A New Paradigm And New Strategies For Shariah-Compliant Portfolio Optimization: How to Practice in Indonesia

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ABSTRACT

In this paper we analyze the effects of different strategies to construct Shariah compatible financial portfolios. The difference between conventional and current Shariah portfolio management is the application of sector screens and financial screens by which the asset universe is reduced. Yet, here different schools of scholars define different screening rules leading to significant differences with respect to compliance, but also with respect to performance. After analyzing this discrepancy we propose several new strategies to apply the inconsistent rule systems and a new paradigm for defining Shariah-compliance. Under this new paradigm compliance is attributed to the portfolio and not to the individual assets of the universe. We report results of an empirical study analyzing the potentials of these strategies and of the paradigm and how to practice in Indonesia. We can show that under the proposed concepts Shariah-compliant portfolios can be realized which have return and risk profiles comparable to the conventional non-constrained portfolios

Keywords:Shariah guidelines, Islamic funds,Portfolio models,Empirical analysis and Finance's Rule of Indonesia

1. Introduction

The increasing capital value of the Muslim population and the demand of these investors to invest their capital in financial products that do not conflict with the Shariah triggered the development of Shariah-compliant investment products such as Islamic equity funds. Due to the fact that Shariah prohibits the involvement in interest-based assets such as conventional bonds, speculative investments such as derivatives and specific prohibited industries such as the armaments industry (Wilson, 2004), specific guidelines need to be introduced as additional constraints into (optimization) models for constructing Shariah-compliant portfolios.

These guidelines stem from the main Shariah sources Quran, Hadith and Ijtihad. The Quran is the primary source of Islam\ including the words of God as delivered to the prophet Mohammed whereas the Hadith consists of narrative records of the actions and sayings of the prophet himself. The third Shariah source Ijtihad is the derivation and formulation of Shariah laws or guidelines by qualified scholars to deduct further knowledge from the Quran and Hadith. Since there is no higher institution responsible for religious opinions to be followed by all Muslims, experienced Shariah scholars (DeLorenzo, 2000) interpret these sources and specify so called Shariah-compliance strategies to be followed within asset selection. Here a compliance strategy is simply a set of computable or executable rules by which non-compliant assets are identified. Derigs and Marzban (2008) have shown that different opinions and inconsistencies exist among the Shariah scholars and their compliance strategies. These can mainly be attributed to the different Shariah perceptions of the scholars and to the ‘‘complexity of transforming the historical and verbal Shariah sources into quantifiable and formal guidelines to be used within a modern guideline evaluation and portfolio management system” (Derigs and Marzban, 2008). The area of Shariah Finance is a specific instance of a broader appearance, the so called socially responsible investments (SRI) which have been discussed in the finance literature only recently (Renneboog et al., 2008; Galema et al., 2008).

In this paper we introduce several new approaches to motivate and initiate a discussion on developing concepts for defining different levels of compliance and standardization of interpretation. In Section 2 we first describe a set of new strategies for Shariah-compliant asset selection. While so far all strategies consider compliance as an attribute of single assets, we then propose to consider compliance as an attribute of the portfolio leading to what could be called a new ‘‘paradigm” in Shariah portfolio theory and practice. This new paradigm can be combined with the different Shariah- compliance strategies and offers several new compliance options. In Section 3 the proposed strategies and the new paradigm are formalized leading to a set of different portfolio optimization models which are all practical in the sense that they are comput able. The effect of the proposed strategies and paradigms on compliance consistency and on portfolio performance (return and risk) will then be empirically investigated and interpreted in

Section 4. The alternative strategies and the new paradigm proposed in this paper are justified and formulated based on Shariah practices and reasoning. The practicability and effectiveness is demonstrated in the paper, yet, the decision regarding their Shariah-compliance and practical use needs to be checked and decided upon by Shariah scholars.

