSBC, Citigroup and Societe Generale have recently established shari'ya compliant banking arms there has been a considerable proliferation of Islamic Equity Funds (IEFs) between major financial centres such as London and New York as well as in Malaysia and the Arabian Gulf markets of Bahrain and Dubai (Fayyad and Daly, 2011; Hayat and Kraeussi, 2011). In contrast Islamic development banks have a longer history with the first institutions being established in Kuwait and Egypt during the 1960's and 1970's while the Islamic Development Bank was created in 1975 (Rowey et al., 2006). This paper considers the impact of the stock

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exchange as opposed to banking sector in the provision of cost effective Islamic development finance. Furthermore it considers the implications arising from full shari'ya compliance in terms of market segmentation and the cost of equity experienced by listed firms. As such we extend the literature which is largely based on the normative prescriptions of Islamic finance as a discipline (see [El-Din and El-Din \(2002\)](#) and [Naughton and Naughton \(2000\)](#) for an extended discussion) in considering the practical implications on listed firms arising from full shari'ya compliance with a case study on the Sudan Telecommunications company (Sudatel) that has been able to list on regional exchanges away from its home market.

In particular we find evidence that full shari'ya compliance leads to higher costs of equity experienced by listed firms that can be mitigated through cross-listing. Furthermore we highlight that the significant relationship orientated nature of Islamic finance infers that the often well developed banking sector in many developing countries is better placed to administer shari'ya compliant financial products alongside microcredit institutions as opposed to stock market institutions.

The paper is structured as follows. [Section 2](#) presents the theoretical aspects of Islamic economics and finance as a sub-discipline before introducing the principle factors governing regulation and product design in this context. [Section 3](#) reviews the prominent Middle East and North African (MENA) regional stock exchanges and the institutions defining the Khartoum Stock Market (KSE). [Section 4](#) studies the role of the KSE in the financing strategy of the Sudan Telecommunications company, an example of a prominent multinational enterprise in a developing Islamic economy. [Section 5](#) concludes and suggests policy implications.

2. Theoretical background to Islamic financial markets

The relatively recent emergence of Islamic economic institutions in the MENA region is largely due to the reassertion of Islamic values following the post-colonial period during which Western and Marxist principles dominated ([Kuran, 1995](#)) as countries aligned themselves to the capitalist or socialist orders of the Cold War ([Chapra, 1993](#)).

Islam represents a system of beliefs based on the interpretation of passages from the Qu'ran and various Had'ith and Sunnah, which are short texts concerning customs of the Muslim community and relating experiences of the prophet Mohammed ([Pryor, 2007](#)). These form the basis of Shari'ya law, which permeates all areas of the wider Islamic system, including economics, finance, law, politics and government as integral component parts, and which have common values of Islamic social justice ([Asutey, 2007](#)). However, as [Pryor \(2007\)](#) notes, Muslim policy makers are faced with considerable dilemmas over omissions from canonical texts, as well as differing translations and contradictory interpretation of these doctrinal sources by the various schools of Muslim jurisprudence ([Pryor, 2007](#); [El-Din and El-Din, 2002](#)).

But while the political economy aspects of the Islamic system encompasses all component of a social system the central belief of Islamic economics is that individuals are merely the trustees of wealth and capital owned by God ([Asutey, 2007](#); [Chapra, 1993](#)). As Islamic economics is only one part of the wider system where individuals have common values and adhere to Shari'ya principles the ethical behavioural norms of Islam are fully integrated with economic motives. Thus, ethical actions of the individual within this system are not voluntary but rather defined as part of the revealed knowledge derived from the teachings of the Qu'ran. Shari'ya law is thus the binding set of principles that govern the economic, social, ethical and religious aspects of Islamic society ([Iqbal, 1997](#)). Therefore, the Islamic order can be viewed as providing “the economic system with its basis and objectives on one hand, and with its axioms and principles on the other” ([Kahf, 2003](#)). Consequently the normative prescriptions of Islamic economics are operationalised through axioms, or fundamental principles, which provide a basis for rationalising and verifying knowledge ([Asutey, 2007](#)).

2.1. Islamic finance

The Islamic financial system is founded and regulated on the same Shari'ya principles as the overall economy and society ([Iqbal, 1997](#)). These dictate the nature of contracts traded and the design of institutions to support the market and regulation of participants' behaviour. Individuals within an Islamic financial system will be subject to behavioural norms, which give rise to very different assumptions to

those that form the basis of regulation in western markets. This section reviews the optimal regulation of the Islamic stock exchange and describes the most commonly used products.

2.1.1. *Islamic regulation*

The literature concerning Islamic regulation is largely normative and prescriptive (El-Din and El-Din, 2002; Metwally, 1984). This is largely a symptom of the lack of practical application given there are only a handful of fully shari'ya compliant financial systems worldwide (Pryor, 2007). Pakistan, Iran and Sudan are the only countries with fully compliant banking systems while only Iran and Sudan have fully compliant stock markets (Pryor, 2007). Organised security markets are largely required for risk diversification and to facilitate the redistribution of wealth and investment from investors to development projects (Metwally, 1984).

The products traded on an Islamic stock exchange must conform to the concept of partnership where business risks are borne equally by all partners. Because of the prohibition of interest (*riba*) the Islamic stock market can be defined as a share market with transactions undertaken solely in ownership contracts (Naughton and Naughton, 2000). However, there is a considerable contrast between the nature of the share markets in western and Islamic economic systems. Firstly the Islamic financial market has a number of distinct products that are based on the principles of partnership between entrepreneur and provider of capital and these will be described in greater detail in the following section. Secondly the common share, or equity, differs between Western and Islamic definitions in principal due to the way the contract addresses asymmetric information between the capital issuer and provider. The Islamic system views the equity contract, that is ordinary shares with voting rights, as a form of *Mudarabah*, where a contract is initiated between at least two partners with one providing all the capital and the other the management of the business. However, where in the Western system the risk of asymmetric information is mitigated by extensive legal contracting between parties in an Islamic adherence to Islamic social values is reinforced by shari'ya compliance. Thus, the prohibition of speculation (*gharrar*) and any form of gambling (*qimar*), including the manipulation of share prices for personal gain, together with the practices acting to informationally disadvantage any party (*jahalalah*) is part of the shari'ya code regulating markets. These practices reflected common shared Islamic ethical values (Mannan, 1993; Naughton and Naughton, 2000).

