From Screening to Compliance Strategies: The Case of Islamic Stock Indices with Application on "MASI"

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Abstract

The aim of this paper is to study the screening methodologies, as practiced by the mainstream Islamic stock market indices (ISI), through their application on the Moroccan All Shares Index (MASI). Thus, the possibility of providing the Casablanca stock exchange with its own Sharī'ah-compliant stock index will be studied. First, the specific processing to construct ISI will be explained. Then, the screening is performed based on the methodological rules set by the mainstream ISI. The use of screens, as recommended by these indices' Sharī'ah committees, leads to different decisions about rejection or acceptance of stocks in the constructed index. This leads, in turn, to a plurality of ISI even when created using the same starting investable universe. Finally, compliance strategies were presented and applied to the MASI.

Introduction

   Though Islamic finance is a relatively new industry, it is growing rapidly and has become a significant financial sector in many countries (see Ahmed et al., 2015). Assets in the Islamic finance industry have grown 500% in the last five years,

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reaching US$1.3 trillion in 2011 (Ajmi et al., 2014) and expected to reach US$1.8 trillion by 2016 (Walkshäusl and Lobe, 2012). According to IFSB (2014), the Islamic Financial Services Industry is estimated to chart a compound annual growth rate of 17.04% between 2009 and 2013 with assets expected to surpass US$2 trillion in 2014. This growth is due to development of Gulf countries which continue to advance rapidly with accumulation of oil wealth (Ho et al., 2013). On the other hand, relaxing the constraints on interest-based activities by Sharīʿah scholars led to the growth of Islamic mutual fund industry (Binmahfouz, 2012). This industry is by far the fastest-growing segment within the Islamic financial system (Hassan and Girard, 2010). Abul (2014) argued that most of the growth of the Islamic finance industry originates from non-Muslim countries.

Among the aspects of this growth was the launch of the ISI. Indeed, after *Rashid Hussain Bank Islamic Index* (RHBII), the first ISI, was launched in 1996, the mainstream index providers (e.g., Dow Jones, FTSE, MSCI and S&P) have expanded their offerings to include Sharīʿah-compliant indices. A Sharīʿah-compliant stock index tracks the performance of listed companies that are deemed compatible with the Sharīʿah's tenets. The Sharīʿah compliance is set and monitored by the index's *Sharia* committee. It is worth noting the pressing need for a stock market in Islamic finance industry because of prohibition on interest (Iqbal et Molyneux, 2005); hence the importance of studying ISI.

The screening process is an essential step in constructing any ISI; it is a process to move from conventional to ISI. The Islamic screening rules are interpretations of Sharīʿah rulings by the Sharīʿah supervisory committee of the index. The peculiarity of these interpretations is the fact they transform rules that are qualitative in essence to quantitative measures that can be used for screening. Thus, diverging views among the different Sharīʿah committees is unavoidable. This divergence leads, even when starting from the same universe (i.e., the conventional index), to different ISI compositions depending on the screening methodology that is used (see Kafou and Chakir, 2013 and 2014).

I. Stock Market Indices: a Theoretical Framework

General Background

A stock index tracks changes in the value of a hypothetical stock portfolio (Hull, 2009). Indeed, a stock market index can be viewed as a portfolio comprising all or part of existing securities on a financial marketplace. This portfolio is representative of one or more risk factors (Amenc, 2003). A sector index, such as industry, is

representative of this sector's risk. However, a stock index is not equivalent to a portfolio; the value of a portfolio is expressed in monetary terms. Typically, the value of the market portfolio (i.e., the market capitalization), can reach amounts of more than ten digits which is not convenient for market participants. The stock indices, by cons, are expressed in points that rarely exceed five digits. This is more convenient and makes comparison, calculation and tracking easier.

The main feature of indices is the fact of not being affected by adding or delisting of companies. This is not the case for a portfolio whose value changes for each purchase or sale of constituent stocks. The stability[1] and reducing of digits' number to handle for an index are achieved using the divisor[2].

Equity indices can be classified according to several criteria and the same index can simultaneously belong to several classes of indices. Thus, we can classify indices using their geographical scope to local, regional or global indices. A classification can also be performed based on the economic activities; this will result in sector indices. The size of the index constituent stocks can also serve as a classification criterion to distinguish indices of large, medium and small caps. There are also stock indices for emerging markets and others for developed markets. One can classify the stock indices according to weighting method into equal weighed, price weighted and market cap weighted. The last category encompasses indices that consider the market capitalization of each stock. Thus, the higher are the price and the number of outstanding shares more the company is represented in the index. The MASI, which is the starting universe to apply different screens, is a market cap weighted index.

Index Mathematics Methodology

A stock index level at time "t" can be written as follows:

$$index \ level_t = \frac{\sum Q_{it} \times P_{it}}{Divisor_t} \qquad (1)$$

The numerator on the right hand side of (1) is the price multiplied by the number of each stock in the index. The weight of a stock in the portfolio equals the proportion of the portfolio invested in the stock (Hull, 2009: p.59). The formula (1) is created by an adjustment of a *LasPeyres* index, which uses base period quantities (share

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[1] Stability here does not mean that a stock index is frozen, but it is only fluctuations of stocks prices in the index that will impact its level.

[2] The divisor is a key concept to understand how stock market indices work. For more details (see S&P Dow Jones Indices, 2012; Kafou and Chakir, 2013 and 2014).

counts) to calculate the price change (S&P Dow Jones Indices, 2012). The divisor represents the initial market value and sets the base value for the index[3].

Creating a stock market index involves a set of concepts such as floating, the capped weights and the divisor adjustment. For more details about how to construct stock indices, see S&P Dow Jones Indices (2012) and Kafou and Chakir (2013 and 2014).

II.   Islamic Equity Indices: from the Benchmark to a Sharī'ah-Compliant Index

Screening is the practice of including or excluding publicly traded securities from investment portfolios or mutual funds based on the religious and ethical precepts of the Sharī'ah (Hassan, 2000). The ISI are constructed from benchmarks (that form the starting universe) to which are applied financial screens (i.e., quantitative screens) and activity-based screens (i.e., qualitative screens). The Islamic screening is monitored by a Sharī'ah committee that identifies eligible stocks to be part of the ISI.

Activity-Based Screening

The Islamic investment has first to be in line with the Sharī'ah rules which forbid some activities. However, it is worth mentioning that most types of trade are permitted in Islam, where prohibition is the notable exception (El-Gamal, 2000). The first step in the screening process is qualitative. Nevertheless, it is necessary to distinguish between main and secondary activity.

a) The Main Activity

When the screening is done, it is necessary to exclude companies operating in the following sectors:

- ❖   Alcohol;
- ❖   Tobacco;
- ❖   Pork-related products;
- ❖   Conventional financial services (e.g., banking, insurance, etc.);
- ❖   Weapons and defense; and
- ❖   Entertainment (e.g., hotels[4], casinos and gambling, cinema, music, etc.).

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[3] For the MASI, the base market capitalization is that of 31/12/1991.
[4] Except income from hotels operating in Saudi Arabia (see MSCI, 2011).

And all activities considered illegal by Sharī'ah rulings. The ISI use nomenclatures with the codes of different sectors to rank companies and decide their compliance with Sharī'ah (see El Khamlichi, 2012).

b) The Secondary Activity

Companies in sectors considered unlawful by the Islam are unanimously considered *ḥarām* regarding the sale and buy of their shares. However, if a company has exceptional income from *ḥarām* activities including the investment of cash excess in interest bearing instruments, opinions are divergent. Some Sharī'ah scholars consider investment in these companies' shares as *ḥarām*, while others issued a legal opinion (i.e., *fatwa*) that allows this investment under two conditions:

- ❖ Interest income and income from non-compliant activities must be less than 5 %[5] of the total income; and
- ❖ To purify dividend.