2. New Shariah-compliance approaches

Generally, Shariah-compliance strategies are based on two types or sets of guidelines: sector guidelines and financial guidelines (Nisar and Khatkhatay, 2006). Shariah clearly defines activities in which Muslims may not be involved in such as the consumption of alcohol and pork and activities related to gambling. Consequently, Muslims are not allowed to invest in assets from businesses earning primarily from such activities such as alcohol producers, casinos or even partially as for instance many hotels due to their income from bars and clubs. Now, sector guidelines are conservative prescriptions through which companies operating in non Shariah-compliant business activities are excluded.

Financial guidelines on the other hand are used to analyze how deeply companies are involved in financial practices not compliant with Shariah. For that purpose Shariah scholars define threshold levels for specific indicators/financial ratios through which the degree of compliance is measured. If the company that issued the asset is involved in financial practices exceeding the respective threshold, the asset is classified as non-compliant and as with the sector guidelines has to be excluded from further investment consideration. Generally, the use of such guidelines is a relaxation of the conservative Shariah rules and a tribute paid to the complexity and the generally non-islamic nature of the current capital markets. In order to claim Shariah-compliance, return obtained from portfolios constructed under these relaxations has to be cleansed through post-investment purification practices (Elgari, 2000), i.e. a process in which the proportion of non-compliant income is identified and donated.

To study the diversity of Shariah strategies Derigs and Marzban (2008) have analyzed the impact of six different Shariah strategies on a unique reference asset universe. These basic strategies were based on the guidelines defined by the Shariah boards of the Standard and Poor's Islamic Index Group (S&P), the Dow Jones Islamic Index Group (DJIM), the Financial Times Islamic Index Series (FTSE), the Morgan Stanley Capital International Islamic Index Series (MSCI), the HSBC Amanah Fund (HSBC) and an anonymous Islamic Fund (ANON). As reference asset universe we have chosen the Standard and Poor's 500 index constituents of the 17th of September 2007.
Fig. 1 gives an overview of the sizes of the asset universes after applying these basic Shariah strategies individually as well as the variation in classification. Variation or what we will refer to as ‘‘compliance inconsistency” is measured by the percentage of assets which are differently classified between two compliance strategies (i.e. one strategy considers the asset to be compliant and the other considers it as non-compliant). One reason for these variations can be attributed to the type and semantic of the financial ratios used within the Shariah guidelines.
While S&P and DJIM use average market capitalization as divisor for their financial ratios the other Shariah strategies use total assets as divisor. Motivated by these findings on inconsistencies in current compliance strategies, we propose and describe in the next section our new Shariah-compliance strategies which establish a system of different levels of compliance and on the other hand contribute to a standardization and integration of different basic strategies.

2.1. A new paradigm for Shariah-compliance

The compliance strategies described above consider compliance as an attribute of the single assets. If an asset satisfies the respective guidelines it is considered compliant, else the asset is deemed non-compliant and has to be eliminated from the asset universe. The following proposal leads to a new paradigm which if accepted by current Shariah scholars will revolutionize Islamic equity management.

‘‘Funds are investment vehicles, which are financially independent of the institutions that establish them.” Therefore, a fund takes the form of an independent company, such as a limited liability company (Norman, 2004), in which investors act as shareholders. Now, we simply argue that with respect to compliance a fund which itself invests in multiple companies has to be evaluated in the same way as a conventional independent company. We will justify this point of view and illustrate it by an example.

Consider, for example, a hotel, then a critical Shariah guideline is the following: _ Income from the casinos, bars, night clubs and alcoholic beverages has to be less than 5% of the total revenue generated by the hotel. Since the core business of the hotel is considered compliant, this guideline is used to restrict the investment to only those hotels with a non-compliant income less than the threshold. Thus, a hotel can be considered as a company operating in three business lines which are: accommodation and Shariah-compliant hotel services, the sale of alcohol and casinos and night clubs. If a hotel has an overall non-compliant income from the second and third business lines which is less than 5% of the accumulated revenue generated by the three business lines together, then, according to the guideline, it is considered to be compliant for investment. Accordingly, if the investment in a company like a hotel that generates negligible income (which will also be purified later on) from some non-compliant activities is considered to be compliant as such under some strategy, then analogously an investment in a fund which invests in different companies, should also be considered to be compliant as a whole if the mixture of companies (interpreted as business lines of the fund) does not violate the guidelines of the same Shariah strategy.