The normative prescriptions placed on the institutional design result in the Islamic stock market being very different from that in the west. For example, the prohibition of practices such as selective information disclosure (*jahalalah*) and speculation or gambling has considerable inference both on the institutional design of the stock market and the rules on disclosure, accounting and auditing, which in turn affect the informational content of prices (Naughton and Naughton, 2000). The western rules on disclosure of information and ownership, which act to disadvantage some investors to the benefit of others (*jahalalah*) is not allowed and disclosure in Islamic markets leads to strong-form efficiency (Fama, 1970) where share prices reflect all available information in both public and private domains (El-Din and El-Din, 2002; Naughton and Naughton, 2000). While this serves to outlaw practices such as insider trading between “informed” and “uninformed” investors (Rock, 1986) its effectiveness in practice is controversial (El-Din and El-Din, 2002). The concept of strong form efficiency in practice is not supported by the literature as firms often seek to retain at least some confidential information regarding their operations¹. Furthermore, the listings on many markets, especially in developing countries, are made up largely of smaller firms. These would face considerable difficulty in meeting the fixed costs associated with frequent information disclosure requirements and cause the stock market to be a less attractive venue for raising finance compared to the banking system. Although El-Din (1996) proposes government assistance for smaller companies in meeting financial obligations arising from costly information disclosures this is questionable as markets would then only operate under a system of state subsidies and not be independent.

Another fundamental difference is the institutional concepts of information and allocative efficiency. The western model seeks to use the presence of arbitrage traders, who profit from price differences between the same security traded in different locations thereby acting to close pricing and information gaps in the market. Financial markets arbitrageurs often use short sales, that is borrow stock in order to execute a trading strategy and make a profit. Often their actions are speculative and used to exploit

¹ Onour (2002) found little evidence of weak, semi-strong, or strong-form efficiency using Khartoum Stock Exchange data.

differences in price, thus increasing information efficiencies and reducing overall transactions costs. However, in an Islamic market short-selling is considered to be unacceptable (Naughton and Naughton, 2000) as is gambling and speculation (El-Din and El-Din, 2002). As the securities traded represent partnerships that imply an equal burden of risk and reward on both capital issuers and investors, the notions of information disclosure and efficiency must be considered in the context of a close cooperation by both parties. Concerns regarding asymmetric information are thus mitigated through the common adherence to Shari'ya principles of all parties and therefore regulation relating to information disclosure the concept of information efficiency occurs by the prescriptive behavioural norms in shari'ya compliance.

Islamic financial systems commonly follow the self-regulatory model, particularly in Islamic banking systems (El-Din and El-Din, 2002). While El-Din and El-Din (2002) extend the validity of the self-regulatory model to Islamic stock markets there is also evidence of such a practice in Sudan (KSE annual report, 2004). Thus, in Khartoum, a commercially trained and independent shari'ya council acts alongside the stock exchange in advising on acceptable financial instruments and activities on the exchange and also endorse regulations (KSE annual report, 2004).

2.1.2. *Islamic financial products*

A critical feature of the Islamic financial system is that the proliferation of financial products and legal definitions of the firm, or partnership, are subject to validation by the various schools of Islamic jurisprudence (Mannan, 1993). While these are generally in agreement over common products such as *mudarabah*, *musharaka*, *murabaha* and *ijara*, as well as the less common *mugawla* and *salam*, there is considerable consternation over more recently developed products that bear a strong resemblance to western debt instruments. The prohibition of interest (*riba*), which is the major distinguishing features of Islamic finance, is controversial because of differing interpretations by the various schools of Islamic jurisprudence of the translation from the Qu'ran of the definition of usury (Noorzoy, 1982). Kuran (1995) also notes that the original prohibition of *riba* was due to the ancient "pre-Islamic Arabian practice of doubling the debt of a borrower unable to make restitution on schedule, including both the principal and accumulated interest". As this tended to push defaulters into enslavement it was the source of real tension and its ban was effectively a form of bankruptcy protection, reflecting the concept of social justice in Islam (Kuran, 1995). However, despite the ban on *riba*, or any products offering a fixed schedule of repayments, few countries have been able to prevent the use of debt-based instruments entirely (Pryor, 2007) because of the global nature of international financial (Aggarwal and Yousef, 2000) and the dominance of western financial principles in that system (Asad, 2008).

Central to Islamic financial product design is partnership and risk-sharing, which is commonly referred to as the profit-and-loss-sharing (PLS) paradigm (Aggarwal and Yousef, 2000; Presley and Sessions, 1994). The exact division of responsibilities, and the levels of risk and reward allocated to each partner, are defined in the contract. This contract is enforced by the common ethical standards and social values within the Shari'ya system, which ensures mutual compliance by all parties in the transaction.

The *Mudarabah* contract is a partnership between the entrepreneur (*mudarib*) and at least one investor (*rabb al-mal*) (Aggarwal and Yousef, 2000) where the latter provides the sole source of capital. This is considered by many schools of Islamic jurisprudence to be the equivalent of common equity in western financial markets (Mannan, 1993). However, the difference arises because the *Mudarabah* contract implies a closer partnership than the more distant legally defined link between principal (investor) and agent (manager) in western finance. In the event of a loss associated with a *Mudarabah* contract, the investor earns no return and equally the entrepreneur receives no compensation for effort. If the project is successful then the gains are split between the parties according to the pre-transaction negotiated conditions of the contract. This is closer to limited liability partnerships common to western markets than a share instrument and has the further distinction of being restricted or unrestricted depending on the nature of pre-agreed restrictions on the use of funds by the entrepreneur (Aggarwal and Yousef, 2000). One consequence of the emphasis on partnership and risk sharing in *Mudarabah* contracts and Islamic commercial jurisprudence is that the modern Middle Eastern business environment is dominated by small and family-owned firms while larger companies are either foreign Multinational Enterprises (MNEs), foreign joint ventures, or privatised state owned enterprises (Kuran, 2004). However, Badr El-Din (2003) notes there is a general perception in Sudan that *Mudarabah* contracts are risky and consequently there is some reluctance to enter this type of partnership unless there is considerable confidence and existing trust

between potential partners. This suggests that larger block shareholders dominate the Sudanese share market in order to mitigate concerns over contract risk.

In contrast, the musharaka contract involves a partnership where both partners, that is, entrepreneur and investor jointly provide the capital and manage the venture (Aggarwal and Yousef, 2000). Losses are in proportion to the individual capital contributions of the two parties while profits are negotiated freely (Aggarwal and Yousef, 2000). These contracts are more akin to a traditional equity stake with rights of control (Aggarwal and Yousef, 2000) and have been proposed as the optimal contract in developing the fledgling Islamic venture capital and private equity markets where a degree of capital provision together with some influence and control over incumbent management is necessary (Al-Suwailem, 1998; Khan and BenDjilali, 2003). Government shihama certificates, a variant of the musharaka contract, were introduced by the Bank of Sudan in 2001 through KSE auctions as a source of short term financing (KSE Annual report, 2004).