1) The Ratio-Based Screening

The ratio-based screening considers the financial structure of the issuing companies. Therefore, a series of ratios has been established. In this section, we will mainly focus on the ratios used by the mainstream ISI including: *Dow Jones Islamic* (DJIMI), *S&P* Sharī'ah, *Islamic MSCI*, *FTSE* Sharī'ah and *Islamic STOXX*.

a) Debt Level

Table 1 resumes the ratios used by the mainstream ISI to screen the Indebtedness of a company.

One can notice that, as numerator, all committees use total debt. Besides, the threshold is almost the same for the five indices. The 33% threshold is not fixed either by the Qur'ān or the *Sunna,* but set by the Muslim jurists. The 33% limit is a questionable extension of the threshold from which shareholders have a veto at the general meetings (Cekici, 2009), or of the *Hadith*: "*One-third, and the one-third is too much*" (Binmahfouz, 2012: p. 89; El-Gamal, 2000; Obaidullah, 2005). Critics of the one-third rule assert that it involves an out-of-context use of the above *ḥadīth* (Obaidullah, 2005). Indeed, this is clearly an out-of-context use of the *ḥadīth*, and

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[5] Note that for the S&P and Dow Jones, any involvement in sectors that are excluded when screening the main business results in screening out from these two indices.

jurists do not claim that it is used as a legal proof, but rather as a comforting rule of thumb (El-Gamal, 2000).

Table-1
Debt Screens of the Mainstream ISI

Index	Debt screen
Dow Jones Islamic	$\dfrac{\text{Total debt}}{\text{Trailing 24-month average market capitalization}} < 33\%$
S&P Sharī'ah	$\dfrac{\text{Total debt}}{\text{Trailing 36-month average market capitalization}} < 33\%$
MSCI Islamic	$\dfrac{\text{Total debt}}{\text{Total assets}} < 33,33\%$
FTSE Sharī'ah	$\dfrac{\text{Total debt}}{\text{Total assets}} < 33\%$
STOXX Islamic	$\dfrac{\text{Total debt}}{\max(\text{Total assets, Total market capitalization})} < 33\%$

Source: by authors based on the Index methodology guide of the considered indices (FTSE, 2011; MSCI, 2011; S&P, 2011; STOXX, 2013; Dow Jones Indexes, 2012)

The debts to screen are those that produce interests. Thus, it should not include the trade payables, outstanding salaries, taxes owed to the government and all other debts not generating interests.

In the denominator, by cons, two trends are revealed: indices that use the market capitalization and others using total assets. The use of market capitalization faces three major problems (see Ali, 2005: pp.26-27; Khatkhatay and Nisar, 2007). The market value of a security may be driven by feelings about future earnings and movements regardless of the company's fundamentals. In addition, the market conditions, whether they are favorable or unfavorable, can lead to volatility in the market value of a company. Thus, a company's capitalization may experience considerable variations while its managed assets remain the same. Finally, the market capitalization cannot be used to check the compliance of private companies. However, the use of the market capitalization has the advantage of allowing a continuous screening of listed stocks. The use of total assets, in turn, is not a suitable measure because it depends on the accounting standards the company chooses to

evaluate its assets. It is worth mentioning that using the higher of either total assets or market capitalization will broaden the investment universe.

Another approach proposed by Khatkhatay and Nisar (2007) is to use a denominator based on the objective of the screen. Thus, the use of capitalization to calculate the liquidity ratio is more suitable given its objective to ensure that liquid assets are traded at par (i.e., the rule of *ṣarf* is observed) (Binmahfouz, 2012). For the debt screen, using total assets is more suitable, since the objective is to control the company's main source of financing (Binmahfouz, 2012). However, in the Moroccan case, the use of total assets is hindered by the frequency of the financial statements' publication. These statements are generally published yearly. This will make the index review (see II.3) also annual which is not practical.

b) Liquidity Screen

Table 2 resumes the ratios used by the mainstream ISI to check the liquidity level of a company.

Table-2
Liquidity Screens of the Mainstream ISI

Indices	Liquidity screen
Dow Jones Islamic	$\dfrac{\text{Cash and interest-bearing securities}}{\text{Trailing 24-month average market capitalization}} < 33\%$
S&P Sharī'ah	$\dfrac{\text{Cash and interest-bearing securities}}{\text{Trailing 36-month average market capitalization}} < 33\%$
MSCI Islamic	$\dfrac{\text{Cash and interest-bearing securities}}{\text{Total assets}} < 33,33\%$
FTSE Sharī'ah	$\dfrac{\text{Cash and interest-bearing securities}}{\text{Total assets}} < 33\%$
STOXX Islamic	$\dfrac{\text{Interest-bearing assets}}{\max(\text{Total assets, Total market capitalization})} < 33\%$

Source: by authors based on the Index methodology guide of the considered indices

The liquidity screen removes companies with an overwhelming part of assets held in cash and interest bearing securities. The stock of these companies would have a quasi-monetary underlying assets and consequently eligible for application of the

ribā prohibition rules (Cekici, 2009). Indeed, negotiating such a company's stock equals an exchange of money for money. This exchange is only possible, within the framework of Islamic finance, hand-to-hand and at par. Otherwise, the transaction falls under the forbidden *ribā*.

c) Accounts receivable screen

Table 3 resumes the screens used by the mainstream ISI to control receivables level of a company.

Table-3
Accounts Receivable Screen of the Mainstream ISI

Indices	Receivables screen
Dow Jones Islamic	$\dfrac{\text{Accounts receivable}}{\text{Trailing 24-month average market capitalization}} < 33\%$
S&P Sharī'ah	$\dfrac{\text{Accounts receivable}}{\text{Trailing 36-month average market capitalization}} < 49\%$
MSCI Islamic	$\dfrac{\text{Accounts receivable}}{\text{Total assets}} < 33{,}33\%$
FTSE Sharī'ah	$\dfrac{\text{Accounts receivable} + \text{cash}}{\text{Total assets}} < 50\%$

Source: by authors based on the Index methodology guide of the considered indices

The first observation is that the Sharī'ah committee of STOXX does not use this screen. The receivables screen is interpreted as a yardstick for characterizing "core business" of the company in question. In this regard, if the majority (more than 50 percent) of a company's assets are financial, rather than real, the main business of the company is deemed to be financial dealings, and it is thus excluded (El-Gamal, 2006: p.127).

The *FTSE* Sharī'ah is the only index using in the numerator, besides receivables, available liquidity. This divergence in the ratio's calculation components and the tolerance threshold is mainly due to the need to consider the operational needs of companies.

2) Periodic Review[6]

The index composition is reviewed periodically by the managers of the index by deciding the new companies to include and those to exclude from the index. Thus, companies must consistently go through the screening. An audit of Sharīʿah compliance is performed quarterly in March, June, September and December for the Dow Jones Islamic Indices, FTSE Sharīʿah and Islamic STOXX. For the S&P Sharīʿah, the review is conducted every month.

3) Criticism Addressed to the Islamic Screening:

a) Financial Viability

One of the criticisms to the screening is to bring down the investors' universe which leads to low-performing indices. However, there is no consensus about the relative performance of ISI. Thus, from the used overall period, Atta (2000), Hakim and Rashidian (2002), Hussein (2005), Abul et al. (2005), Hussein and Omran (2005), Hooi and Parsva (2012), Affaneh et al. (2013) and Ho et al. (2013) supported the thesis of outperformance of ISI compared to their conventional benchmarks. Nevertheless, Zamri and Haslindar (2002) and Al-Khazali et al. (2013) found that ISI underperformed conventional ones. On the other hand, Hakim and Rashidian (2004), Hussein (2004), Albaity and Rubi (2008), Guyot (2008), Girard and Hassan (2008 and 2010) and Lobe et al. (2012) inferred that no significant difference in performance exists between ISI and their conventional counterparts.

