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Shari'ah-compliant Stock Screening: A Financial Perspective

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Abstract

Stock markets have always provided countries with a practical and flexible way to finance their economies. Hence, Islamic finance has embraced the stock market since the early 90s adopting the same framework as an ethical investment. Accordingly, Islamic investors in emerging countries shall have a range of choices when constructing a financial portfolio. However, existing screening methodologies lack flexibility as they are mainly based on rigid ratios and irrelevant thresholds. Consequently, these methodologies lead to an inefficient stock index as they completely ignore the features of each stock market along with the specificities of each industry. Thus, our study will try to propose a new screening methodology based on the optimal financial structure of each industry. The main objective of our study is to propose a methodology that will overcome different loopholes addressed in the literature. The present paper is an explanatory study which needs an empirical confirmation of the proposed methodology in order to measure its performance and efficiency against existing shari'ah-compliant indices. Hence, the main preliminary finding of our research is to enrich the academic debate on shari'ah-compliant screening methodologies through appealing to conventional corporate finance framework to enhance current methodologies.

Keywords: Screening methodology, stock markets, Stock Index.

JEL Classification: D53, G11, G15.

Introduction

It is hard to imagine a world with no capital markets, banks or financial institutions as they have become crucial players in the modern economic life. The innovative and dynamic structure of capital markets especially stock markets has released great opportunities, and to the same extent has increased the risk for all players involved in the market. A stock exchange is an organized marketplace, licensed by a relevant regulatory body where ownership stakes (shares) in companies are listed and traded. The definition clearly shows how stock markets play an important role in providing financing and, therefore, triggering dynamics all along the business chain. Also, the financial stock market facilitates higher investments and the allocation of capital, and indirectly fosters economic growth.

Hence, the existence of an efficient stock market promotes economic prosperity. Indeed, an efficient stock market contributes to attracting more investments by financing productive projects that lead to economic growth, mobilize domestic savings, allocate capital proficiency, reduce risk by diversifying, and facilitate exchange of goods and services.

The main pillar of Islamic investing philosophy is risk taking as the sole justification for any lucrative compensation. Therefore, a suitable environment for Muslim investors must be secured in order to provide relevant investing instruments that comply with shari'ah principles. This situation pushes researchers and policy makers to look for a market where risk taking, information efficiency and tough regulation would co-exist to relatively comply with shari'ah's¹ ruling. In addition to that, there is an increasing demand for Shari'ah-Compliant Investment products which provide stability and lower risk due to the growing Muslim population which represents almost 20% of the world population. This reality has attracted more listed companies to opt for shari'ah-Compliant status through the screening process of inclusion-exclusion exercise.

Indeed, stock exchange provides an answer to the Muslim demand for an equity market that can be adapted and regulated by shari'ah law. Therefore, the introduction of Islamic principles and values within the stock market would have a significant impact in restructuring the stock market so that it can comply with shari'ah's ruling. The existence of Islamic values will mainly target the screening of permissible business activities conducted in accordance with shari'ah principles. For that, shari'ah screening methodology will significantly influence the development of Islamic capital market.

¹ Shari'ah refers to the Islamic canonical law based on the teachings of the *Qur'an* and the traditions of the Prophet (*Hadith* and *Sunnah*), prescribing both religious and secular duties and sometimes retributive penalties for lawbreaking.

The implementation of screening methodologies follows the classic process of any shari'ah ruling (*Qur'an*, *Sunnah*, *Ijma*², *Qiyas*³ and *Ijtihad*⁴). However, one should not blindly be bound by a mechanic application of shari'ah ruling (Ahkam) and ignore the core philosophy of Islam. This philosophy can be summarized in the objectives of shari'ah (*Maqasid al-shari'ah*), which Al-Ghazali⁵ identifies as promoting human beings' welfare through the protection of their five basic interests (*maṣāliḥ*) which are: religion, life, reason, progeny and property.