An additional contract, Murabaha, involves the resale of working capital or means of production after adding a specified profit margin, for which the minimum margin is determined by the central bank (Badr El-Din, 2003). Commonly, the entrepreneur makes an application to the bank or investment partner to finance the purchase of raw materials for production. Invoices for the materials accompany the application and the bank then buys the materials before reselling them back to the entrepreneur at their purchase price plus an agreed margin that includes administrative costs incurred and a profit margin for the bank (Badr El-Din, 2003). The more complicated structure of these instruments and the greater need for more active involvement of the investor means that these are better administered by banks than stock markets. This explains their dominance in the provision of microcredit by the banking sector rather than the stock exchange (Badr El-Din, 2003). The shari'ya compliant Islamic financial system does confer considerable benefits in the financing of smaller scale industry by these principles of social justice. This also acts as a protection against bankruptcy, which is important in smaller, riskier ventures, and suggests an emphasis on development by partnership rather than imposing the need for collateral and creditworthiness that is common in western financial systems. However, the major constraints to this type of financing are the selection of an appropriate guarantee for murabaha that is suitable for small, often poorly capitalised, entrepreneurs and the costs of surveillance and monitoring of projects following funding (Badr El-Din, 2003). These extremely high monitoring costs have caused all the major banks in Sudan to locate branches in industrially developed areas (Badr El-Din, 2003), which has caused development to be highly regionally concentrated.

Ijara, or lease, finance has undergone considerable recent growth and development. This is arranged by the banking sector and is a partnership where the bank as the investor buys and then leases out equipment required by the entrepreneur for a pre-agreed rent. The equipment remains an asset of the bank, which will recover both the capital cost plus a profit margin paid by entrepreneur (Rowey et al., 2006). Ijara contracts are typically used in the financing arrangements of large firms for high value industrial equipment such as aircraft, as with Sudan Airways and Emirates Airlines (Al Zawya, 2009). However, ijara contracts are similar to hire-purchase agreements in western markets and there are concerns over the fixed schedule of payments that suggest debt-type instrument, which are obviously prohibited (Aggarwal and Yousef, 2000).

Two less common contracts are Mugawla and Salam. These are commonly negotiated through the banking system. Mugawla financing involves a contract between the party undertaking a work-related function and the provider of capital or materials for the project. The price of the work under contract and the terms of payment must be specified at the outset, and payment may be made in advance, after completing the work, or in instalments as the work progresses. Salam financing is common in the agricultural sector where a contract is made between the supplier of inputs and the financial institution acting on behalf of the ultimate buyer. The key objective of this contract is to fix a price for the delivery of goods at a fixed future date (Mannan, 1993).

2.2. Implications for corporate governance

The differences in the institutional structure and products traded in the shari'ya compliant Islamic financial system and that in the west extend to the managerial governance of firms. Relationships between entrepreneurs (agents) and investors (principals) are heavily influenced by the concepts of

partnership and mutual risk sharing in the Islamic system and the agency problems raised in the west are not overtly discussed. Rather, in an Islamic context the concept of corporate stewardship is through *amana* (trust) and *umma* (solidarity amongst Muslims), which reflects shared values that consequently, corporate culture in an Islamic organisation should be one in which Islamic values are reflected in all facets of group and individual behaviour and thus a collective morality is established to reinforce behavioural norms that define the approach to corporate governance and stewardship prescriptions. There is some empirical evidence (see [Presley and Sessions \(1994\)](#)) of improved surveillance, monitoring and compensation arising from the use of *mudrabah* contracts compared to western debt-based financing. However, the longer term partnership nature of *mudrabah* contracts supports the presence of large block-shareholders as opposed to smaller shareholders who are likely to be more interest in short-term gains rather than longer term, lower-return yet socially beneficial projects ([Mannan, 1993](#)). This further differentiates the incentive compatibility and organisational efficiency in the Islamic partnership system compared to the western system where short-term, profit-maximising shareholders exert pressure on managers. Consequently, corporate governance in an Islamic context favours a two tier board structure comprised of major block shareholders acting in a supervisory context over incumbent managers in order to alleviate agency costs.

3. Contrast between banking sector and stock markets

3.1. The Khartoum Stock Exchange (KSE)

The Khartoum Stock Exchange (KSE) was established in 1994 with technical assistance provided by the Common Market for Eastern and Southern Africa (CoMESA).² It is small in size and generally lacking significant activity in line with many of the smaller MENA markets as can be seen from [Table 1](#) (see [Jahan-Parvar and Waters \(2010\)](#) for a detailed discussion of MENA region markets). However in contrast to the majority of MENA market institutions that were shaped largely by those inherited from former colonial metropolises the market is fully Islamic shari'ya compliant with regulation following the self-regulatory model administered by both the central bank, Bank of Sudan, and the Shari'ya council ([KSE website, 2007](#)). The latter acts to ensure the shari'ya compliant nature of transactions on the exchange and that institutions and participants act in full compliance with prevailing shari'ya compliant legislation. Trading is conducted manually by continuous auction from Saturday to Thursday for one hour from 10:00 am to 11:00 am with buy and sell orders relayed to floor-based representatives of registered brokers. The over-the-counter (OTC) market trades outside exchange trading hours and between licenced brokerage companies and is largely dominated by the complex transactions involved in winding up *Mudrabah* partnerships. The partnership nature of these contracts infers considerable legal and regulatory work involved when one “partner” desires to exit the partnership which is markedly different from the sale of a Western equity contract.

The evidence from [Table 2](#) reveals that there has been considerable growth in listings from the initial 34 in 1995 to 51 in 2006. The growth in listings is mirrored both in terms of growth in primary market listed value as well as increases in rights and bonus issues of shares indicating that the KSE³ does retain some influence in domestic Sudanese business financing. Furthermore two jumps in activity and capitalization levels are clearly visible with the first in 1999 following the establishment of a parallel market with watered down regulatory and disclosure requirements and in 2003/4 following the recent introduction of government *shihama* (a form of *musharaka*) certificates ([KSE Annual Report, 2004](#)). This latter event has been attributed to raising the domestic profile of the exchange and investor awareness ([KSE Annual Report,](#)

² Member states are: Burundi, Comoros, Democratic Republic of Congo, Djibouti, Egypt, Eritrea, Ethiopia, Kenya, Libya, Madagascar, Malawi, Mauritius, Rwanda, Seychelles, Sudan, Swaziland, Uganda, Zambia and Zimbabwe.