Another approach used to study the Islamic indices' performance is reasoning through market cycles and geographical localization. Thus, Zamri and Haslindar (2002), Hussein (2004 and 2005[7]), Hussein and Omran (2005) and Girard and Hassan (2010) found that ISI underperform their conventional counterpart during the bear market and outperform them during the bull market. The ISI underperforming conventional ones during the bear market was an agreed characteristic of them. Authors explained it by the exclusion of liquor companies (Hussein, 2004) and the event of September 11th (Hussein and Omran, 2005). The subprime crisis was an inflection point of this belief, the ISI performed better than conventional indices (Lobe et al., 2012; Ho et al., 2013). Lobe et al. (2012) argued that "*Islamic screens*

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[6]Note that here we consider the review on the grounds of Sharia compliance. Other events occurring at different times during the year can raise the need to review an index; such as the delisting of a company, bankruptcy and companies merge.

[7] Note that in this study, during the second bull market period, the ISI underperformed their conventional benchmarks.

might not affect unconditional performance through the cycle, but might well affect performance conditional on the cycle. However, it is hard to tell ex ante [...]". The outperformance of ISI during the recent financial crisis may be explained by the exclusion of financial sector, but this performance is not guaranteed for the next downturn. Adding a geographical dimension to the analysis, Walkshäusl et Lobe (2012) found that ISI outpaced their conventional counterparts in the developed market but the inverse is true for emerging markets.

b) Social Responsibility

It is noticeable that screening rules applied by the Sharīʿah committees do not include social concerns and are exclusively based on exclusion (i.e., negative screening). Thus, human rights violations and environmental damage are not considered in deciding the Sharīʿah compliance of a company. This raises reasonable questions like how a company involved in violations of human rights and serious environmental damage may be conform to Sharīʿah? Isn't it contrary to the principles of Sharīʿah to disrespect the human rights and cause environmental damage? (Binmahfouz, 2012). This is surprising because it contradicts the fundamental principles of Islamic finance and investment as a socio-economic and financial system that requires the integration of ethics and morals in all economic activities (Binmahfouz, 2012: p.98).

c) The Lack of Consensus and Stability of Screening Rules

As it can be noticed from tables 1 to 3, each index uses its own screening rules. The calculation method and the thresholds differ from one index to another. In fact, the tolerance threshold for receivables ranges between 100% and 33%, while the debt and liquidity ones are less dispersed. It is worth noting that some Sharīʿah committees, such as the Sharīʿah Advisory Council (SAC) in Malaysia, do not apply any quantitative screens (see Azhar et al., 2010).

Furthermore, the screening ratios are not the same from one period to another for the same index. This instability is another criticism to the screening process. For example, during the subprime crisis, the DJIMI and the S&P Islamic indices increased the moving average of the market capitalization divisor from trailing 12 months to 24 and 36 respectively (see Binmahfouz, 2012). This was done to further smooth the ratio. Another example of evolving screening rules is the changing of denominator from total assets to the market capitalization by DJIMI for the receivables screen (Binmahfouz, 2012). These changes can render a Sharīʿah-compliant stock non-compliant and vice versa while the issuing company's structure

has remained the same. All these elements will create confusion among investors guided by their faith.

d) An Automated Screening

Screening is usually performed automatically. Thus, based on an industry classification, the screening excludes automatically companies whose activity code corresponds to the sectors listed above without any other consideration. This treatment will automatically exclude an Islamic bank or a Takaful insurance company because they belong to the category of Banking and Insurance (Siddiqui, 2011). Therefore, many experts propose to conduct screening at the company's level not based on the sector (Alqahtani, 2009). In this perspective, Reuters and IdealRatings launched in 2011 the Research-Based screening indices. Unlike the automated screening, the Research-Based screening examines the various sources of non-compliant income rather than a broad sector classification. Moreover, this screening is based on research of financial data and does not count the Sharī'ah-compliant debt such as *ṣukūk* in calculating the debt screen (Ghoul, 2012).

III. Applying the Screening to the MASI

The MASI is a comprehensive index that includes all stocks listed on the Casablanca Stock Exchange (BVMC). The MASI was calculated for first time in 1991 and the transition to floating was in December 2004. The MASI consists currently of 76[8] companies spread across different industries. The last IPO, at the time of writing this paper, concerns TOTAL MOROCCO which dated on 29/05/2015.

1) Research Questions and Methodology

a) Research Questions

This work is articulated around two main research questions:

Q1: the ISI of the BVMC, in case of existence, is it unique or depends on the used screening rules?

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[8] Note that several changes occurred since the present study as the delisting of FERTIMA, SCE and SOFAC and an IPO of TAQA MOROCCO. On the other hand, a Public Offer of Withdrawal by CGI is expected.

The first question will allow confirming an existing result in the Islamic investing literature, in the Moroccan context, which states that the composition of ISI depends on the used screening rules. If ISI composition depends on the screening methodology, it is important to know:

Q2: What are the most important areas of concordances and discrepancies in the screening process?

This question seeks essentially to identify screens and sectors that have the highest rate of discrepancies.

b) Methodology

To answer the research questions, we took a sample of 76 companies that represents all companies listed on the BVMC. Data for these companies (i.e., sector, summary statements, quotation and market capitalization) are collected from the BVMC's website.

The collected data are then combined to consider only information that is necessary to perform the qualitative screening or to calculate the needed ratios. After this step, the screens recommended by the Sharī‘ah committees of the mainstream ISI are applied to get the Islamic version of the MASI.

2) Applying Screens

a) Sector-based Screening

The first step in constructing an ISI is to check whether the main activity of every company is Sharī‘ah-compliant. Companies excluded because of their main business are shown in table 4.

b) Quantitative Screening

⌗ The share of *ḥarām* revenues

Details on secondary activities are not available on the BMVC's website. Thus, screening based on secondary activity, belonging to the qualitative screening, is not possible. In this section, we will rather focus on the portion of interest income in the total turnover. This share must not exceed 5%. The application of this screen on the

companies that passed the qualitative screening allowed detecting companies with interest income exceeding that threshold.

Table-4
The BVMC's Companies Screened out because of the Activity Sector

Company	Sector	Nbr. shares	Price	IWF	Free Mar Cap	Weight
WAFA ASSURANCE	Insurance	3 500 000	2 925,00	0.25	2 559 375 000,00	2.66%
CNIA SAADA	Insurance	4 116 874	1 000,00	0.25	1 029 218 500,00	1.07%
ATLANTA	Insurance	60 190 436	63.36	0.20	762 733 204,99	0.79%
AGMA LAHLOU-TAZI	Insurance	200 000	2 370,00	0.25	118 500 000,00	0.12%
ATTIJARIWAFA BANK	Banking	201 243 086	319.50	0.25	16 074 291 494,25	16.69%
BCP	Banking	173 141 923	192.00	0.25	8 310 812 304,00	8.63%
BMCE BANK	Banking	179 463 390	197.50	0.20	7 088 803 905,00	7.36%
BMCI	Banking	13 278 843	770.00	0.20	2 044 941 822,00	2.12%
CIH	Banking	26 608 085	231.00	0.20	1 229 293 527,00	1.28%
CDM	Banking	9 223 916	579.90	0.15	802 342 333,26	0.83%
BRASSERIES DU MAROC	liquor	2 825 201	2 500,00	0.10	706 300 250,00	0.73%
RISMA	Hotels	7 882 935	184.95	0.20	291 589 765,65	0.30%
EQDOM	Conventional financial service	1 670 250	1 620,00	0.25	676 451 250,00	0.70%
SALAFIN	Conventional financial service	2 394 497	560.00	0.25	335 229 580,00	0.35%
MAGHREBAIL	Conventional financial service	1 025 320	858.90	0.20	176 129 469,60	0.18%
TASLIF	Conventional financial service	21 472 500	36.00	0.15	115 951 500,00	0.12%
MAROC LEASING	Conventional financial service	2 776 768	383.05	0.10	106 364 098,24	0.11%
AXA CREDIT	Conventional financial service	600 000	328.80	0.15	29 592 000,00	0.03%
SOFAC	Conventional financial service	1 416 664	350.00	0.05	24 791 620,00	0.03%
DIAC SALAF	Conventional financial service	1 053 404	26.25	0.45	12 443 334,75	0.01%
Nbr.		20		Total excluded weight		44.11%

Source: by authors

At the end of the sector-based screening stage, 20 companies have been excluded representing 44.11% of the free float market capitalization.

