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On the Performance of Egyptian Mutual Funds

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Abstract

Purpose: The purpose of this research is to investigate the financial performance of Islamic and conventional mutual funds in the Egyptian financial market.

Design/methodology/approach: This research is based on analyzing the risk and return of Islamic and conventional mutual funds using financial performance and risk measures. The analysis is based on the weekly returns of a sample of 6 Islamic equity mutual funds and 15 conventional equity mutual funds from April 2008 to May 2015. Both the Egyptian market index and the Morgan Stanley Capital International indices for Egypt are used as market benchmarks for the Egyptian market.

Findings: The results show that Islamic mutual funds underperformed both conventional mutual funds and the Egyptian market index. As for risk measures, Islamic funds had the lowest total and systematic risk whether compared to conventional mutual funds or the Egyptian market indices. Thus, Islamic funds do provide hedging opportunities as showed during the period under study.

Practical implications: The low risk characteristics of Islamic mutual funds suggest that investment managers can use them as tools to adjust the risk features of relevant portfolios.

Originality/value: The research points out to Egyptian Islamic mutual funds' performance relative to other benchmarks. This area is relevant to investors who are attracted to Islamic Sharia compliant financial securities and other investors who are willing to reduce their overall risk levels.

Keywords: Islamic finance, Mutual funds, Fund performance

1. Introduction

Mutual funds are investment vehicles that consist of pooled funds collected from investors with similar investment objectives and managed by professional asset managers; mutual funds enable small investors to engage in the financial market thereby increasing the size and the liquidity of the market. The need for well-diversified and managed portfolios gave rise to the wide diffusion of mutual funds.

Mutual funds benefits investors by providing means of professional management, diversification and liquidity. Managers of mutual funds build the investment policy of the mutual funds in the funds' prospectus (Bodie, Kane, & Marcus, 2008). The investment policy of the mutual fund targets a niche of investors that match the investment objectives of the fund. The investment objectives of financial investors vary across groups of investors and even across time within the same group. The current financial situation, tax position, time horizon, liquidity needs, risk tolerance, return objective and other special requirements usually form the investment objective of investors. Thus, mutual funds cannot satisfy all investors' categories. However, managers of mutual funds usually consider the prevalent appetite in the financial market while making their investment decisions.

The variety of investable financial assets allowed the existence of many different classifications of mutual funds depending on their prospectus. Among the commonly known mutual funds are: equity, bond, balanced, money market, index and international mutual funds (Noulas, Papanastasiou, & Lazaridis, 2005).

Another investment vehicle that investors are turning in to is Social Responsible Investing (SRI) and Islamic finance based investments. These vehicles satisfy the unique requirement objectives of some investors because they consider other investment aspects beside the financial return (El Ghoul & Karoui, 2017). Islamic mutual funds (IMF), for instance, provide diversification and professional management like conventional mutual funds (CMF); however, the main distinction between Islamic and conventional mutual funds is that the former follows Islamic Sharia principles and guidelines throughout the investment process. Thus, any forbidden activities or investment vehicles, that are considered prohibited in Islamic Sharia, are not considered an investment option under Islamic finance and managers of IMF should avoid such investments (Abdullah, Hassan, & Mohamad, 2007; Hassan & Merdad, 2012; Hoepner, Rammal, & Rezec, 2011; Merdad, Hassan, & Alhenawi, 2010).

In recent decades, Islamic Sharia compliant financial services and products became an interest to many financial market participants. Interestingly, Islamic Sharia compliant financial services attract the attention of not only Muslims countries but also a variety of different investors around the world (Cihak and Hesse 2010; McKenzie 2009, cited in Hoepner et al. 2011, P.829).

IMF invests their portfolios in a limited type of financial instruments which are in accordance with Islamic finance and Sharia principles. Islamic Sharia principles promote sharing the risk and return aspects among investment parties. All parties involved in a financial transaction should bear adequate risk-return exposure. Thus, Islamic Sharia principles encourage

partnership investing rather than creditor-debtor relationship (Shanmugam & Zahari 2009; Abdullah et al. 2007). Another key principle in Islamic finance is the forbidden of Riba (interest paid or earned on funds). This would mean that investing in conventional instrument such as certificate of deposits, bonds, trading on margin, and any similar interest-bearing security is not allowed under Islamic finance (Elfakhani et al., 2005).