³ The KSE has attracted a significant number of licenced brokers although these are localised in the Khartoum area owing to regulation thereby limiting access to a wider domestic investor base. The industry is severely undercapitalised with one broker, the Financial Investment Bank, alone accounting for over 85% of industry capitalization. This entity itself was established by government to facilitate the 1997 privatisation and listing of the Sudan Telecommunications Company (Sudatel) as the existing brokerage community was poorly placed to enable overseas investor participation in the market nor enable the effective cross listing of stock between KSE and other regional MENA markets ([KSE website, 2007](#)).

Table 1
Trading statistics on selected Middle East and North Africa stock exchanges—2005.

Market	Established	Market capitalisation (current US\$ million)	Market capitalisation as % of GDP	Stocks traded, turnover ratio (%)
<i>Panel 1: Individual country statistics</i>				
Saudi stock market	2002	157,306.44	73.35	10.08
Kuwait stock exchange	1962	59,528.01	142.58	10.55
Abu Dhabi securities market	2000	30,362.51	37.85	0.46
Egypt (Alexandria/Cairo)	1888/1903	27,847.48	39.26	1.81
Doha securities market	1997	26,702.11	130.73	1.36
Dubai financial market	2000	14,284.23	17.81	1.95
Bourse de Casablanca	1929	13,050.18	29.48	4.31
Amman stock exchange	1999	10,962.98	110.19	3.55
Bahrain stock exchange	1989	9701.77	100.99	0.27
Muscat securities market	1988	7246.23	33.56	1.49
*Khartoum Stock Exchange	1995	3241.64	12.01	0.75
Iraq stock exchange	2004	2686.94	3.06	0.48
Bourse de Tunis	1969	2439.55	9.07	1.03
Algeria stock exchange	2003	143.64	0.22	0.01
Beirut stock exchange	1920	0.99	0.01	0.60
<i>Panel 2: Regional statistics</i>				
Middle East and North Africa	100.00%	363,009.62		
Gulf Region (incl. Saudi Arabia)	84.06%	305,131.30		
Saudi Arabia	43.33%	157,306.44		
North Africa (Algeria, Egypt, Morocco, Tunisia)	11.98%	43,481.24		
Khartoum Stock Exchange	0.89%	3241.64		

Source: Compiled by authors from national stock exchange websites and Arab Monetary Fund.

Notes (1) The Khartoum Stock Exchange is highlighted with an asterisk.

(2) Data on Iraq is collected direct from exchange website.

(3) Although the Saudi stock market had existed in an informal capacity since early 1990's the Tadawul stock exchange was only established in 2007.

2004). This growth in primary and secondary market activity is matched by growth in the OTC market, which is administered by the KSE legal affairs department owing to the complexity in winding down partnership agreements following death of a partner and in handling subsequent inter-family and inheritance transactions in accordance to Shari'ya law. The increases in the OTC market can be attributed to an increasing understanding and popularity amongst the domestic population for the stock exchange and its products. This has led to substantial increases in the ratio of market capitalization of OTC market to that of the secondary market. However, the increases in the traded value are more modest, beginning from US\$ 3.50 million in 1995, rising to a peak of US\$ 178.04 million in 2004 and then falling to a final value of US\$ 51.46 million in 2006. The ratios of market capitalization to GDP and market capitalization to money plus quasi-money are very low again suggesting that the KSE has a small role in economy and the banking sector dominates.

The evidence from Table 3 reveals that both capitalization and traded value is highly concentrated on the KSE with Sudatel alone accounting for over 83% of total traded value in the organised market segment while Sudanese Free Zones & Markets accounted for over 97% total traded value in the smaller parallel market. Sudatel also accounts for over 62% of the entire equity market capitalization while its Second Sudatel Dollar Fund accounts for over 93% of traded value in the fledgling mutual funds (sukuk) market. Its dominance over KSE activity is further confirmed from Fig. 1 that charts the evolution of the Arab Monetary Fund (AMF) country index for Sudan, composed of 11 most active stocks with a base of 100 in 2002, a price index of Sudatel stock with same base date and value, against traded value on KSE. However while the equity and funds markets are dominated by Sudatel, this only accounts for 74.60% of traded value while the government Shihama (a form of government musharaka contract) market accounts for the remaining 25.40% providing some support for the inference that listing of government instruments is a necessity for the KSE to remain economically viable.

Table 2
Descriptive statistics—the Sudan Stock Exchange (US\$ million), 1995–2006.

Data	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
<i>Primary market</i>												
Funds raised	65.16	5.27	2.06	13.75	23.52	38.29	30.15	157.85	62.97	109.06		
Funds raised from rights and bonus issues	1.15	2.09	0.28	6.09	22.17	34.24	29.99	56.61	60.43	3.98		
<i>Secondary market</i>												
Listed companies	34	40	41	42	43	44	44	46	47	48	49	51
Shares traded (m)	115.73	24.91	164.82	11.67	198.57	14.17	8768.89	4060.24	9745.46	2185.99	142.88	5032.22
Market cap.	44	32	139	111	237	392	457	593	741.22	2058.42	3241.64	3563.49
Value traded	3.50	0.68	3.33	1.00	6.20	23.01	64.02	95.00	93.76	178.04	24.51	51.46
<i>OTC market transactions</i>												
Number of shares (m)	0.49	2.06	2.33	3.39	3.99	3.58	226.96	351.36	167.25	791.92		
Overseas						0.000	0.748	0.517	3.301	0.372		
Inter-family	0.001	0.003	0.020	0.064	0.246	0.476	6.908	0.339	0.468	3.479		
Inheritance	0.002	0.004	0.002	0.005	0.041	0.142	0.102	0.203	0.139	7.426		
Total	0.003	0.007	0.023	0.069	0.287	0.618	7.758	1.059	4.047	3.926		
<i>Ratios (%)</i>												
Mkt. cap./GDP	0.60%	0.35%	1.19%	1.32%	2.22%	3.40%	3.56%	4.02%	4.34%	6.96%	12.01%	10.48%
Mkt. cap./money + quasi-money	0.00%	0.01%	0.02%	0.08%	0.03%	0.04%	0.47%	0.05%	0.14%	10.28%	38.46%	45.95%
Traded val./mkt cap.	7.98%	2.14%	2.39%	0.90%	2.86%	5.86%	14.01%	15.97%	12.65%	12.13%	0.75%	1.44%
OTC/secondary mkt.	0.42%	8.29%	1.41%	29.00%	2.01%	25.29%	2.59%	8.65%	1.72%	36.23%		
Savings rate/GDP	6.72%	2.99%	3.02%	2.66%	3.07%	3.42%	4.45%	5.23%	5.87%	6.68%	11.44%	9.70%

Source: Compiled by the authors from the Arab Monetary Fund, Bank of Sudan Annual Reports, and the Khartoum Stock Exchange websites.