Table-5
The BVMC's Companies Screened out because of Impure Income

Company	Interest revenue	Total turnover	%	weight
ALLIANCES	103,784,740.74	266,546,007.10	39%	1.51%
MINIERE TOUISSIT	77,533,253.47	675,756,131.65	11%	0.72%
DELTA HOLDING S.A	4,450,641.35	73,265,400.38	6%	0.68%
ZELLIDJA S.A	4,615,867.76	8,844,601.30	52%	0.02%
Nbr.	4	Excluded weight :		2.93%

Source: by authors

✄ Debt screening

The debts screening has detected three types of companies:

❖ Companies accepted in the index composition, regardless of used screen for debts;
❖ Companies excluded, regardless of used screen for debts; and
❖ Companies that may be excluded or accepted according to used screen for debts.

Existing conflict (i.e., acceptance or rejection) is due to the fact that divisor is not the same: some screens use the market capitalization whereas others use total assets or the higher of the two as for STOXX. Thus, the first result of this work is that the composition of the ISI depends on the used screens. From now, we will only exclude companies that are screened out, regardless of the used ratio.

Table-6
The BVMC's Companies Excluded Regardless of Used Debt Screen

Company	Market Cap	Total Assets	T24MAMC	T36MAMC	Total Debt	Debt screen (DJIM)	Debt screen (S&P)	Debt screen (MSCI/FSTE)	Debt screen (STOXX)
HOLCIM (Maroc)	6,378,150,000	4,648,797,110	6,179,184,966	5,823,926,144	2,243,951,561	0.36	0.39	0.48	0.35
ALUMINIUM DU MAROC	533,051,376	827,253,950	556,194,784	501,085,842	314,873,570	0.57	0.63	0.38	0.38
SNEP	420,600,000	1,179,564,936	404,934,579	396,806,061	450,497,942	1.11	1.14	0.38	0.38
LABEL VIE	3,817,915,500	361,804,730	3,806,776,015	3,807,386,414	1,893,547,141	0.50	0.50	5.23	0.50
STOKVIS NORD AFRIQUE	344,818,125	1,056,643,291	361,393,672	340,407,118	438,950,376	1.21	1.29	0.42	0.42
FERTIMA	165,600,000	629,808,368	161,519,112	146,452,789	315,803,318	1.96	2.16	0.50	0.50
DOUJA PROM ADDOHA	15,781,500,000	34,243,196,450	15,427,137,944	14,471,051,397	11,405,205,935	0.74	0.79	0.33	0.33
SAMIR	3,316,436,636	35,086,143,700	3,470,777,215	3,470,429,087	20,521,711,950	5.91	5.91	0.58	0.58
MED PAPER	58,365,743	628,481,842	58,310,289	53,481,217	355,505,007	6.10	6.65	0.57	0.57
Nbr.				9		Exluded weight:			12.69%

Source: by authors

The following table summarizes the results of concordances and discrepancies between different screens. The green areas show the number of companies being accepted or rejected jointly by each pair of screens (i.e., consensus). The gray areas display companies which raise mismatch between each pair of screens. Elements on the diagonal are the number of companies that passed the debt screen of the index, divided by the number of companies resulting from the previous step of screening.

It is noticeable that the debt screen of DJIMI and S&P gives the same results. The same thing is true for FTSE and MSCI. The greatest divergence, in terms of debt screening, is recorded between DJIMI (and thus S&P) and FTSE (and thus MSCI). This is due to the nature of divisor in both cases. Indeed, there is a crossing from the average market capitalization to total assets. Using the higher of either total assets or market capitalization may seem like a solution to ensure harmony between different screening ratios. Thus, the Islamic STOXX would be in line with other ISI. However, it is worth noting that even for indices using the market capitalization, the divisor used is not the same. Some indices use the average capitalization over 24 months, while others use the average over 36 months. Another case is the use of the calculated market capitalization at the time of screening. The averaging of market capitalization causes the smoothing of the ratio and thus leads to a greater stability of the index composition. The STOXX has lower concordance with the indices using market capitalization than those using total assets[9].

Table-7
Results of the Debt Screening

	DJIMI	S&P	FSTE	MSCI	STOXX
DJIMI	31/52	0	13	13	12
S&P	52	31/52	13	13	12
FSTE	39	39	42/52	0	1
MSCI	39	39	52	42/52	1
STOXX	40	40	51	51	43/52

Source: by authors

The following graph illustrates the concordances and discrepancies by activity sector. A concordance means that the company is subject to consensus (retention or rejection from the index), regardless of the used screen. The discrepancy is to understand in the sense there is a case in which decision on a company (i.e., retention or rejection) is not the same for a pair of screens.

Given the limited number of companies in the MASI before screening and thus the limited number of companies by sector, it is difficult to rule definitively on the sectors leading to divergence in debt screening. Arguably, firms in the Construction and Building Materials, Consumer Goods, Distributors and

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[9] Note that 39 out of 52 companies in the screening universe had total assets greater than the market capitalization.

Technology recorded the highest number of concordance cases. This is because companies in these sectors have market capitalization that is close to total assets.

⧫ Liquidity Screen

For liquidity screen, the three previously met cases were found. The liquidity screen allows to definitively excluding one company.

Graph-1
Concordances and Discrepancies for Debt Screen by Activity Sectors
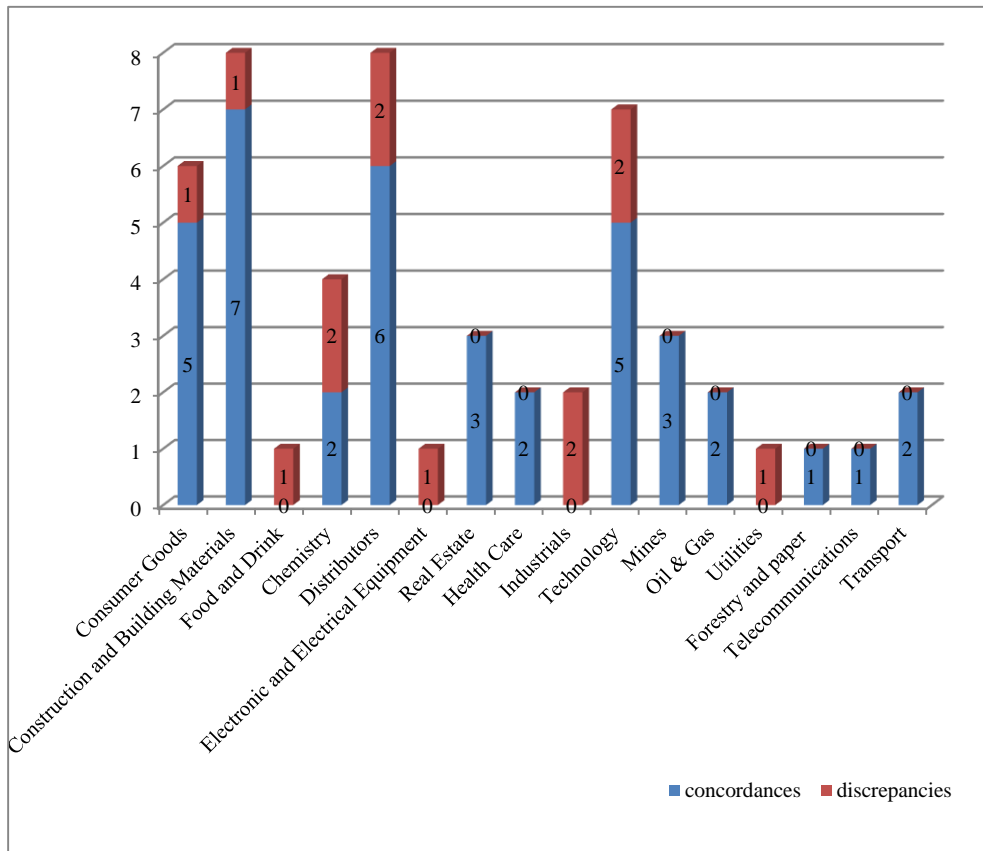
Source: by authors

Table-8
The BVMC's Companies Excluded Regardless of Used Liquidity Screen

Company	Market Cap	Total Assets	T24MAMC	T36MAMC	IBS*	cash
M2M Group	140,340,887	174,656,112	133,847,733	135,976,937	59,322,765	29,914,973.87
Liquidity screen (DJIM)	Liquidity screen (S&P)	Liquidity screen (MSCI/FSTE)	Liquidity screen (STOXX)	Nbr.	1	
0.667	0.656	0.511	0.340	Weight	0.04%	

* IBS are interest bearing securities
Source: by authors

As for the debt screen, table 9 summarizes the concordances and discrepancies detected when applying the liquidity screen.