Also, for the investor of a portfolio the overall portfolio return and portfolio risk is crucial and not the return and risk of the single assets. Using the same argumentation, an Islamic investor should focus on the overall Shariah-compliance of his portfolio and its return netted by purification rather than looking at single asset compliance and returns. The new portfolio compliance paradigm can be used in conjunction with any asset compliance strategy as for instance those described
in Section 2.1, i.e. it can be combined with any basic strategy from an Islamic index, or, the best of, Ijmaa, liberal or majority compliance strategy, respectively. This results in a large variety of new options for compliance specification. These combinations vary from very conservative to rather liberal. Obviously, the use of an asset-based compliance strategy may result in a significant reduction of the asset universe but it does not restrict the amount to be invested in a compliant asset. On the other hand, within a portfolio-based compliance strategy no asset is excluded from the asset universe per se, but, the control of the entire portfolio through the financial ratios may put limitations on the proportional wealth to be invested in certain assets implicitly.

The new paradigm might be considered as too liberal or even non-Islamic, but it is deduced by logical reasoning from current compliance strategies. Of course, this paradigm should be applied only to specific products and after some preprocessing: _ First, the fund should only invest in Shariah-compliant asset classes such as equity or products structured in a Shariah-compliant way such as sukuks (Islamic bonds). _ Secondly, no investment should be allowed in assets from companies whose primary activities are not compliant with Shariah. Thus the conventional sector guidelines, through which those assets are excluded from the asset universe, should be applied before hand.

2.2. New Shariah-compliance strategies

Conventionally Islamic investment trusts use a specific Shariah compliance strategy to define a compliant asset universe. Such a ‘‘basic” Shariah-compliance strategy is either defined by an in house Shariah board supervising the trust or the trust subscribes to the service of an externally-supervised Islamic index such as the S&P Islamic Index. As we have seen in Fig. 1 these basic compliance strategies if compared to each other are characterized by high inconsistencies in the size of asset universe as well as in the constituents considered to be compliant. The Shariah scholars who supervise the different Islamic funds and index providers and who defined the different Shariah strategies can be considered as being the major and most qualified Shariah scholars. Thus, the inconsistencies between these strategies as all inconsistencies among expert opinion call for what can be called compromises or view integration. The following four strategies to combine the expertise suggest themselves and are more orless self explanatory.

2.2.1. ‘‘Best of” strategy

The basic Shariah strategies are defined by different Shariah boards, with each of these boards claiming that their strategy and the defined guidelines ensure Shariah-compliant asset selection. Now, the ‘‘Best of” strategy selects from the pool of basic compliance strategies the one which results in the best portfolio performance in terms of some objective function based on return and risk.

2.2.2. Consensus/Ijmaa strategy

The consensus strategy considers an asset to be compliant if and\ only if all basic Shariah strategies consider the respective asset to be compliant. The Shariah foundation of this compliance strategy can be attributed to the Ijmaa principle, which is the unanimous consensus of all major qualified Shariah scholars on a certain Shariah issue at a given time. Under the Ijmaa strategy, asset compliance is defined through considering all basic Shariah strategies and their respective guidelines simultaneously within the portfolio optimization model.

2.2.3. Liberal strategy

Under the liberal strategy an asset is considered to be compliant if at least one basic Shariah strategy considers the asset to be compliant. The liberal compliance strategy results in a larger asset universe and therefore higher returns and lower risks can be expected under this strategy.