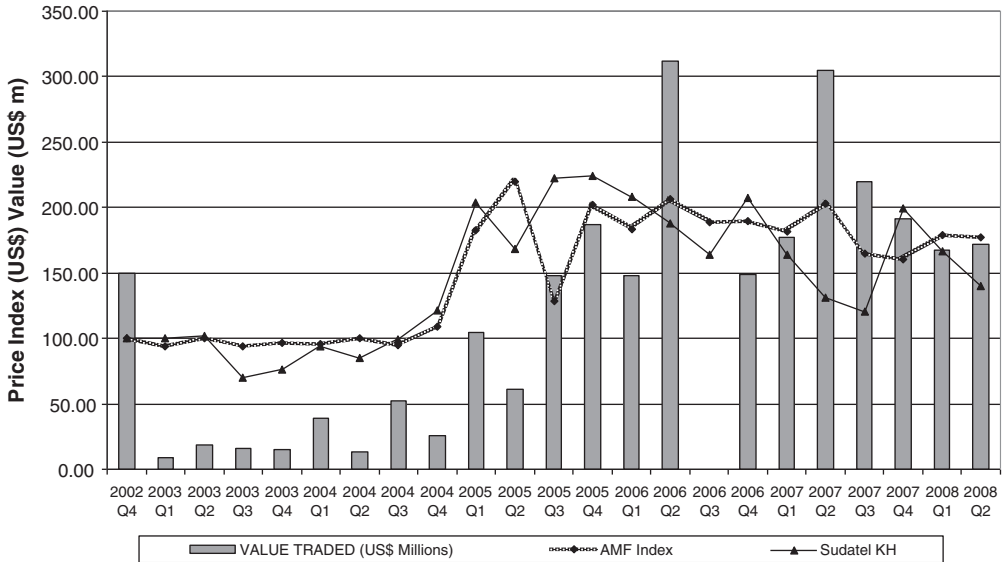
Notes: (1) Values for 2005 and 2006 obtained from Al Zawya database (Dubai).

Table 3
Khartoum Stock Exchange listed firms, 2004.

Market	Company	Listing date	Days traded	Value traded (US\$ millions)	Cumulative proportion of traded value (%)	Market capitalization (US\$ millions)	Proportion of total market capitalization (%)
Organised	Sudatel (Sudan Telecom. Co. Ltd.)	1997	224	97,165,303.27	83.52	946,482,920.83	62.66
	Nile Cement Company	1996	11	15,485,218.38	96.83	2,819,637.43	0.19
	Sudanese French Bank	1994	15	1,125,597.85	97.79	11,815,371.00	0.78
	Saudi Sudanese Bank	1994	15	935,873.13	98.59	11,455,775.40	0.76
	Sudanese Islamic Bank	1994	56	564,886.61	99.09	7,571,693.82	0.50
	Gum Arabic Company	1994	79	548,757.26	99.56	8,662,560.84	0.57
Organised	Total (22 listed organised market firms):	–	–	116,338,538.66	100.00	–	–
Parallel	Sudanese Free Zones & Markets	2002	44	15,066,434.34	97.91	381,620,073.97	25.26
	Al Rowad Financial Services Co. Ltd.	2002	3	174,324.97	99.04	38,970.85	0.002
Parallel	Multi Media Company Limited	2001	2	135,204.99	99.91	254,384.22	0.17
	Total (29 listed parallel firms):	–	–	15,388,306.50	100.00	–	–
Total	Parallel and Organised (51 listed companies)	–	–	–	–	1,510,614,998.55	100.00
Funds	Second Sudatel Dollar Fund	–	23	1,030,489.72	93.66	–	–
	Development Fund	–	5	47,743.67	97.99	–	–
	Nile Fund	–	3	18,668.36	99.69	–	–
Funds	Total (7 listed funds):	–	–	1,100,302.00	100.00	–	–
Shihama	SHIHAMA 1\4\2003 Annual 200,000	–	35	6,635,379.18	14.68	–	–
	SHIHAMA 1\7\2004 Annual 200,000	–	10	5,504,598.16	26.85	–	–
	SHIHAMA 1\7\2003 Annual 200,000	–	60	4,535,173.25	36.88	–	–
	SHIHAMA 1\10\2003 Annual 200,000	–	13	4,023,473.97	45.78	–	–
	SHIHAMA 1\1\2004 Annual 100,000	–	58	3,552,160.17	53.63	–	–
Shihama	Total (34 listed Shihama certificates):	–	–	45,215,135.07	100.00	–	–
–	Organised market segment	–	–	116,338,538.66	65.34	–	–
–	Parallel market segment	–	–	15,388,306.50	8.64	–	–
–	Funds segment	–	–	1,100,302.00	0.62	–	–
–	Shihama market segment	–	–	45,215,135.07	25.40	–	–

Source: Khartoum Stock Exchange annual report (Arabic), 2004.

Notes: (1) End of year Bank of Sudan SDD-US\$ exchange rate used.



Source: Arab Monetary Fund (AMF) annual reports and KSE Annual Report 2004 (Arabic)

Notes: (1) Sudanet stock price index generated from stock price returns series assuming a base level of 100 in 2002Q4

(2) AMF (Khartoum) price index is generated using top 11 traded local stocks and is market capitalization weighted. It assumes a base of 100 in 2002Q4

Fig. 1. Khartoum Stock Exchange and Sudanet stock price indices and traded value (US\$ million).

The evidence regarding ownership characteristics in Table 4 indicates that the ownership of listed firms is dominated by a small number of block-shareholders who have large equity stakes. The presence of these large block-shareholders is also confirmed by the generally very low free float percentages, that is, the proportion of shares freely available for the public. These block-shareholders support the domestic perception of *mudarabah* (equity) instruments as highly risky (Badr El-Din, 2003). Equally, there is a fear of loss of control in smaller family-owned firms and of expropriation by investors, particularly because of the lack of protection from the regulatory authority despite *shari'ya* compliance (Badr El-Din, 2003). Finally, the presence of block-shareholders is in line with the emphasis in Islamic finance on longer term partnerships (Naughton and Naughton, 2000). There is also considerable evidence of sovereign involvement in the equity market either by direct means or indirect through a variety of ministries and regional development agencies. The pattern of sovereign ownership is also largely dominated by Sudan and Saudi Arabia with the latter being the only other nation to have significant involvement in the market through corporate and individual shareholders as well.