Islamic Sharia prohibits return coming from unethical, harmful or socially irresponsible activities. In consequence, investing in financial instruments of activities related to certain industries such as weapons, pornography, gambling and alcohol are prohibited. Islamic Sharia principles also promote sanctity of contracts and forbids Gharar (deception and ambiguity) (Abdullah, Hassan and Mohamad, 2007; Merdad, Hassan and Alhenawi, 2010 ; Hassan and Merdad, 2012). Thus, investors must honor previously agreed upon contracts and are not allowed to deceive any stakeholder.

The Sharia Supervisor Board is the institution that monitor and govern the compliance of IMF' managers with Islamic Sharia principles (Elfakhani et al., 2005). The board acts with the best interest of investors, it ensures that managers accomplish their stated investment objectives (ElKhamlichi, Laaradh, Arouri, & Teulon, 2014). Similarly, in CMF the supervisory committee ensures that managers follow the rules in the prospectus of the mutual funds.

The remainder of this research is organized as following: section 2 illustrates the previous literature relevant to the research, section 3 provides a full discussion about the research methodology, section 4 describes the statistical analysis and the main findings after testing the research hypotheses, section 5 demonstrates the implication of the research findings on the Egyptian financial market and section 6 sheds the light on ideas for future research.

2. Literature Review

The comparison of Islamic and conventional mutual funds has taken many forms. Some researchers focused on the core essence behind building the IMF, they studied whether or not IMF really follow Islamic Sharia principles and guidelines. Other researchers focused on the behavior of IMF and its effect on the investment environment and others studied the performance differences between Islamic and conventional mutual funds.

The literature concerning the performance of CMF and Islamic versus conventional mutual funds is inconclusive. Many researchers have analyzed CMF relative to a given benchmark; usually the market index and others have compared the performance characteristics of both the conventional and Islamic mutual funds. However, researchers are uncertain of whether conventional and Islamic mutual funds are better than their relevant benchmarks.

For instance, Wagner and Margaritis (2017) found that CMF outperformed their benchmark on a before-cost basis. However, in their research Fama & French (2008) proved that CMF' return doesn't differ significantly from the return of the market benchmark. Remarkably, Matall ń-S áez, Soler-Dom ńguez and Tortosa-Ausina (2016) argue that the performance of CMF is function of the period under study; that is it, CMF performance depends on the market condition that affect the financial market during the sample period.

As for IMF, Dabbeeru (2006) and Abderrezak (2008) found that there is no statistical significant difference between the performance of IMF and the market index (cited in ElKhamlichi et al. 2014). This is also supported by Elfakhani et al. (2005) study. However, Ferdian and Dewi (2007) argued that during the research's period IMF outperformed the market index (cited in ElKhamlichi et al. 2014 P.15).

Focusing on the risk element, on one hand, many researchers found that IMF present stable performance during bearish market periods (Boo, Ee, Li, & Rashid, 2017; Hammami & Oueslati, 2017; Reddy, Mirza, Naqvi, & Fu, 2017). This indicates that IMF proposes hedging opportunities during bearish markets by providing investors with a performance better than CMF.

Similarly, Abdullah et al., (2007) concluded that IMF is less harmful to investors relative to CMF because the funds' managers have limited latitude over the investment decisions, as a result of following Islamic Sharia principles.

This is supported by Lee and Faff (2009) who argue that Islamic Sharia principle limit the type of investments risks available to the funds' manager thus imposing more risk control over the mutual funds and offering superior risk management relative to CMF (cited in Hoepner, Rammal, & Rezec, 2011 P.832).

Further, Boo, Ee, Li, & Rashid (2016) extended that IMF provide better performance and risk management during market downturns than do CMF; therefore, their study supports the idea that IMF may have some inherent hedging opportunities due to their nature of the investment process and their available investment universe. Nonetheless, Hong and Kacperczyk (2009) view that IMF face many investment restrictions that disturb their performance and force the funds' managers to miss shining market opportunities (cited in Hoepner et al., 2011 P.832).

On the other hand, Mansor & Bhatti (2011) disputed that IMF have higher total risk than CMF; this is reinforced by Naqvi et al., (2018) who strongly call the argument that IMF provide lower risk and higher alphas than their benchmarks into question.

In searching for the performance difference between IMF and CMF, Lesser and Walksh äusl, (2018) concluded that IMF outperformed CMF during market downturns.

Likewise, Hassan & Merdad (2012) showed that IMF outperformed their parallel international mutual funds; they also argued that although IMF face a limited investment vehicle options, they are more efficient than international mutual funds.