The importance of a rigorous screening methodology becomes obvious when we realise that when owning a stock, Muslim investors need to take into account not only the structure of the transaction but also the nature of the counter party. The investor turns into a part-owner of the company, and become responsible for its internal structuring as well. Consequently, the screening methodology should take into consideration both quantitative and qualitative criteria in order to match as much as possible shari'ah's requirements.

The following sections will include details on the main screening methodologies. However, for the sake of initiating our problematic, the most common feature of the existing screening methodologies is their rigidity. This fact comes as a result of the fixed ratios and thresholds adapted by each service provider. These thresholds do not take into account the specificities of each sub-sector of the stock exchange. Hence, the index may suffer some over/under evaluation when a common ratio is adapted apart from the requirements of each sector.

The most problematic ratio is the debt/equity ratio with an average threshold varying from (33%-50%). Nevertheless, it is argued that the tolerable level of conventional debt should be based on the unavoidable level of debt such as working capital, and that the currently applied tolerance level seems to be too liberal, since a concession is made about the actual level of conventional debt that is supposed to be zero (Khatkhatay & and Nisar, 2006).

Accordingly, this paper aims to propose a flexible shari'ah screening methodology that takes into consideration the optimal financial structure of each sector in order to come up eventually with an optimal shari'ah-compliant stock portfolio. Thus, the first section will present a literature overview on past research on stock screening. In the second section, we will expose different screening

² Ijma', (Arabic: "consensus") in Islamic law, the universal and infallible agreement of either the Muslim community as a whole or Muslim scholars in particular.

³ Qiyas is the principle of analogy applied in the interpretation of points of Islamic law not clearly covered in the Qur'an or sunnah : analogical inference or deduction.

⁴ Ijtihad, (Arabic: "effort") in Islamic law, the independent or original interpretation of problems not precisely covered by the Qur'an, Hadith (traditions concerning the Prophet Muhammad's life and utterances), and *ijma*'.

⁵ Al-ghazali (1058-1111) was a Muslim theologian, jurist, philosopher, and a mystic descending from the Persians.

methodologies offered by service providers along with the main problematic issues. Finally, the third section will propose a new framework for shari'ah-compliant stock screening.

I. Literature Review:

Researchers have put much effort to detail the methodologies adopted by different financial services across the globe. Kasi & Muhammad (2016) have conducted a comparative study of the screening methodology between Asian countries (Malaysia, Indonesia, Honk Kong and Singapore) with the screening methodology of the USA illustrated by the famous Down Jones approach. According to these authors, the United States is the only pioneering nation, by far, to have introduced, undertaken and retained the current Shari'ah screening methodologies, namely industry screens and financial ratio screens for the past 15 years. Also, USA is known to adopt the most rigorous shari'ah screening methodology namely the Down Jones screening methodology.

Norlita Zainudin and Surianom Miskam (2014) have presented a critical review on the existing screening methodologies. They have pointed at the issue of the variety of screening methods which may imperil the long term growth of Islamic finance. Therefore, there is a need for Muslim scholars to standardize their screening methodologies effectively in the international market. They have also highlighted the Malaysian approach to calculate the level of mixed contributions from permissible and non-permissible activities towards group turnover and group profit before tax of the companies. This approach makes Malaysia a unique case in tolerating mixed contribution from non-permissible activities which do not constitute the core business of a company under the justification of offering a diversified shari'ah-compliant index.

On this same issue, Yaquby (2000) explored different justifications among contemporary scholars on trading joint stock companies (mixed contribution to the company's income), and suggested that arguments cited by the advocates of permissibility are more convincing than those of its detractors. Moreover, Rehman & Masood (2013) argued that since it is almost impossible to find a company which is purely Shari'ah-compliant, Muslim scholars have agreed to approve of any company where 95 per cent of its earnings are derived from halal activities. Hence, the remaining 5% would be tolerable due to current business practices.