Table-9
Results of Applying the Liquidity Screen

	DJIMI	S&P	FSTE	MSCI	STOXX
DJIMI	39/43	0	3	3	3
S&P	43	39/43	3	3	3
FSTE	40	40	40/43	0	2
MSCI	40	40	43	40/43	2
STOXX	40	40	41	41	42/43

Source: by authors

As for debt screens, besides the DJIMI and S&P, FTSE and MSC give the same results for liquidity screening. The highest divergence for liquidity screen is recorded between DJIMI (and thus S&P) and FTSE, MSCI and STOXX on the other hand. Yet, the number of discrepancies is relatively smaller than the one encountered when screening debts[10]. This can be explained by the fact that IBS and cash represent, for the BVMC's companies, negligible amounts compared with market capitalization and total assets. Graph 2 shows the concordances and discrepancies by activity sectors.

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[10] Note that although the companies' number was reduced by debts screening, this is true since the previous universe was reduced only by companies that are excluded by all screening methodologies. Thus, it is the number of concordance cases that was reduced.

Graph-2
Concordances and Discrepancies for Liquidity Screen by Activity Sectors
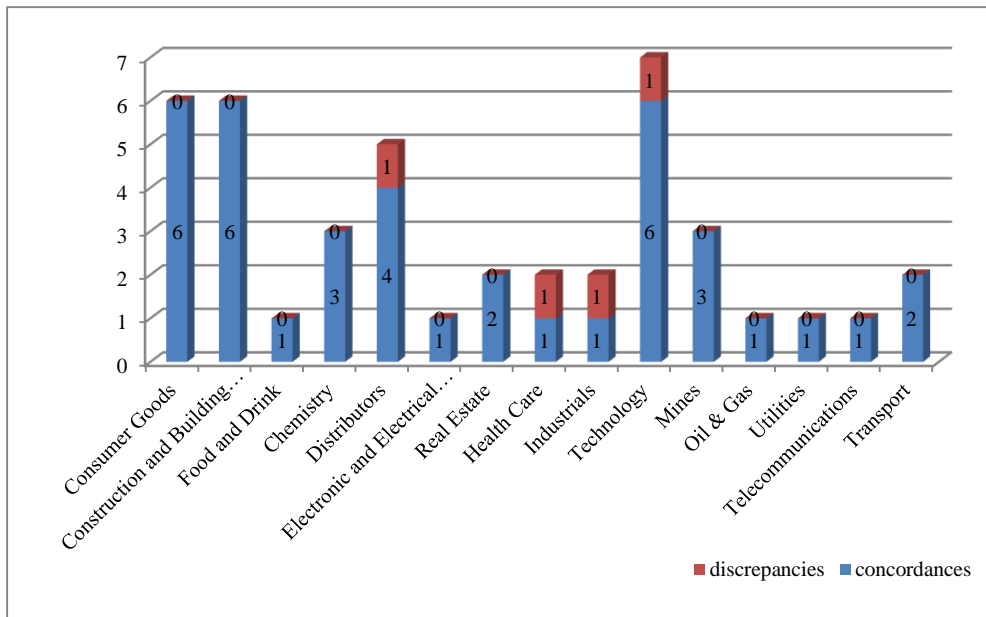
Source: by authors

It is noted that sectors of Construction and Building Materials, Consumer Goods, Distributors and Technology continue to record the highest number of concordance cases.

⌗ Receivables Screen

For receivables screen, the three cases met in screening debts and liquidity still persist. However, receivables screen allowed screening out definitively five companies.

The first finding is the absence of a pair of screens giving the same result. The highest discrepancy is recorded between the DJIMI and STOXX; it is of 21 cases. This difference is due to the absence of receivables screen for STOXX. Even for indices using this screen, the discrepancy cases are of 14 companies between DJIMI/S&P in one hand and MSCI on the other hand. This can be explained by differences in calculation components and tolerance thresholds. In addition,

screening according to DJIMI and S&P shows some differences even though both use the average market capitalization. Thus, we can notice that the period over which the moving average is calculated causes some differences between the two indices. The longer the duration is, the greater is the smoothing. This smoothing allows including more companies in the index. The receivables screen is by far the one that causes discrepancies. Graph 3 shows the concordances and discrepancies by activity sectors.

Table-10
The BVMC's Companies Excluded Regardless of Used Receivables Screen

Company	Market cap	Total Assets	T24MAMC	T36MAMC	Receivables	Cash	receivables screen (DJIM)	receivables screen (S&P)	receivables screen (MSCI)	receivables screen (FSTE)
HPS	206,858,106	275,880,660	202,672,225	194,580,011	124,483,547	16,344,276	0.61	0.64	0.45	0.51
S.M MONETIQU	151,400,000	168,411,082	150,981,378	141,230,986	97,219,750	4,982,352	0.64	0.69	0.58	0.61
MICRODATA	188,160,000	156,591,923	195,317,425	195,928,719	102,800,225	24,505,794	0.53	0.52	0.66	0.81
INVOLYS	47,839,500	83,050,098	45,872,228	42,464,693	40,090,925	16,581,614	0.87	0.94	0.48	0.68
IB MAROC.COM	45,923,460	334,511,895	46,416,397	47,190,597	228,138,244	701,522	4.92	4.83	0.68	0.68
	Nbr.		5.00				Excluded weight :			0.29%

Source: by authors.

As for debt and liquidity screens, table 11 summarizes the results of receivables screens.

Table-11
Results of Applying Receivables Screen

	DJIMI	S&P	FSTE	MSCI	STOXX
DJIMI	21/42	4	9	14	21
S&P	38	25/42	9	14	17
FSTE	33	33	28/42	7	14
MSCI	28	28	35	35/42	7
STOXX[11]	21	25	28	35	42/42 (N/A)

Source: by authors

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[11] The number of companies accepted in this index is the same as at the end of liquidity screening. The concordance between STOXX and other indices is nothing but the number of companies included in these latter. Similarly, the discrepancies are calculated as the companies rejected by a given screening methodology.