2.2.4. Majority/Kasra strategy

The majority (in Arabic Kasra) strategy is motivated by the Islamic juristic principle which states that ‘‘the majority deserves to be treated as the whole thing”. Thus, an asset is compliant under this strategy if and only if the majority of the basic Shariah strategies consider this asset to be compliant.

3. Financial Product

Reksadana is a platform where people can invest their funds and by the governors (investment manager) the funds invested into the portfolio effect. Reksadana is a way out for the small investors who wish to participate in capital markets. Capitalists will find 'egg' investasinya spread in a number of 'buckets' different, so the risks are spread. Reksadana believed to have a very large share in the national economy because it can mobilize the funds. Other side, reksadana be profitable to the community safety and profit increase material well-being. But for Muslims, the products must in focus, as developed from the conventional financial services who deny the teachings of religion, in addition to still contain the things that are not in line with Islamic teachings: for example investment reksadana in the products that are prohibited in Islam.

3.1. Reksadana Syari'ah (*Islamic Investment Fund*)

Reksadana Shariah is basically a conventional reksadana Islamisation. Reksadana Shariah is the platform used to collect funds from capitalist society as the owner of funds (shabul mal) to further invested in the Portfolio Effects of Investment Managers as representatives of civil Shahibul accordance with the terms and principles of Islamic jurisprudence. Actually guide for Muslim society to invest in this product is provided by the DSN-MUI fatwa No.20 of 2000 on Guidelines for Implementation of Mutual Fund Investing compliant. Unfortunately shariah products more profitable investment than savings or time deposit products was less society shariah banking. Fund owners (investors) who want halal investment will entrust their funds to contract wakalah to Investment Managers. Shariah Reksadana will act in Aqad mudharabah as Mudharib who manage mutual funds from the investor-owned. As proof of investor participation will have participation from Reksadana Unit compliant. Reksadana of Shariah funds will be placed back into the Emiten activities (other enterprises) through the purchase of Shariah effects. In this case acts as a Shariah Reksadana Emiten Mudharib and acts as Mudharib. Therefore, this relationship is referred to as bonding Mudharabah bias Storey. Difference reksadana sharia and sharia reksadana own conventional wisdom is based on investment in a portfolio of investment instruments that are categorized halal. Said to be lawful, if the company that issued the investment instruments do not work contrary to Islamic principles. Do not lend at usury or money. Stocks, bonds and other securities issued its non-enterprise related to the production or sale of alcoholic beverages, products containing pork, business entertainment smelling vice, gambling, pornography, and so forth. In addition, the fund management reksadana not allow the use of investment strategies geared towards speculation.

Further, the investment profit the result divided between the investor and investment manager in accordance with the proportion of capital owned. This investment product can be a good alternative to replace banking products at this time felt that a relatively small yield. Reksadana shariah is very suitable for long-term investments such as preparation of pilgrimage or children's school fees in the future. Currently getting a lot of choice. Currently there are 11 reksadana cumulative shariah has been offered to the community. Amount was increased by 233.33 percent compared to the year 2003 that there were only three reksadana shariah.

3.2. Reksadana choice Shari'ah in Indonesia

Eleven reksadana sharia was offered to the community Uncategorized on fixed income and reksadana reksadana mixture. Fixed income Reksadana reksadana that most of the composition of its portfolio in fixed relative income effects, such as: Shariah Obligation, SWBI, CD Mudharabah interbank Mudharabah Investment Certificates and effects of sex. That includes this type of shariah reksadana among others; BNI Syariah Fund (since 2004), Wallet-BTS Dhuafa Shariah (2004), PNM Amanah Syariah (2004), Big Shariah Fund (2004) and I-Hajj Syariah Fund (2005). Last year reksadana fixed income can provide about 13-14 percent profit. While the mixture is reksadana reksadana that most of the portfolio composition effect is placed in equities such as stocks sharia (JII), which provides relatively higher profit. Included in this reksadana are: NM Reksadana Shariah (since 2000), reksadana Balanced Shariah (2000), Batasa Shariah (2003), BNI Syariah Plus Fund (2004), AAA Syariah Fund (2004) and BSM Investa Balanced (2004). The average investor profits can be opened at this reksadana around 23 percent last year. From observations made look routine Net Asset Value (NAV) per unit throughout its shariah reksadana to crawl up, a sign of good performance. At least there is some profit can be obtained by investing in Shariah reksadana, among other suitable investment willingness (affordable), not subjected to tax (a tax-exempt), the development can be monitored on a daily basis through the media (including some newspaper), the relatively higher (compared deposit), within easy reach (How can the ATM and Phoneplus), which is important also monitored by Shariah Supervisor (DPS) and will be audited on a routine basis.