3.2. Competition from the banking sector for provision of funds

Relationship-based bank finance is the dominant source of business funding is responsible for industrial growth and economic development in Sudan and recently has recently channelled the revenues from windfall gains from oil production in the south. Table 5 shows an increase in from US\$ 20 million in 1998 to US\$ 4860 million in 2006. *Murabaha* contracts are the most common form of finance, accounting for over 39% of funding, while *musharaka* contracts can account for between 20% and 30%. *Mudarabah* and *salam* contractual arrangements are considerably less common, and each accounts for up to 6% of banking sector funding. Finally, other more specialised forms of contractual arrangements (including *ijara* and *mugawla* contracts) together account for the remaining 12–20%. Financing by *murabaha* contracts had the biggest increase in absolute terms between 1998 and 2006, although the relative proportions provided by each

Table 4

Khartoum Stock Exchange shareholding, 2009.

Stock	Government agencies		Corporate		Individual		Blockholder	Free float
	Number	%	Number	%	Number	%	%	%
Blue Nile Insurance Co.	0	0.00	0	0.00	0	0.00	0.00	100.00
Blue Nile Mashreg Bank	0	0.00	1 (Sudan)	87.64	0	0.00	87.64	12.36
El Gharb Islamic Bank	0	0.00	1 (SA)	–	0	0.00	–	–
Sudan Tea Co.	0	0.00	1 (Sudan)	–	0	0.00	–	–
Al Shamal Islamic Bank	1 (Sudan)	–	5 (Sudan (4); SA)	–	7 (Sudan (5); SA)	–	–	–
Al Salam Bank	0	0.00	5 (UAE (4); SA)	35.50	2 (Sudan)	16.97	52.47	47.53
Animal Resources Bank	0	0.00	1 (Bahrain)	–	0	0.00	–	–
Sudanese Ins. and Reins. Co.	1 (Sudan)	–	3 (Sudan)	–	0	0.00	–	–
Tadamon Islamic Bank of Sudan	1 (Sudan)	–	3 (Sudan (2); KW)	5.13	5 (Sudan (3); SA)	44.68	–	–
Sudanese Free Zones & Mkts Co.	0	0.00	>2 (SA)	49.00	0	0.00	41.00	59.00
Sudanese Kuwaiti Road Tpt Co.	2 (KW; Sudan)	–	>2 (KW (>1); Sudan (>1))	–	0	0.00	–	–
Juba Insurance Co.	5 (Sudan)	26.75	3 (Sudan)	45.00	0	0.00	71.75	28.25
Nile Cement Co.	1 (Sudan)	–	3 (UAE; EGY; SA)	82.97	0	0.00	82.97	17.03
Sudanese Islamic Bank	0	0.00	2 (EGY; SA)	5.00	0	0.00	–	–
Sudatel Telecom Group	2 (Sudan; SA)	26.18	1 (UAE)	4.60	1 (LEB)	4.00	35.80	64.20
Omdurman National Bank	1 (Sudan)	2.43	7 (Sudan (6); EGY)	93.30	0	0.00	95.73	4.27
National Reinsurance Co.	1 (Sudan)	56	2 (Sudan)	32.00	0	0.00	88.00	12.00
Sudan Oil seeds Co.	1 (Sudan)	58.00	0	0.00	0	0.00	58.00	32.00
Sudanese Animal Res. Co.	0	0.00	1 (Sudan)	–	0	0.00	–	–
Sudanese French Bank	1 (Sudan)	6.48	9 (Sudan (4); LUX; SW; USA; FR; LEB)	56.58	3 (Sudan)	14.55	95.06	4.94
Watania Cooperative Ins. Co.	0	0.00	3 (Sudan)	–	1 (Sudan)	–	–	–
Islamic Development Co.	1 (Sudan)	–	5 (Sudan (2); SA; EGY; Qatar)	45.46	0	0.00	45.46	54.54
Ivory Bank	3 (Sudan)	70.00	2 (Sudan)	27.00	–	–	97.00	3.00
Export Development Bank	1 (Sudan)	21.85	2 (Sudan)	42.79	>1 (Sudan)	34.91	99.55	0.45
Financial Investment Bank	4 (Sudan (3); SA)	70.00	6 (Sudan)	–	3 (Sudan (2); SA)	–	–	–
Gum Arabic Co.	1 (Sudan)	–	5 (Sudan (4); UAE)	–	0	0.00	–	–
General Insurance Co.	0	0.00	0	0.00	1 (Sudan)	60.00	60.00	40.00
Farmer's Commercial Bank	1 (Bahrain)	–	2 (Sudan)	–	1 (Sudan)	–	–	–
Faisal Islamic Bank of Sudan	0	0.00	1 (EGY)	25.00	–	–	25.00	75.00

Source: Compiled by authors from Al Zarwya database (Dubai).

Notes: (1) KW represents Kuwait, SA is Saudi Arabia, EGY is Egypt, UAE is United Arab Emirates, SW is Switzerland, USA is United States of America, FR is France, and LEB is Lebanon.

(2) Data unavailable for 17 stocks (out of total of 46 listings): El Nilein Insurance Co., Commercial Bakeries Co., Assalama Ins., Gadarfi Investment Bank, El Rowad Financial services Co., Foja International Ins. Co., Karmah Trading Co., White Nile Flour Mills, Multi-Media Co., Sudan Cinema Co., Al Hijra Exchange, Workers National Bank, Saudi Sudanese Bank, National Petroleum Co., Tagseet Co., Al Mohager Int'l Investment, and Al Rayaam Press and Publishing Co.

Table 5
Bank financing in Sudan, 1998–2006.

Mode of financing	1998	1999	2000	2001	2002	2003	2004	2005	2006
Murabaha	54.37%	49.12%	33.74%	39.53%	35.92%	44.64%	38.52%	43.29%	53.37%
Musharaka	21.11%	30.80%	42.88%	30.97%	27.88%	23.22%	31.99%	30.82%	20.38%
Murdaraba	5.97%	4.07%	3.51%	6.25%	4.63%	5.71%	5.74%	4.20%	5.25%
Salam	6.61%	5.02%	3.35%	4.99%	3.32%	4.80%	2.95%	2.09%	1.28%
Others*	11.94%	10.99%	16.52%	18.26%	28.26%	21.63%	20.80%	19.60%	19.72%
Total (%)	100%	100%	100%	100%	100%	100%	100%	100%	100%
Total (US\$ million)	20.41	285.86	393.74	559.95	787.89	1082.83	1706.25	3014.43	4861.51

Source: Compiled by the authors from the Bank of Sudan Annual Reports (1999–2006).

Note: (1) The 'others' mode of financing includes the ijara and mugawla modes.

contract type remained relatively constant. The limited range of contract that can easily be traded on a stock exchange, together with considerable monitoring and enforcement costs, indicate that the banking system is better placed to deal with these issues.