Graph-3
Concordances and Discrepancies for Receivables Screen by Activity Sectors
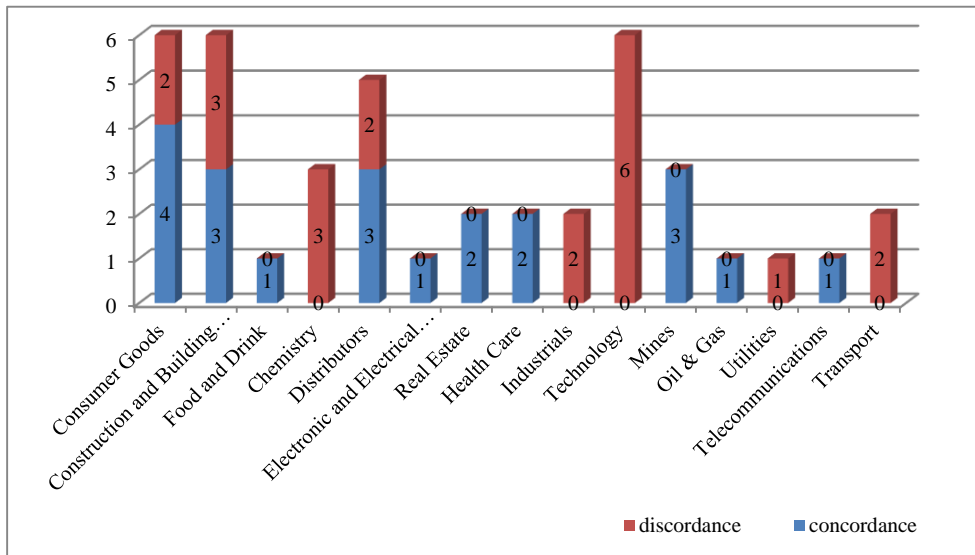
Source: by authors

For receivables screen, it is difficult to comment on an industry trend regarding concordances and discrepancies. However, it is noticeable that the Technology sector reversed its trend. Indeed, given the importance of receivables in this sector, the four variants of screening exclude 5 out of 6 companies operating in this sector (see table 10 above). Meanwhile, the STOXX screening methodology keeps all companies because it does not perform any receivables screen.

3) The Composition of Islamic MASI (IMASI)

After applying different screens, we will continue with describing the BVMC's ISI we called "IMASI". This index will include, according to the screening methodology, a more or less important number of companies. The following table summarizes the IMASI's composition according to the used screening:

One can notice that even if screening leads to different results, the free float market capitalization of the different variants of the IMASI is almost the same. This is due to the small market capitalization of the companies raising conflict between

the different families of indices. For a comprehensive details about the IMASI see Kafou and Chakir (2013 and 2014).

Table-12
The IMASI's Composition According to the Screening Methodology

Screens	Nbr. of Companies	Weight to the MASI's free float market cap
DJIMI	21	38,69 %
S&P	25	39.02 %
FSTE	28	39.26 %
MSCI	35	39.70 %
STOXX	42	40.22 %

Source: by authors

IV. Compliance Strategies

The compliance strategies are designed to combine the different basic screening rules. Thus, from these basic rules, we define other strategies that meet specific objectives. These latter may be related to portfolio management (i.e., performance), the need to further refine the screening (i.e., to take a conservative approach) or other objectives pursued by the organization or the investment funds.

1) Mathematical Notation:

Let "S" be the set of basic screening strategies and "G" the set of all financial screens within these strategies. A basic strategy is defined as a set of guidelines $G_s \subset G$. For the present study; noting s (a) the screening strategy adopted by the index "a" we will have:

- ❖ S={s (DJIMI), s (S&P), s (FSTE), s (MSCI) and s (STOXX)};
- ❖ G= {G_{DJIMI}, $G_{S\&P}$, G_{FSTE}, G_{MSCI}, G_{STOXX}};
- ❖ G_{DJIMI}= {Debt screen $_{DJIMI}$, Receivables screen $_{DJIMI}$, liquidities screen $_{DJIMI}$}; and
- ❖ T (DJIMI)={ 33 %, 33 %, 33 %}.

We can see that "G" is nothing more than the combination of tables 1 through 3. Let's $g \in G$ be a screening rule, we have to calculate a financial ratios $r_i(g)$ for

each asset "i". The calculated ratio is then compared with the threshold value T (g). Thus, we need to control a set of constraints as follows:

$$r_i(g) \leq T(g)$$

Thus the weight of each asset in the index (or the portfolio) will be equal to 0 if $r_i(g) > T(g) \ \forall i \in I$, with I being the resulting investment universe from the qualitative screening. Derigs et Marzban (2009) introduced four compliance strategies; namely *Ijmā'*, liberal, majority and "best of". These strategies will be discussed in the following sections.

2) The Consensus or *Ijmā'* Strategy

In this strategy, we choose the portfolio that fulfills all requirements of all basic screening strategies. Thus, a stock is said to be complaint in the sense of *ijmā'* strategy if and only if:

$$r_i(g) \leq T(g) \ \forall i \in I \ \forall g \in G$$

Applying this strategy on MASI gives a total number equal to 21 companies to include in the index. This represents 24.78% of the free float market capitalization of the MASI. The consensus strategy and the DJIMI screening give almost identical results, confirming its reputation of being the most conservative among the ISI (Alqahtani, 2009).

Graph-4
Index Composition According to the Consensus Strategy
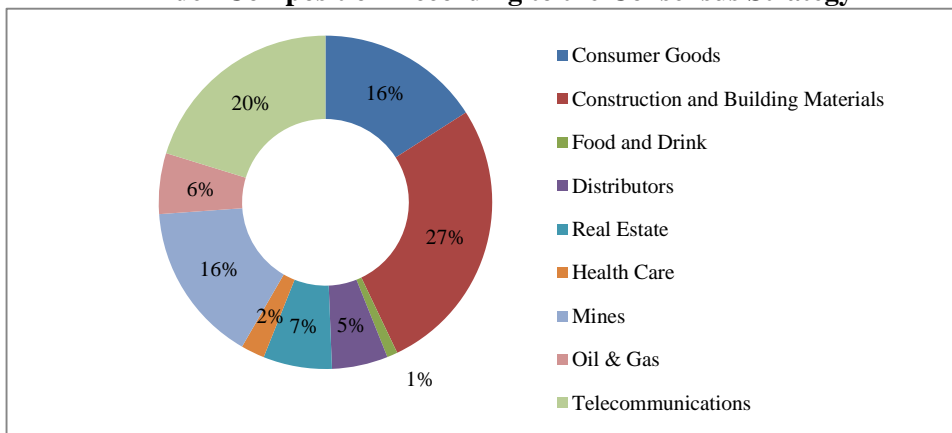
The findings show that only 9 sectors are represented in the index created using the consensus strategy. The largest share of index capitalization is made up by

Construction and Building Materials (27%) followed by Telecommunications (20%).
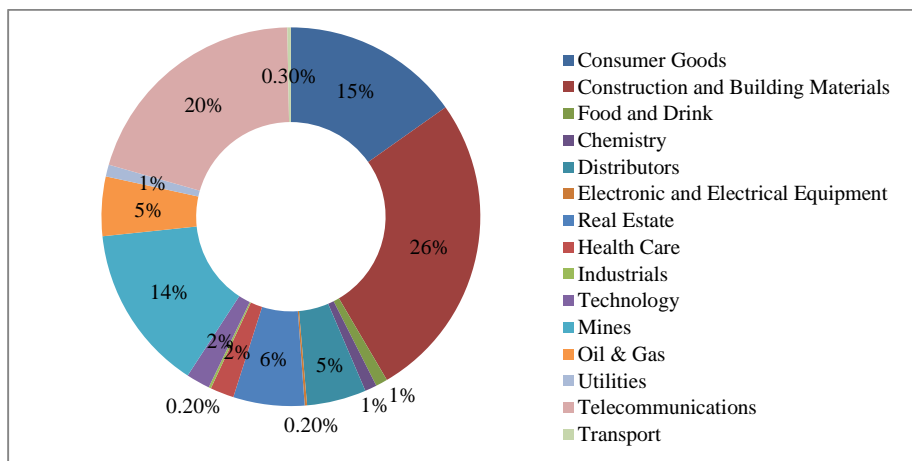
3) The Liberal Strategy

This strategy consists of reducing the investable universe of assets that are jointly defined as non-compliant by all basic screening strategies. In this case, compliance is defined as follows:

$$\forall i \in I \ \exists s / \forall g \in G_s \ : r_i(g) \leq T(g)$$

Thus, "*I*" will be reduced by companies in tables 6 and 8. This strategy is very useful, especially when the *card(I)*[12] is too small. In this case, the liberal strategy will allow including a number for stocks that permits a reasonable diversification.