According to the same authors, the relevance of some screening ratios is still subject to scientific debate especially the cash/total asset ratio. They have explained that money in itself is not a permissible asset in accordance with the Islamic Shari'ah principles. The level of liquid assets which may include cash and cash equivalents, short term investments and accounts receivables should be kept to a minimum in Islamic finance.

Khatkhatay & and Nisar (2006) mentioned three main accounting ratio that need to be determined for a company to be listed as shari'ah-complaint: indebtedness of the enterprise, interest and other suspicious earnings, as well as the extent of cash and receivables of the company.

Derigs and Marzban (2008) raised the issue of fixing thresholds among shari'ah scholars. They have affirmed that there is no set of thresholds for the financial structure fixed in the *Quranic* teachings and it is instead mainly based on *Ijtihad*. Interpretations on the minimum acceptable ratios or threshold values from 5 to 50 percent tend to differ between different Shari'ah boards resulting in differing standards acceptable by various Shari'ah boards all over the world (Rehman & Masood, 2013).

When going through the screening methodologies, the most common thresholds are (30-33%) level of conventional debt, (30 - 33%) for interest-based investment/deposit, (33% - 50%) liquidity and (5% - 25%) of impure income. Hence, the legal maxim used to justify these ratios can be cited as follow: "the majority deserves to be treated as the whole of a thing" (Mahfooz & Ahmed, 2014). That implies that if securities represent composite assets, the rule of the dominating asset (having more that 50 percent) will apply to the security. It is argued that the threshold range of between 33% and 49% is deduced from this Shari'ah maxim whereby the majority can be classified as a 'simple majority' in the case of more than 50% and a 'super majority' in the case of more than 67% (Usmani, 2005).

In their detailed article, Khatkhatay & and Nisar (2007) present a complete assessment of the current screening practices. They begin on commenting on the compliance of stock investment, they state that the compliance of such investment comes from the structuring of the transaction itself as equities which do not confer any assured benefits on the holder. In fact, shareholder could stand to lose his entire capital in the event the company in which he has invested suffers massive losses. Also, the authors comment on the relevance of the cash/asset ratio, they affirm that if inventories are valued at market prices, the investors would end up with a residual value for the cash and debts of the company which can deviate largely their par values. As a result, it would be unacceptable Shari'ah-wise to be involved in the trading of such scrips.

However, Wilson (2004) argues that imposing fixed ceilings on cash and liquidity holdings does not seem practical, since the level of holdings of cash and liquidity vary according to the business cycle.

Concerning the debt/asset ratio that relates to our research, Khatkhatay & and Nisar (2007) affirm that companies differ in their capital structuring, depending on the sector in which they operate. There may be a case for setting differential ratios for the debt: total assets ratio depending on the industry segment of the company. If this is not feasible, debt: total assets ratio of <20% or 25% appears a realistic tolerance limit to be set. However, the Malaysian SAC adopts another extreme

position not placing any restriction on the level of debt or level of interest bearing securities at all. They argue that the judgment should be based on the usage of the money, rather than its source, since the debt of the company has occurred in the past (Dar Al Istithmar, 2009).

II. Shari’ah-compliant Screening methodologies:

The principle of Islamic finance consists in retaining only the companies that obey, or at least are, closest to the principles explained in the introductory chapter. For this reason, auditing standards have been set by the Accounting and Audit Organization for Islamic Financial Institutions (www.aaofii.com). Nevertheless, a variety of other financial service providers propose other methodologies with slight differences like Down Jones, FTSE, Morgan Stanly and others. Table 2 presents the geographical coverage of the Morgan Stanly Islamic index around the world.