Capital to start investing in this product may vary there is a minimum of Rp 5 million as BSM Investa Balanced, or Rp 1 million to BNI Syariah Fund, but there is only Rp 250 thousand. For even relatively simple live pemesanannya come to her office, respectively. For BNI Syariah Funds and Balanced Funds Investa BSM Branch came to live and BSM BNI Syariah already relatively widespread. To overthrow capitalists preferred to be very careful. Examine the product before buying. Do not let buying a product without first reading the prospectus. Or worse yet, buy reksadana absolutely do not have a prospectus. As reksadana syariah investment products is not something that immune and immune from loss. Shariah investment just is pregnant run the risk of loss on investment managers. This we can prove that with the dissolution of Shariah by Bapepam reksadana Rifan end of 2004 because of its NAV has become Rp 0, - due to failure to manage investment funds. Some important factors to consider is the capacity and ability of the Investment Manager to manage the fund, it can be seen from the performance of the running for this. Should also be considered cost-burdened costs such as: cost of purchase and sale costs back, recompense Investment Manager and Custodian recompense. Safe to invest.

Availability effects that can be used as a portfolio of shariah

Unswer	Frequency	Percent
Yes	23	95.83
No	1	4.17
Another elye	0	0
Total	24	100.0

5. Implementation – empirical results

In the following empirical analysis we report results concerning the impact of the different compliance strategies on expected portfolio return, risk and compliance consistency. The main purpose of this analysis is to make the potentials of the new strategies transparent, i.e. we can show that the Shariah-compliance strategies which we have developed and proposed in Section 2 perform better than portfolios following one of the basic Shariah strategies. The analysis is based on the assets included in the Standard & Poor's 500 (S&P500) index on the 17th of September 2007, which will be from now on referred to as the asset universe. To measure the Shariah-compliance of the assets included in the asset universe, the detailed financial figures for the financial year 2006 of the companies issuing the respective assets, as published in their annual financial statements, were retrieved using the software system Market IQ. Additionally, the monthly total returns (annualized) and market capitalization values of the considered assets were retrieved from Bloomberg.

We have considered the following set of basic Shariah strategies S = {S&P, DJIM, FTSE, MSCI, HSBC, ANON}. Based on the type of financial ratios used these strategies can be categorized into two groups: the set of market capitalization (MC) based strategies SMC = {S&P, DJIM} and the set of total assets (TA) based for the associated portfolios of minimal risk strategies STA = {FTSE, MSCI, HSBC, ANON}.

For our study we have assumed an active portfolio management and we have implemented and based our comparison on the Markowitz mean-variance approach (Markowitz, 1952) constructing the efficient frontier and the set of efficient portfolios from which the user can then choose an appropriate portfolio according to his risk profile. Here a portfolio is efficient if it has minimal risk among all portfolios of the same return (or vice versa). In a practical situation the efficient frontier can only be approximated and due to the possibly large number of efficient solutions only a representative subset of efficient portfolios should be constructed and presented to the investor to reduce complexity. We have implemented this approach as follows: For every model instance we first calculate the possible return spread by constructing the two extreme portfolios which are efficient: the portfolio with maximal (expected) return and the portfolio with minimal (expected) risk. Then we approximate the efficient frontier by constructing the portfolio of minimal risk for ten equidistant return values between these extreme values.