Conversely, El-Masry et al., (2016) claimed that CMF outperformed IMF; moreover, Hayat & Kraeussl (2011) contended that IMF do not provide any hedging opportunity as the performance of CMF was superior to IMF in normal market environment. In addition, they deduced that IMF' poor performance got worse in bearish market periods.

Although most of the researchers argue for or against the performance of IMF relative to CMF, Reddy et al., (2017) debated that Islamic and conventional mutual funds experience similar performance measures.

The importance of this research is to solve part of the controversial researches that study the performance of Islamic versus conventional mutual funds. This research examines the performance differences between Islamic and conventional Egyptian mutual fund. Thus, this research contributes to the literature by providing a direct comparison of the risk and return characteristics of Islamic and conventional equity mutual funds in Egypt.

Accordingly, the research problem is "examining whether Egyptian Islamic/conventional mutual funds differ in their performance against: each other, their relevant benchmarks and the Egyptian market index (EGX30)".

3. Research Methodology and Hypotheses Testing

The research is conducted on a sample size of 21 mutual funds out of 34 equity mutual funds population, 15 of them are CMF and the remaining six are IMF all of them are open-end equity mutual funds. The conventional funds are grouped together into one equally weighted portfolio, and the Islamic funds are grouped into another equally weighted portfolio. The research is based on a convenience sampling style where the sample data of funds were chosen based on their inception dates. The research is based on the period from May 2008 to April 2015.

The Egyptian 91-day after-tax Treasury bill rate and the Egyptian index EGX 30 are used as proxies for the Egyptian risk free rate and the market index for Egypt, respectively. Further, the MIEG (Morgan Stanley Capital International index for Egyptian Islamic funds) is used as benchmark for IMF and the MXEG (Morgan Stanley Capital International index for Egyptian conventional funds) is used as benchmark for CMF.

Data for Islamic and conventional mutual funds (weekly net asset value and dividends) was collected from the Egyptian Investment Management Association (EIMA, 2016). Further, the three month treasury bill rates for the 7 year period were collected from the Egyptian, Ministry of Finance's website (Egyptian Ministry of Finance, 2016) and the Egyptian market index (EGX30) data was collected from EIMA. As for MIEG and MXEG data, they were collected from Morgan Stanley Capital International (MSCI) website (MSCI, 2016).

After reviewing the literature it is clear that researchers are inconclusive on the performance evaluation of Islamic and conventional mutual funds. Building on that, the following hypotheses will be tested:

H1 There is a statistical significant difference between the financial performance of Islamic and Conventional mutual funds.

H2 There is a statistical significant difference between the financial performance of Islamic mutual funds and Egyptian market indices (EGX30 and MIEG).

H3 There is a statistical significant difference between the financial performance of conventional mutual funds and Egyptian market indices (EGX30 and MXEG).

3.1 The Analysis Variables

3.1.1 Financial Performance Measures

Average monthly total rate of return is calculated for the five groups (IMF, CMF, EGX30, MIEG and MXEG) for the 7 years period (Kothari & Warner, 2001; Mansor & Bhatti, 2011; Noulas et al., 2005). The net asset value (NAV) is used to calculated funds' average monthly return (Boo et al., 2017; Naqvi et al., 2018; Sánchez-González, Sarto, & Vicente, 2017). The average return is calculated as:

$$R_p = \frac{(NAV_t - NAV_{t-1} + D_t)}{NAV_{t-1}}$$

Where,

R_p = Total rate of return of portfolio p;

NAV_t= Net asset value at time t;

NAV_{t-1} = Net asset value at one period before time t and

D_t = Dividends at time t.

The Sharpe ratio and the Treynor ratio are used as risk-adjusted return measures of financial performance (Boo et al., 2017; Grau-carles, Doncel, & Sainz, 2018; Noulas et al., 2005; Reddy et al., 2017; Sharpe, 1966; Wagner & Margaritis, 2017).

The Sharp ratio:

$$S_p = \frac{\overline{R_p} - \overline{R_f}}{\sigma_p}$$

Where,

S_p = The Sharpe ratio for portfolio p;

$\overline{R_p}$ = Average total rate of return of portfolio p;

$\overline{R_f}$ = Average risk free rate; and

σ_p = Standard deviation of total return for portfolio p.

The Treynor ratio:

$$T_p = \frac{\overline{R_p} - \overline{R_f}}{\beta_p}$$

Where,

$\overline{R_p}$ = Average total rate of return of portfolio p;

$\overline{R_f}$ = Average risk free rate; and

β_p = Beta of portfolio p.