Table 1. Geographical coverage of the MSCI Islamic Index

Covered areas	Number of countries	Large caps	Mid-caps	Small caps
Developed markets	23	Yes	Yes	No
Emerging Markets	23	Yes	Yes	Yes
Gulf States	6	Yes	Yes	Yes
Other markets	17	Yes	Yes	No

Source: MSCI (2011)

The following figures sums up the main screening methodologies in terms of their respective service providers:

Table 2. Main Screening Methodologies Used by Some Muslim Countries

	Malaysia SAC	DJII	AAOIFI	FTSE shari'ah global equity index
Debt Ratio	$\frac{D}{A_i} < 33\%$	$\frac{D}{MC_{24i}} < 33\%$	$\frac{D}{MC_i} < 30\%$	$\frac{D}{A_i} < 33\%$
Interest Ratio	N/A	$\frac{CIBS_i}{MC_{24i}} < 33\%$	$\frac{CIBS_i}{MC_i} < 30\%$	$\frac{CIBS_i}{A_i} < 33\%$
Liquidity Ratio	$\frac{C_i}{A} < 33\%$	$\frac{AR_i}{MC_{24i}} < 33\%$	$\frac{MVIA_i}{MVA_i} \geq 30\%$	$\frac{AR_i + C_i}{A_i} < 50\%$
Income Ratio	$\frac{NPII_i}{R_i} < 5\%$ <i>Prohibited activities</i> $\frac{NPII_i}{R_i} < 10\%$ <i>Elements of Umum Al – balwah</i> $\frac{NPII_i}{R_i} < 20\%$ <i>Rentals from non shari'ah</i> <i>– compliant activities</i> $\frac{NPII_i}{R_i} < 25\%$ <i>Elements of Maslahah</i>		$\frac{NPII_i}{R_i} < 5\%$	$\frac{NPII_i}{R_i} < 5\%$

Source: The Authors

These indices, which were initially launched as trend indicators for shari'ah-compliant stocks, have become benchmark portfolios, paving the way for the creation of mutual funds, and the development of index products and structured Islamic products. In general, investors wishing to invest in accordance with the principles of Islamic law seek the diversification of their portfolios through investment funds and financial products whose underlying assets are securities included in the index. Among the screening methods for the securities that are part of a stock market index in Islamic finance, the most commonly accepted criteria in the sense of El Gamal (2006), are those retained by the Sharia Committee of the Dow Jones Islamic Market Index (DJIMI).

The current methodology underlying global shari'ah-complaint stocks is based on a two-tier process. First, a qualitative filtering that we will call "extra-financial screening". Second, a quantitative filtering called "financial filtering" (Cekici, 2009).

These criteria consist of filtering in two steps: choosing companies whose sectors of activity are authorized by the shari'ah, and select only companies that respect the following thresholds:

- Debts / market capitalization = Less than 33%;
- Current assets / market capitalization = Less than 49%;
- Interest-generating assets / market capitalization = Less than 33%.

We choose to present hereafter ratios published on the *Standard & Poor's Shari'ah Indices* guideline as they represent a relative consensus among Muslim jurists.

Our analysis will focus on the debt and cash component as they raise many questions on the relevance of the measure and threshold adopted.

III. The Proposed Methodology:

When going through existing screening methodologies, we can realize that the level of the tolerance thresholds of debt, liquidity, interest-bearing securities and impermissible income ranges are (33.33% - 30%), (33% - 50%), (33.33% - 30%) and (5% - 25%) respectively. Thus, we can deduce that these thresholds appear to be set arbitrarily, since they are based on *ijtihad* of scholars to deal with contemporary finance issues, rather than being explicitly linked to the Qur'ān or Sunnah (Derigs and Marzban, 2008).

Indeed, in the case of debt to asset ratio, Obaidullah (2005) reports that shari'ah scholars built their conclusion on a certain instance about which the Prophet was reported to have said: "one-third and one

–third is too much” on the issue of *Wassiyah* (Will). The prophetic citation clearly relates to heritage matters rather than financial transactions.

Concerning the 49% threshold, the maxim of majority in Islamic Law is used which states that “the majority deserves to be treated as the whole of a thing”. This implies that if securities represent composite assets, the rule of the dominating asset (having more than 50 percent) will be applied to the security (Mahfooz & Ahmed, 2014).