This strategy, in this study, produces results identical to those got using the STOXX screens. It allowed including 42 companies representing 40.22% of the free float market capitalization of the BVMC. The sector allocation using the liberal strategy is given by the following graph:

Graph-5
Index Composition According to the Liberal Strategy

Source: by authors

We note a greater variety of sectors in the index constructed using the liberal strategy. The Construction and Building Materials sector continues to grab the largest share of the capitalization (26%) followed by Telecommunications (20%).
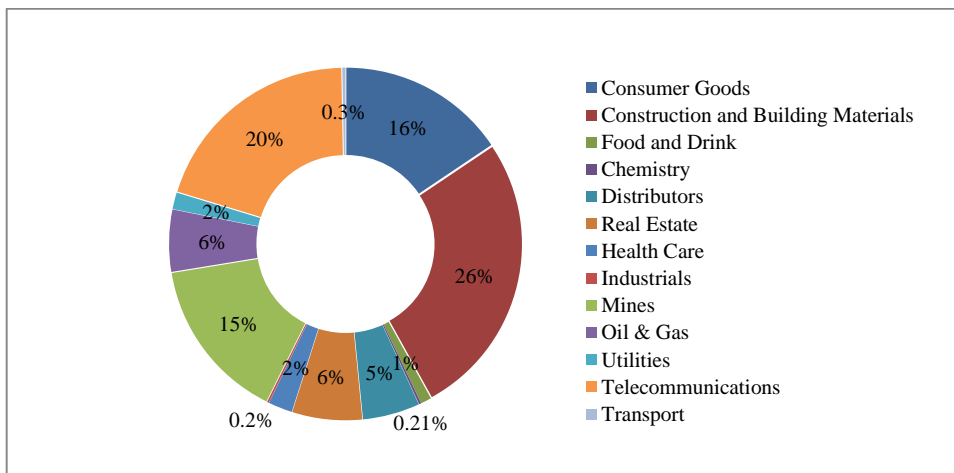
4) The Majority Strategy:

This strategy consists in keeping the portfolio of companies that are accepted by most of the screening guidelines. This strategy can be formalized as follows:

$$\forall i \in I \ \ for \ H \subset S \ / \ \forall s \in H \ \forall g \in G_s : r_i(g) \leq T(g) \ and \ card(H) \geq \frac{card(S)-1}{2} + 1 \ ^{13}$$

The use of this strategy allows including 30 companies representing 39% of the free float market capitalization of BVMC. We can see that the *ijmā'* strategy is always included in the majority one. The sector allocation using the majority strategy is given by the following graph:

Graph-6
Index Composition According to the Majority Strategy

Source: by authors

It is found that only 13 sectors out of 15 are represented in the index constructed using the majority strategy. The Construction and Building Materials sector

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13 When card (S) is even, we can take card (S)/2 and consider, in this case, that the set "S" includes the screening rules of the SAC. Indeed, this latter does not apply quantitative screening and thus would retain all elements of "I".

continues to grab the largest share of the total free float market capitalization (26%) followed by Telecommunications (20%).

5) The "Best of" Strategy:

In the "best of" strategy, we choose the basic screening strategy leading to the portfolio with the best performance for chosen criteria. This strategy involves a trade-off between different basic screening strategies.

Conclusion

Morocco is lagging behind his counterparts in the Gulf regarding Islamic finance. On the eve of Islamic banks' launch in Morocco under the label "participative banks", this paper tries to shed light on another important compartment for financing the economy, namely the stock market.

Sharīʿah's experts have made many compromises to allow the existence of ISI. The strict application of Sharīʿah will lead to few compliant companies, making a reasonable diversification impossible (El-Gamal, 2000). Thus, screening rules have been set by indices' Sharīʿah committees. These rules rely heavily on *ijtihād* which explains the divergence in rulings between committees.

In this paper, we focused on the screens used by Sharīʿah committees of mainstream ISI, the various criticisms to these screens and the possible ways to harmonize the practice of screening globally.

The study focused on listed companies on the BVMC. While the activity-based screening leads to the same results, financial screening produces different results depending on the used ratio. This situation will lead to a plurality of the ISI even if constructed from the same starting universe. This plurality can create confusion among investors who are guided by their faith. In the case of Morocco, where the financial statements are published yearly, financial ratios based on the market capitalization are more suitable for screening. Indeed, these ratios will allow a reasonable review frequency of the IMASI. On the other hand, the limited number of companies listed on the BVMC will render easy the research-based screening.

The results of this study show that activity-based screening removed a total of 20 companies. This represents almost 44% of the free float market capitalization of the BVMC. The financial screening, in turn, removed between 13% and 15% of this floating capitalization and a number of companies ranging from 10 to 31. For

financial screening, the STOXX committee remains the most liberal. Indeed, its screening methodology allowed to include in the index the highest number of companies (42 in total), whereas the screens used by Dow Jones allowed only to include 21 companies in the IMASI. This confirms that the screening of the Dow Jones Islamic remains the most conservative among the ISI (Alqahtani, 2009). The averaging of market capitalization causes the smoothing of the ratio and thus leads to a greater stability of the index composition. This smoothing is important especially in times of crisis and its effect is proportional to used period to calculate the moving average.

In this paper, we also discussed the compliance strategies. The first finding is that liberal strategy and the STOXX screening lead to the same results. The *Ijmāʿ* strategy, which is underpinned by conservative considerations, is close to screening methodology of the DJIMI.

Nevertheless, the Islamic screening may be biased: an example is the breach of the principle of profits and losses sharing because of the existence of preferred stock. On the other hand, one must distinguish between the Islamic screening and trading of securities on the stock market. Indeed, a stock can pass the screening process successfully, but without any insurance that transactions on it are in line with the Sharīʿah. In fact, stocks are subject, for example, to short selling that is prohibited by Sharīʿah. Hence the need for an Islamic stock market not only ISI.

References

Abul, Hassan, Antoniou, Antonios and Paudyal, Krishna. (2005) ."Impact of Ethical Screening on Investment Performance : the Case of the Dow Jones Islamic Index", Islamic Economic Studies, 12(2), pp. 67–97.

Abul, Shamsuddin. (2014) ."Are Dow Jones Islamic equity indices exposed to interest rate risk?", Economic Modelling. Elsevier B.V., 39, pp. 273–281.

Affaneh, Ibrahim, Albohali, Mohamed and Boldin, Robert J. (2013) ."Islamic Market Indices : A Comparison with Conventional World Indices Based on the Adjusted Sharpe Ratio", International Journal of Business, Accounting, and Finance, 7(1), pp. 87–101.

Ahmed, Habib, Mohieldin, Mahmoud, Verbeek, Jos and Aboulmagd, Farida. (2015) ."On the Sustainable Development Goals and the Role of Islamic Finance". 7266.

Ajmi, Ahdi Noomen, Hammoudeh, Shawkat, Nguyen, Duc Khuong and Sarafrazi, Soodabeh. (2014) ."How Strong Are the Causal Relationships between Islamic

Stock Markets and Conventional Financial Systems? Evidence from Linear and Nonlinear Tests", Journal of International Financial Markets, Institutions and Money. Elsevier B.V., 28, pp. 213–227.

Albaity, Mohamed and Rubi, Ahmad. (2008) ."Performance of Syariah and Composite Indices : Evidence from Bursa Malaysia", Asian Academy of Management Journal of Accounting and Finance, 4(1), pp. 23–43.

Ali, Salman Syed. (2005) ."Islamic Capital Market Products: Developments and Challenges". Jeddah: Islamic Research and Training Institute, IDB.

Al-Khazali, Osamah, Lean, Hooi Hooi and Samet, Anis. (2013) ."Do Islamic stock indexes outperform conventional stock indexes? A stochastic dominance approach", Pacific-Basin Finance Journal. Elsevier B.V.

Alqahtani, Dhafer Salih. (2009) ."Global Islamic Index Providers: The Wrong Choice", The Journal of Investing, 18(4), pp. 79–81.