Jensen alpha (α), or the ex-post alpha, is used to measure any abnormal return over the market index (Boo et al., 2017; Grau-carles et al., 2018; Grinblatt & Titman, 1989; Hoepner et al., 2011; Jensen, 1968; Noulas et al., 2005; Reddy et al., 2017). The Capital Asset Pricing Model (CAPM) is used to calculate the Jensen alpha as follows (Phillips, Pukthuanthong, & Rau, 2018):

$$\alpha_p = (R_p - R_f) - \beta_p(R_m - R_f)$$

Where,

α_p= Jensen alpha of portfolio p;

R_p = Total rate of return of portfolio p;

R_f = The risk free rate;

β_p = Beta of portfolio p; and

R_m = The market return.

The Modigliani measure (M^2) is used to show any incremental return gained over the market return, after adjusting the mutual funds' risk to match the risk of the index (Abdullah et al., 2007; Merdad et al., 2010). This is accomplished by using the following equation:

$$M_p^2 = \left(\frac{R_p - R_f}{\sigma_p} \times \sigma_m\right) + R_f$$

Where,

M_p^2 = Modigliani measure for portfolio p;

R_p = Total rate of return of portfolio p;

R_f = The risk free rate;

σ_p = The standard deviation of portfolio p; and

σ_m = The standard deviation of the market portfolio.

The information ratio (IR) is used to measure the amount of active return (return in excess of the benchmark return) earned per unit of active risk (incremental risk assumed over the risk of the benchmark) (Abdullah et al., 2007). The information ratio evaluate the active management skills of the mutual funds' manger by comparing the extra return earned by the mutual fund given the extra risk assumed as relative to holding the passive market index. The information ratio is calculated as:

$$IR_p = \frac{R_p - R_m}{\sigma_{(R_{p-}R_m)}}$$

Where,

R_p = Total rate of return of portfolio p;

R_m = The market return;

$R_p - R_m$ = Active return for portfolio p;

$\sigma_{(R_{p-R_m})}$ = Active risk for portfolio p.

3.1.2 Risk Measures

The standard deviation (σ) is calculated to measure total risk of mutual funds (Kothari & Warner, 2001; Mansor & Bhatti, 2011; Noulas et al., 2005). The beta (β) is used as a proxy for systematic risk (Ashraf, 2013; Hayat & Kraeussl, 2011; Hoepner et al., 2011; Jensen, 1968; Mansor & Bhatti, 2011; Naqvi et al., 2018; Noulas et al., 2005; Reddy et al., 2017). The coefficient of variation (CV) is also calculated for all groups of data (Abdullah et al., 2007; Noulas et al., 2005).

The coefficient of determination (ρ^2) is used to give an indication about the degree of diversification of the mutual funds relative to the market index (Abdullah et al., 2007; Choudhary & Chawla, 2014). The coefficient of determination is calculated as:

$$\rho^2_{p,M} = \frac{\beta_p^2 \, \sigma_M^2}{\sigma_p^2}$$

Where,

$\rho^2_{p,M}$ = The coefficient of determination of portfolio p and the market benchmark;

β_p^2 = Beta of portfolio p squared;

σ_M^2 = The standard deviation of the market portfolio squared; and

σ_p^2 = The standard deviation of portfolio p squared.

4. Data Analysis and Testing Hypotheses

The monthly return for the Islamic and conventional mutual funds, EGX30, MIEG and MXEG were tested for normality using Kolmogorov-Smirnov test, as shown in Table 1 below.

According to Table 1, the return measure for the entire data used in the analysis is normally distributed. The table shows the significance of all the Kolmogorov-Smirnov test is greater than 0.05. As mentioned by Field (2009 P.146) this indicates a normally distributed data set.

Table 1. Tests of normality

	Kolmogorov-Smirnov		
	Statistic	df	Sig.
IMF	.073	83	.200*
CMF	.093	83	.074
EGX30	.078	83	.200*
MIEG	.052	83	.200*
MXEG	.068	83	.200*

* This is a lower bound of the true significance.

Table 2 shows the descriptive statistics of the mutual funds, their benchmarks and the market index.