4. Motivations for cross listing

The KSE has three firms that are cross-listed (Sudatel, Al Salam Bank, and Emirates & Sudan Bank), but only Sudatel has its primary listing in Khartoum (Hearn et al., 2009). Sudatel also has secondary listings on the Abu Dhabi and Bahrain Stock Exchanges. In 2007, the market capitalisation of the stock listed in Abu Dhabi was almost double that listed in Khartoum, and both the traded value and the turnover ratio for Abu Dhabi were considerably greater (see Table 6). The Bahrain listing has much lower market capitalization, approximately 10% of the Khartoum level, with no trade value and a turnover ratio of zero. It appears that this latter listing was undertaken to attract high net worth individuals interested in a longer-term shari'ya-compliant partnership.

4.1. Cost of equity implications from cross listing

4.1.1. Measurement

Share valuation in an Islamic financial system involves revisiting the foundational principles of valuation theory in the absence of interest and with an emphasis on equity partnership. Consequently, the cost of capital in Islamic finance is expressed as an expected rate of profit, which is used to provide a discount rate for cash flows to calculate a Net Present Value (NPV) for the firm (Siddiqui, 2005). However, the expected rate of profit is itself a complex issue given the divergent views over the concept of the time value of money between Islamic and western finance (Grandes et al., 2010; Hearn, 2011; Hearn et al., 2009; Obaidullah, 2006). The notion of profit and loss sharing and partnership inherent in Islamic contracts requires that an element of risk is borne by all partners and thus the portfolio investment models of Markowitz (1959) is largely acceptable in Islamic finance (Obaidullah, 2006). However, the concept of a risk free asset is not (Siddiqui, 2005) and this effectively rules out standard valuation models such as the capital asset pricing model, although more recently the development of a sovereign sukuk (Islamic bond) market has caused a resurgence of interest in the use of the expected rate of profits on sukuks as a proxy for risk free rates (Obaidullah, 2006).

While there is evidence that Sudanese firms use a number of different valuation techniques, such as Internal Rate of Return (IRR) and Payback Period (PB) (Eljelly and Abuldris, 2001), the use of dividend capitalization models (see for example Gordon and Shapiro (1956)) provides an alternative by overcoming the unresolved issues concerning risk-free rates of interest or yield and the lack of suitable benchmarks in conventional valuation models. Since Islamic finance provides for dividend payments, or the distribution of profits, associated with equity ownership (Mannan, 1993) valuation models using dividends are a viable alternative. The dividend capitalization method is outlined below,

$$k_s = \frac{D_{t+1}}{P_t} + g \quad (1)$$

Table 6

Descriptive statistics and costs of equity for listed Sudatel stock, 2003–2007.

	2003	2004	2005	2006	2007
<i>Market capitalisation (US\$ million)</i>					
Khartoum	589.08	946.48	1743.01	1610.87	1551.18
Bahrain	–	–	131.25	130.36	130.36
Abu Dhabi	1123.30	1640.03	2653.04	2283.37	2388.76
<i>Traded value (US\$ million)</i>					
Khartoum	–	97.165	–	126.16	131.45
Bahrain	–	–	0.00	0.00	0.00
Abu Dhabi	20.31	165.84	1106.21	442.99	503.59
<i>Turnover ratio (%)</i>					
Khartoum	–	10.26%	–	7.83%	8.47%
Bahrain	–	–	0.00%	0.00%	0.00%
Abu Dhabi	1.81%	10.11%	41.70%	19.40%	21.08%

Source: Compiled by the authors from the Arab Monetary Fund, Khartoum, Bahrain and Abu Dhabi Stock Exchange websites.

where k_s is cost of equity capital, D_{t+1} is the next year's (estimated or forecasted) dividend, P_t is the current stock price and g is the long run expected dividend growth rate. While there is considerable debate in the literature regarding the calculation of the growth rate the most common formula is,

$$g = (1 - \rho)RoE \quad (2)$$

where $(1 - \rho)$ is the proportion of the retained earnings and RoE the balance sheet item return on equity.

4.2. Implications from cross listing for Sudatel

The Khartoum market is highly illiquid, as evidenced by the figures on the turnover ratio and trading value reported above. This is due in part to the small size of the domestic market and to the low level of economic development, but also to the impact of shari'ya compliance which segments the market and raises the cost of capital. Segmentation occurs owing to the imperfect compatibility between shari'ya Mudarabah partnerships and conventional equity instruments as well as through the divergent nature of stringent regulation regarding information disclosure and conduct of market operations between shari'ya and western-focussed markets. We have estimated the cost of Sudatel equity on the Khartoum and Abu Dhabi Stock Exchange using the dividend capitalisation method, and assuming a constant rate of growth of dividends of 6% per annum. There are considerable fluctuations in the cost of equity, reported in Table 7, from year to year but, when averaged over 2003–07, the cost of Sudatel equity on the less-segmented Abu Dhabi market is about half that of the comparable Sudatel stock listed on the Khartoum market. The Abu Dhabi listing was clearly a strategy for Sudatel to escape the constraints of the limited Sudanese capital market, and access cost-effective finance to fund their proposed expansion in the highly-competitive Maghreb telecommunications markets.

4.3. Risk diversification implications and attraction of foreign investors

We examine the risk diversification benefits to potential foreign investors from the two major Sudatel listings, namely Khartoum and Abu Dhabi using an application of mean–variance portfolio theory (see Harvey (1994) for a detailed discussion). Descriptive statistics and correlations for the Khartoum and Abu Dhabi listings of Sudatel stock and for a range of benchmark equity indices from major regional financial markets, namely Saudi Arabia, Oman, Egypt, Bahrain, Kenya and Morocco together with the Morgan Stanley Capital International index (MSCI) are detailed in Table 8. These monthly data over the period from April 2003 to December 2008 suggest that the mean–variance characteristics of the Sudatel stocks are poor in contrast to the regional benchmarks. Both stocks have low mean returns and very high standard deviations. Furthermore, the correlations in the second panel of the table show that the correlations with

Table 7

Costs of equity for listed Sudatel stock, 2003–2007.

Listing	2003	2004	2005	2006	2007
Khartoum	24.89%	29.15%	26.46%	55.33%	13.07%
Abu Dhabi	24.89%	9.18%	9.00%	50.07%	13.36%

Source: Compiled by the authors from the Arab Monetary Fund, Khartoum, Bahrain and Abu Dhabi Stock.

Notes: (1) The dividend capitalisation method assumes constant (mean) rate of growth rate of dividends of 6%.

the regional benchmarks are mostly negative in Abu Dhabi but positive in Khartoum, suggesting that the former offers regional portfolio managers a better opportunity to diversify risk.