Consequently, divergences occur depending on the thresholds and the methodology adapted. These divergences persist because they have not been approved by a credible, independent and universal shari’ah authority such as the International Islamic Fiqh Academy which includes all Muslim countries. Concerning the AAOIFI’s methodology, although it is recognized as a major actor in Islamic finance standardization, it is not responsible for shari’ah rulings and it does not represent all Muslim countries.

That is why we will try through this paper to propose a new methodology based on financial theory concerning capital structure theories and optimal cash holdings theories for both Debt to Asset and Cash to Asset ratio. Germane to other screening ratios, we shall use AAOIFI’s guideline as it offers a relative consensus with regards to its representation and credibility Muslim countries.

The literature on shari’ah stock screen has extensively examined different loopholes within the existing screening methodologies (Habib & Ahmed, 2017; Ho, 2015; Pok, 2012; Khatkhatay & Nizar, 2007; Zainudin, Miskam & Sulaiman, 2014). Nevertheless, no alternative methodology has been proposed to integrate all the critics and modifications to the existing methodologies. That is why the present work aims mainly to propose a new methodology based on financial criteria which will take into consideration the specificities of each company and each portfolio in order to provide Muslim investors with the most efficient shari’ah-compliant portfolio.

The firm’s optimal debt-to-equity ratio might depend on the industry in which the firm operates or the historical levels of debt-to-equity. In this study, the aim is to estimate the optimal debt ratio for listed companies on the Moroccan stock market. In fact, the question of how much debt or cash a company can hold still goes under academic scrutiny whether an optimal level exists or not. The following table presents a worldwide overview of the level of debts which clearly points to the fact that debt holding is no arbitrary thresholds.

Figure 3. Capital Structure in Different Countries

Country	Total Debts to Total Assets (Book Value)
Developed Countries	
USA	58%
Canada	56%
Japan	69%
UK	54%
Germany	78%
Italy	70%
France	71%
Developing Countries	
Pakistan	66%
Malaysia	42%
South Korea	73%
South Africa	79%
Turkey	59%
Jordan	47%
India	67%

Source: Adapted from Wet (2011)

The relative trend to have a close level of debt to assets around similar countries may suggest the existence of a targeted intention for a certain level of debt among countries with similar geographic or economic features.

Indeed, Various factors have been cited in the literature such as the firm size and industry features to

explain the empirical deviation of capital structure initial framework. A vast empirical study has been conducted by Both and Al. (2001: 106) where they elaborated a common world model for capital structure determinants. Their model includes such variables as the average tax rate, business risk, profitability, firm size and market-to-book ratios among others. Their results show that this model supports the conventional country models. Nevertheless, the regression coefficients differ from a country to another which may stipulate the existence of other institutional determinants.

The firm's size is often cited as a main determinant for capital structure decisions. In fact, small companies have higher capital raising costs than big companies, so they prefer short-term borrowing, and hence the firm size has a negative relation with the short-term borrowing ratio (Tsai et al., 2011). Also, the business activity constitutes a major determinant in the capital structure as different companies have different business cycles, regulatory framework and assets categories. Indeed, Baxter (1963) confirms that companies within the same industry have more similar capital structures than companies from different industries.

In addition to that, Oraluck & Mohamed (2004) conducted a study on the Australian market to explore the relevance of the concept of optimal capital structure. They adopted the industry median as a benchmark for the optimal capital structure. Their findings indicated that the market reacts positively to announcements of financing events that lead to the firm's capital structure moving closer to their relative industry median debt-equity ratio.

Consequently, the use of a fixed threshold for the Debt to Equity ratio becomes irrelevant taking into consideration the determinants of debt levels. Accordingly, the proposed methodology will replace the fixed thresholds with the optimal levels as they reflect both the features of each company and the stock market.