Table 2. Descriptive statistics (2008-2015)

	IMF	CMF	MIEG (Morgan Stanley Egyptian Islamic mutual funds index)	MXEG (Morgan Stanley Egyptian conventional mutual funds index)	EG30
Average return					
Mean	-0.000624	-0.000478	-.0012	0.000251	0.000076
Median	0.001073	0.001503	-0.001968	-0.000011	0.000759
Mode	-0.050902[a]	-0.058264[a]	-0.069621[a]	-0.065476[a]	-0.070043[a]
Range	0.081184	0.087189	0.121792	0.120973	0.123238
Minimum	-0.050902	-0.058264	-0.069621	-0.065476	-0.070043
Maximum	0.030282	0.028925	0.052171	0.055497	0.053196
Standard Deviation					
Mean	0.024624	0.025611	0.038504	0.037086	0.038481
Median	0.020169	0.020441	0.029772	0.030878	0.032353

Mode	0.003212[a]	0.002874[a]	0.004266[a]	0.005043[a]	0.004886[a]
Range	0.119084	0.125398	0.209743	0.155781	0.155489
Minimum	0.003212	0.002874	0.004266	0.005043	0.004886
Maximum	0.122296	0.128272	0.214009	0.160824	0.160375
Beta[b]					
Mean	0.610458	0.655325	0.856314	0.942420	1.000000
Median	0.589504	0.637490	0.850156	0.959754	1.000000
Mode	-0.161356[a]	0.147300[a]	-0.776319[a]	0.180726[a]	1.000000
Range	2.788309	2.258505	5.505704	1.174160	0.000000
Minimum	-0.161356	0.147300	-0.776319	0.180726	1.000000
Maximum	2.626952	2.405805	4.729385	1.354886	1.000000
Sharpe ratio					
Mean	-0.369512	-0.292781	-0.325911	-0.120860	-0.103488
Median	-0.293562	-0.266328	-0.295082	-0.181782	-0.174952
Mode	-3.601937[a]	-2.708735[a]	-3.448332[a]	-2.281667[a]	-2.194608[a]
Range	4.961333	4.054230	4.984996	7.611107	8.042091
Minimum	-3.601937	-2.708735	-3.448332	-2.281667	-2.194608
Maximum	1.359396	1.345495	1.536664	5.329440	5.847483
Jensen alpha					
Mean	-0.003324	-0.002831	-0.002828	0.000083	0.000000
Median	-0.002445	-0.002269	-0.002500	-0.000289	0.000000
Mode	-0.059713[a]	-0.052649[a]	-0.008500[a]	-0.016570[a]	0.000000
Range	0.071634	0.060935	0.194500	0.036240	0.000000
Minimum	-0.059713	-0.052649	-0.126700	-0.016570	0.000000
Maximum	0.011921	0.008286	0.067800	0.019670	0.000000
Coefficient of determination					

Mean	0.833727	0.876026	1.239962	1.002256	1.000000
Median	0.894304	0.935129	0.789301	0.984113	1.000000
Mode	0.077153[a]	0.368733[a]	0.000262[a]	0.100519[a]	1.000000
Range	0.922847	0.631267	46.463857	6.929123	0.000000
Minimum	0.077153	0.368733	0.000262	0.100519	1.000000
Maximum	1.000000	1.000000	46.46412	7.029642	1.000000

a. Multiple modes exist. The smallest value is shown

b. Data are relative to EGX30 (the Egyptian market index).

The average return of the MXEG represent the highest mean return among the other funds with a 0.002 mean monthly return followed by the EGX30. This means that the MSCI Egyptian market index for conventional funds (MXEG) has the highest return over the other mutual funds and benchmarks in the 7-year period. However, the high values of the MXEG average monthly returns range of 0.120973 indicate a large volatility in monthly returns. This is confirmed by the MXEG's high mean values of both the standard deviation and beta of 0.37086 and 0.942420, respectively. This means that the MXEG earned its high return through exposure to higher levels of risk relative to other funds.

As for risk, IMF scored the lowest standard deviation and beta with mean values of 0.024624 and 0.610458, respectively, followed by conventional funds while the MIEG had the highest standard deviation. All the funds and the MSCI indexes had beta mean values lower than the EGX30 mean value of 1.

The lower levels of risk in IMF could be explained by the investment limits that Islamic financial services is exposed to due to the prohibition of investment in certain profit earning vehicles. Thus, Islamic funds have limited access to some types of risks otherwise available to conventional funds.

The risk adjusted return measures (Sharpe ratio and Jensen alpha) indicate that IMF performed the worst among other benchmarks while the EGX30 and the MXEG were the best performers.

Finally, the MIEG and the MXEG gained the best diversification benefits with a high mean value of their coefficient of determination. The IMF had the lowest coefficient of determination indicating poor diversification.

Testing hypothesis H1: There is a statistical significant difference between the financial performance of Islamic and Conventional mutual funds.