To show that the models are practical, i.e. can be solved within a practical environment we have included two constraints which represent aspects which on top of Shariah-compliance have to be considered in real investment situations: a constraint limiting the weight of an asset to at most 10% which can be interpreted as an example for a legal guideline (Derigs and Nickel, 2003) and a constraint limiting the number of assets to be included in the portfolio to at most 40 assets which is a common internal guideline reducing the complexity of management (Jobst et al., 2001). Also, in a preprocessing step we have reduced the asset universe by applying unified Shariah sector guidelines.

Now we report the results of our analysis for the different strategies and paradigms.

Study results syariah investment in capital markets of Indonesia, has successfully identified a total of 12 to 14 problems underlying to the constraints or obstacles in the development of syariah investment activities in Indonesia capital market. As constraints or barriers intended among others:

1. knowledge and understanding of sharia capital markets;
2. Availability of information on Shariah capital markets;
3. Interest on the effect of shariah capitalists;
4. About Publications effects framework sharia rules;
5. Management patterns (from side shariah) by institutions involved;
6. Pre-processing (preparations) Issuance of Stock shariah;
7. Coops or institutions who manage and supervise the activities of shariah capital markets in Indonesia

In addition Emtien / Public Companies that Required the use of restricted funds only for activities appropriate to the principles of shariah is a case that could impede / slows. While the division Guarantor Emission Effects (PEE) stated that the level of emissions Guarantor is also a constraint effects in the development of syariah investment activities in capital markets. While the demand side (demand), represented by the Investment Manager of the respondent group, specifically states that the effect of limited availability to serve as Portfolio is a constraint and or barriers.

6. Conclusion

Within this paper we have considered the problem of Shariah compliant portfolio construction. The analysis revealed that on the same asset universe current basic Shariah-compliance strategies result in much lower portfolio performance than portfolios without considering Shariah-compliance. To overcome these short comings a number of new concepts for defining Shariah-compliance at different levels have been developed including a new paradigm which considers Shariah-compliance as an attribute of the portfolio constructed rather than measuring compliance on an asset level as is done in all current approaches. All concepts have been formalized such that they can be incorporated in every conventional portfolio optimization model by simply introducing appropriate sets of constraints.

Our empirical analysis has clearly shown that if fund managers stick to the current Shariah strategies then they are better off employing market capitalization based ratios which outperform strategies which use total assets based ratios. We have proposed new concepts for defining Shariah-compliance leading to strategies by which portfolios can be constructed that achieve better portfolio performance than current Shariah strategies. We also have proposed and justified a new paradigm which measures compliance on a portfolio level rather than individually for each asset. Our analysis shows that applying this paradigm results in portfolios which perform much better than their asset-based counterparts in terms of return and risk. Another significant effect of the portfolio-based compliance strategies is that not only the performance differences between market capitalization based and total asset-based compliance strategies are almost eliminated but even more important Shariah-compliant portfolios can reach the performance of conventional portfolios on the same asset universe.

Considering compliance as an attribute of the portfolio forces compliance control to take place during portfolio optimization instead of a preprocessing phase as can be done with the current strategies. This requires a shift from the purely extensional description of compliance in terms of specifying the asset universe to an intentional description of compliance in form of checkable guidelines which can be incorporated into the portfolio optimization model. Besides the necessary provision of such guidelines by the Shariah scholars the availability of modeling tools for setting up the Shariah-compliant portfolio optimization model is an important prerequisite, though not mandatory for applying the new paradigm in practice. Such a supporting system has been developed by the authors. Certainly and most importantly, the eligibility of the new portfolio- based compliance paradigm has to be analyzed from a Shariah perspective by experienced Shariah scholars whose opinion and judgment decides on the practical acceptance.

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