Five portfolios were then constructed. The first two are centred on the Khartoum and Abu Dhabi listings plus the regional benchmarks. The last three focus on the Khartoum listing plus first Morocco and Egypt, then Egypt and Kenya, and finally Saudi Arabia and Oman. Table 9 summarises the key characteristics of each of these portfolios, notably the mean and standard deviation of the returns and the risk-return ratio.

The first panel provides further support for the dual listing in Abu Dhabi with improved mean return and standard deviation when included in a portfolio of regional assets compared with the Khartoum listing. The risk-return ratio, a modified version of the Sharpe ratio, shows the benefits to investors from including the Abu Dhabi (1.5289) asset compared to that in Khartoum (1.3437). The diversification benefits attributable to the Khartoum listing are in the second panel of Table 7. The combination of the Khartoum asset alongside the Saudi Arabian and Omani benchmark indices gives the lowest portfolio mean and standard deviation. Further evidence of the benefits to Saudi Arabian and Omani investors from including the Khartoum asset is shown from the risk-return ratios. This ratio for the portfolio with Saudi Arabia and Oman is higher (0.8999) than for either of the other two combinations, that is, Egypt and Kenya (0.7694) and Morocco and Egypt (0.8042).

The evidence suggests that large firms, such as Sudatel, engaged in highly competitive international production can escape from the segmentation imposed by an illiquid domestic market by cross-listing on more liquid regional exchanges. However, the need for more cost-effective finance must be balanced by the requirement to be shari'ya compliant. Consequently, firms adhering to the concept of partnership and an Islamic corporate governance system will be motivated by the need to avoid potentially harmful

Table 8

Descriptive statistics—monthly equity returns (Saudi Rials), April 2003 to December 2008.

	Sudatel (Abu Dhabi)	Sudatel (Khartoum)	S & P Saudi Arabia	S & P Oman	S & P Egypt	S & P Bahrain	MSCI World	S & P Kenya	S & P Morocco
<i>Panel 1: Descriptive statistics</i>									
Observations	68	68	68	68	68	68	68	68	68
Mean	1.82%	2.29%	2.60%	3.25%	5.12%	2.34%	1.36%	3.26%	3.52%
Std. dev.	16.32%	13.32%	9.53%	4.99%	9.10%	4.00%	2.72%	5.81%	7.75%
<i>Panel 2: Correlations</i>									
Sudatel (Abu Dhabi)	100.00%								
Sudatel (Khartoum)	34.11%	100.00%							
S & P Saudi Arabia	−15.05%	−2.76%	100.00%						
S & P Oman	−27.68%	−14.94%	39.99%	100.00%					
S & P Egypt	−5.47%	7.45%	23.17%	28.82%	100.00%				
S & P Bahrain	−9.02%	3.42%	22.98%	27.18%	38.74%	100.00%			
MSCI World	0.65%	1.70%	−2.09%	4.05%	11.28%	−6.15%	100.00%		
S & P Kenya	−15.22%	5.30%	7.14%	25.30%	13.65%	2.44%	35.91%	100.00%	
S & P Morocco	−12.57%	6.98%	−10.74%	1.81%	1.95%	−4.18%	31.81%	0.62%	100.00%

Source: Compiled by authors from Datastream.

Notes: (1) Data for Sudatel (Abu Dhabi and Khartoum listings) obtained from respective national securities exchanges.

(2) Sudatel Abu Dhabi and Khartoum market series constructed following Standard & Poors index methods.

(3) All series translated into Saudi Rials to facilitate comparison across wider MENA region.

Table 9

Portfolio characteristics for Sudatel Khartoum and Abu Dhabi listings.

	Mean	Max	Min	Std. dev.	Risk–return ratio
<i>Panel 1: Portfolio containing all markets and the following Sudatel listing</i>					
Abu Dhabi	26.65%	51.81%	9.57%	4.61%	1.5289*
Khartoum	25.31%	52.34%	6.81%	5.12%	1.3437
<i>Panel 2: Portfolio with Sudatel (Khartoum) and the following</i>					
Morocco and Egypt	49.66%	77.74%	21.54%	14.82%	0.8042
Egypt and Kenya	51.04%	110.47%	14.43%	14.71%	0.7694
Saudi Arabia and Oman	41.98%	101.63%	–11.94%	12.22%	0.8999*

Notes: (1) Annual geometric means of monthly arbitrage premiums evaluated in Saudi Rials and in basis points.

(2) All portfolio statistics are annualised. Risk–return ratio is the mean of the annualised mean divided by standard deviation.

(3) * represents the best returns to risk portfolio performance.

speculative effects and shareholder short-termism. Thus, a more prominent role may be accorded to block shareholders in firms' financing strategies than in western-orientated financial systems. Shared social and religious values are likely to restrict the potential locations for cross listing to regional exchanges with sizeable shari'ya compliant Islamic financial instrument markets and with investors who have similar beliefs.

5. Conclusions

This paper addresses the important questions regarding the ability of a fully shari'ya compliant stock exchange within an Islamic financial system to provide an effective source of development capital. It assesses the impact of the Khartoum Stock Exchange on the Sudan economy and reviews the financing options available for larger firms within the fully shari'ya compliant Sudanese financial system using the Sudan Telecommunications company as a case study.

There are a number of difficulties in a study of this sort. Firstly, there is little empirical work on the impact of stock exchange financing within a fully shari'ya compliant Islamic financial system in a developing context. Then there are the conceptual problems that results from the differing interpretations and understandings of Qu'ran and canonical texts by the various schools of Islamic jurisprudence. This is a potential source of conflict in forming a policy response to the rapidly evolving area of commercial innovation within stock exchange finance. A major issue is the existence of strong-informational efficiency that follows from Islamic requirements for full disclosure of all publicly and privately available information, which contradicts finance theory in the west, although while this is based on common shared Islamic behavioural values and ethics the frequent lack of coherent regulation and appropriate enforcement mechanisms in developing countries infers that this assumption is at best tenuous. This is not simply a problem in the application of financial models but also in practice, as small family owned firms seek to retain sensitive information or would find the costly compliance of auditing and accounting measures to be prohibitive.

With respect to economic development problems arise due to the limited range of Islamic finance products that are easily traded and compatible with stock exchange operations. While there is evidence of positive corporate governance and monitoring as a result of mudarabah partnership-based instruments in contrast to debt contracts commonly associated with western financial markets, these contracts are perceived as risky, which deters investors. Therefore, currently the partnership aspects in an Islamic financial system and the post-transaction monitoring costs arising from shari'ya compliance favour the relationship-based banking system and developing Islamic countries will continue to have a minimal stock markets emphasis. Larger firms such as the Sudan Telecommunications company that can cross list on regional exchanges benefit from substantial reductions in costs of equity capital.

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