Concerning cash levels thresholds, they are set arbitrary following the same reasoning as debt levels. The reason for using such screening ratio is to avoid investing in companies whose assets would be mostly represented by cash, which would consequently amount to buying not a stock but cash directly.

In fact, corporate cash holding has been at the center of academic debate in the recent years regarding its determinants and relation with the firm's value. Empirical studies have been conducted in different geographic areas on corporate cash holding since the late 1990s. one of the first studies conducted on this issue was by Opler & al. (1999) on US publicly listed firms. They have found that having strong growth opportunities, higher business risk along with firms of smaller size, hold more cash than other firms. The predominance of the size variable in determining cash holding levels can be explained from a perspective of the managers' influence over the firm. Anabestani & Shourvazi

(2014) suggest that larger corporations are assumed to hold more cash since their managers have more authority and liberty. On the other, they expect smaller firms to hold more cash as well. The absence of capital markets' supervision may push managers to have more freedom.

In addition to that, the volatility of future cash-flows accounts for cash holding level as reported by Bates, Kahle and Stulz (2009). They affirm that the average cash-asset ratio of industrial companies in the United States between 1980 and 2006 was more than doubled due to the increasing uncertainty over future cash-flows. Hu & Jiang (2005) came to the same conclusion on linking firm's size, cash-flow volatility and cash holding. They have found that a positive correlation exists between cash holding and firm's size. Their justification relates to the fact that the large companies generally have achieved significant success, so their cash flows are much more abundant.

On the existence of an optimal cash level, Martínez-Sola, García-Teruel and Martínez- Solano (2008) confirm the existence of an optimal level at 14% of whole assets and conclude that deviations from this optimal level reduce the firm's value. Accordingly, screening methodologies must respect the empirical evidence on the relative levels of cash depending on the abovementioned determinants. That is why incorporating optimal levels instead of fixed thresholds seems more relevant and solid.

To sum up, *maqasid al-shari'ah* aim to bring *maslahah* (public interest) to Muslims through their daily life practices including financial transactions. Thus, we have shown that adopting fixed thresholds would undermine Muslim investors' ability to constitute an efficient stock portfolio. The solution would be to incorporate optimal financial theory on capital structure and cash holding within existing screening methodologies in order to address the issues surrounding current methodologies.

Conclusion

The Islamic economic and finance system main added-value to the economic doctrine is to eliminate ribah, gharar, maysir and impermissible activities. Hence, shari'ah's screening processes on stock markets emphasize sector and financial screening criteria to ensure the permissibility of the investment from a shari'ah point of view. The existing screening methodologies are mainly based rigid thresholds which do not take into consideration the features of each stock market.

Academic literature has separately addressed some issues on screening methodologies such as the use of market cap instead of total assets. However, a distinctive points has been addressed by Nizar & Khatkhatay (2006) where they have suggested a system requiring compliant companies in industries such as hotels, shipping to regularly report their results and activities to the screening organization for a fee. This suggestion shall largely develop the range of shari'ah-complaint listed companies and, therefore, provide investors with diversified choices.

Accordingly, the second section presented a global insight on existing screening methodologies for shari'ah-compliant stock screening. It showed a global consensus over the two-tier methodology i.e. qualitative and quantitative filters. In addition, the chapter addressed the loopholes in these methodologies mainly the question of debt and cash ratio. Indeed, the thresholds adopted by most of SB i.e. 33% and 49% would penalize companies just because they belong into a specific industry.

Regarding the literature's approach to these two ratios, the debt ratio's threshold is seen to be liberal and should be brought under the level of 33%. The cash ratio is seen to be unjustified by Nizar & Khatkhatay (2006). Indeed, the level of the market price of a share is not due to a corresponding value for the company's cash hoard or receivables and payables. Thus, the use of such a screen does not serve any purpose.

The last section highlighted a first overview of our main objective to propose a new screening methodology based on an optimal financial structure. Indeed, our methodology will take into consideration each industry's feature and eventually, the thresholds will be flexible depending on the industry and the stock market.

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