Amenc, Noël. (2003) ."Les confusions entre indice, benchmark, allocation stratégique et passive", in Séminaire Edhec-Institut Europlace, pp. 1–40.

Atta, Hajara. (2000) ."Ethical rewards An Examination Of The Effect Of Islamic Ethical Screens On Financial Performance and Of Conditioning Information On Performance measures". Durham University.

Azhar, Abdul Rahman, Mohd, Yahya Azlan and Mohd, Nasir Mohd Herry. (2010) ."Islamic norms for stock screening: A comparison between the Kuala Lumpur Stock Exchange Islamic Index and the Dow Jones Islamic Market Index", International Journal of Islamic and Middle Eastern Finance and Management, 3(3), pp. 228–240.

Binmahfouz, Saeed Salem. (2012) ."Investment characteristics of Islamic Investment Portfolios: Evidence from Saudi Mutual Funds and Global Indices". Durham University.

Cekici, Ibrahim. (2009) ."Finance éthique et finance islamique : quelle convergence ?", in Les Cahiers de la Finance Islamique N° 1. Ecole de Management de Strasbourg, pp. 11–17.

Derigs, Ulrich and Marzban, Shehab. (2009) ."New strategies and a new paradigm for Sharī'ah-compliant portfolio optimization", Journal of Banking and Finance. Elsevier B.V., 33(6), pp. 1166–1176.

Dow Jones Indexes. (2012) ."Guide to the Dow Jones Islamic Market Indexes". Available at:

http://www.djindexes.com/mdsidx/downloads/meth_info/Dow_Jones_Islamic_Mar

ket_Indices_Methodology.pdf.

El-Gamal, Mahmoud Amin. (2000) ."A Basic Guide to Contemporary Islamic Banking and Finance". Rice University.

El-Gamal, Mahmoud Amin. (2006) ."Islamic Finance Law, Economics, and Practice". Cambridge: Cambridge University Press.

FTSE. (2011) ."FTSE Sharī'ah Global Equity Index Series". Available at: http://www.ftse.com/Indices/FTSE_Sharī'ah_Global_Equity_Index_Series/Do wnloads/FTSE_Sharī'ah_Global_Equity_Index_ Series_Factsheet.pdf.

Ghoul, Wafica. (2012) ."Islamic Investing Goes Mainstream: A SWOT Analysis", The Journal of Investing, 21(4), pp. 171–181.

Girard, Eric and Hassan, M. Kabir. (2008) ."Is There a Cost to Faith-Based Investing : Evidence from FTSE", The journal of Investing, 17(4), pp. 112–121.

Guyot, Alexis. (2008) ."Les préceptes de la Shari'ah contribuent-ils à l'efficience et à la performance des marchés d'actions? Une étude comparative des indices Dow Jones Islamic", in Colloque international: Ouverture et émergence en Méditerranée.

Hakim, Sam and Rashidian, Manochehr. (2002) ."Risk & Return of Islamic Stock Market Indexes", in 9th Economic Research Forum Annual Meeting, 26-29 Octobre, Sharjah A.E.U.

Hakim, Sam and Rashidian, Manochehr. (2004) ."How Costly is Investors ' Compliance to Sharia ? How Costly is Investors ' Compliance to Sharia ?", in 11th Economic Research Forum Annual Conference. Sharjah, UAE., pp. 1–19.

Hassan, M. Kabir and Girard, Eric. (2010) ."Faith-Based Ethical Investing : The Case of Dow Jones Islamic Indexes", Islamic Economic Studies, 17(2), pp. 1–31.

Hassan, M Kabir. (2000) ."Risk , Return and Volatility of Faith-Based Investing The Case of the Dow Jones Islamic Index", in Fifth Harvard University Forum on Islamic Finance: Islamic Finance: Dynamics and Development Cambridge, Massachusetts. Center for Middle Eastern Studies, Harvard University. 2000., pp. 43–67.

Ho, Catherine Soke Fun, Abd Rahman, Nurul Afiqah, Yusuf, Noor Hafizha Muhamad and Zamzamin, Zaminor. (2013) ."Performance of Global Islamic Versus Conventional Share Indices: International evidence", Pacific-Basin Finance Journal, pp. 1–12.

Hooi, Hooi Lean and Parsva, Parham. (2012) ."Performance of Islamic Indices in

Malaysia FTSE Market: Empirical Evidence from CAPM", Journal of applied Sciences, 12(12), pp. 1274–1281.

Hull, John. (2009) ."Options, Futures and Other Derivatives". 7th editio. Pearson Education International.

Hussein, Khaled A. (2004) ."Ethical Investment: Empirical Evidence from FTSE Islamic Index", Islamic Economic Studies, 12(1), pp. 21–40.

Hussein, Khaled A. (2005) ."Islamic Investment : Evidence From Dow Jones and FTSE indices", in 6th International Conference on Islamic Banking and Finance, November 21-24, Jakarta, Indonesia, pp. 1–14.

Hussein, Khalid and Omran, Mohammad. (2005) ."Ethical Investment Revisited : Evidence from Dow Jones", The journal of Investing, 14(3), pp. 105–126.

IFSB. (2014) ."Islamic Financial Services Industry Stability Report".

Iqbal, Munawar and Molyneux, Philip. (2005) ."Thirty Years of Islamic Banking History, Performance and Prospects". Palgrave Macmillan.

Kafou, Ali and Chakir, Ahmed. (2013) ."Les Indices Boursiers Islamiques : Guide Methodologique et Application sur le MASI", in CIFIMA'2013, pp. 1–18.

Kafou, Ali and Chakir, Ahmed. (2014) ."Construction d'un indice boursier islamique à la bourse des valeurs mobilières de Casablanca", Cahiers de Recherche en Sciences de Gestion, 2, pp. 215–243.

El Khamlichi, Abdelbari. (2012) ."Éthique et performance: le cas des indices boursiers et des fonds d'investissement en finance islamique". Université d'Auvergne et Université Mohamed V.

Khatkhatay, M. H. and Nisar, Shariq. (2007) ."Shari'ah Compliant Equity Investments: An Assessment of Current Screening Norms", Islamic Economic Studies, 15(1), pp. 47–76.

Lobe, Sebastian, Rößle, Felix and Walkshäusl, Christian. (2012) ."The Price of Faith: Performance, Bull and Bear Markets, and Screening Effects of Islamic Investing Around the Globe", The journal of Investing, 21(4), pp. 153–164.

MSCI. (2011) ."MSCI Islamic Index Series Methodology". Available at: http://www.msci.com/eqb/methodology/meth_docs/MSCI_May11_Islamic_Method.pdf.

Obaidullah, Mohammed. (2005) ."Islamic Financial Services", Islamic Economics Research Center. Jeddah: King Abdulaziz University.

S&P. (2011) ."S&P Sharī'ah Indices Methodology". Available at: URL :

http://www.tmx.com/en/pdf/TXSIDescription.pdf.

S&P Dow Jones Indices. (2012) ."S&P Dow Jones Indices: Index Mathematics Methodology".   Available   at: URL :   https://www.sp-indexdata.com/idpfiles/emdb/prc/active/methodology/methodology-index-math.pdf.

Siddiqui, Rushdi. (2011) ."Report card of Islamic indices". Available at: http://demo.wordpresshelper.org/340/2011/07/13/report-card-of-islamic-indices.

STOXX. (2013) ."STOXX Index methodology Guide". Available at: http://www.stoxx.com/download/indices/rulebooks/stoxx_indexguide.pdf.

Walkshäusl, Christian and Lobe, Sebastian. (2012) ."Islamic Equity Investing : Alternative Performance Measures and Style Analysis", The journal of Investing, 21(4), pp. 182–189.

Zamri, Ahmed and Haslindar, Ibrahim. (2002) ."A study of performance of the KLSE Syariah index", Malaysian Management Journal, 1&2(6), pp. 25–34.