The t-test is used on the Islamic and conventional mutual funds. Table 3 shows results for the t-test and the significance (2-tailed) for each performance measure.

Table 3. T-test for Islamic and conventional mutual funds

Performance measures	IMF mean value	CMF mean value	t-test value	Significance
Financial performance				
Return	-0.000624	-0.000478	-0.491763	0.624200
Sharpe ratio	-0.369512	-0.292781	-3.779107	0.000297*
Treynor ratio	0.073278	-0.013261	0.995220	0.322557
Jensen alpha (α)	-0.003324	-0.002831	-1.541907	0.126947
Modigliani measure (M^2)	-0.005473	-0.003805	-3.420395	0.000977*
Information ratio (IR)	-0.112463	-0.089868	-0.851973	0.396711
Risk measures				
Standard deviation (σ)	0.024624	0.025611	-2.899388	0.004796*
Beta (β)	0.610458	0.655325	-3.410113	0.001010*
Coefficient of variation (CV)	0.972522	0.355918	0.185705	0.853134
Coefficient of determination (ρ^2)	0.833727	0.876026	-4.888346	0.000005*

a. All the data are relative to EGX30 (the Egyptian market index).

b. * Significant at 0.01

The results show that conventional funds had better risk adjusted return than Islamic funds. Both the Sharpe ratio and the Modigliani measure of the conventional funds are significantly higher than the relevant values of Islamic funds.

However, IMF had lower risk than CMF. This is true for both total risk (the standard deviation) and systematic risk (beta). The low risk inherent in IMF is primarily from its prohibited access to certain types of risks.

Looking at the coefficient of determination, CMF had better diversification than IMF because the latter have limited investment exposure due to the prohibition of investment in some vehicles that are available to CMF. Hence, the first hypothesis is partially accepted because

there is a significant difference between the financial performance of Islamic and conventional mutual funds in most of the performance and risk measures.

Testing hypothesis H2: There is a statistical significant difference between the financial performance of Islamic mutual funds and Egyptian market indices (EGX30 and MIEG).

One t-test is used on the IMF and the EGX30, and another t-test on the IMF and the MIEG. Table 4 shows the test results for the IMF and the EGX30 for each performance measure.

Table 4. T-test for IMF and the EGX30

Performance measures	IMF mean value	EGX30 (Egyptian market index) mean value	t-test value	Significance
Financial performance				
Return	-0.000624	0.000076	-0.690020	0.492130
Sharpe ratio	-0.369512	-0.103488	-3.912360	0.000188*
Treynor ratio	0.073278	-0.007546	0.932832	0.353645
Jensen alpha (α)	-0.003324	————	-3.853061	0.000231*
Modigliani measure (M^2)	-0.005473	0.000076	-6.396798	0.000000*
Information ratio (IR)	-0.112463	————	-1.657663	0.101207
Risk measures				
Standard deviation (σ)	0.024624	0.038481	-9.540081	0.000000*
Beta (β)	0.610458	1.000000	-11.571343	0.000000*
Coefficient of variation (CV)	0.972522	1.857624	-0.192181	0.848075
Coefficient of determination (ρ^2)	0.833727	1.000000	-8.764373	0.000000*

a. All the data are relative to EGX30 (the Egyptian market index).

* Significant at 0.0

The Table 5 shows the test results for the IMF and the MIEG for financial performance measure.

Table 5. T-test for IMF and the MIEG

Performance measures	IMF mean value	MIEG (Morgan Stanley Egyptian Islamic mutual funds index) mean value	t-test value	Significance
Financial performance				
Return	-0.000624	-0.001185	0.380466	0.704583
Sharpe ratio	-0.369512	-0.325911	-0.556960	0.579072
Treynor ratio	0.073278	-0.015415	1.018944	0.311226
Jensen alpha (α)	-0.003324	-0.002828	-0.261738	0.794180
Modigliani measure (M^2)	-0.005473	-0.002173	-1.582756	0.117327
Information ratio (IR)	-0.112463	-0.093232	-0.217647	0.828245
Risk measures				
Standard deviation (σ)	0.024624	0.038504	-7.660532	0.000000*
Beta (β)	0.610458	0.856314	-3.824212	0.000255*
Coefficient of variation (CV)	0.972522	0.162392	0.210460	0.833831
Coefficient of determination (ρ^2)	0.833727	1.239962	-0.735649	0.464044

a. All the data are relative to EGX30 (the Egyptian market index).

* Significant at 0.01

On a risk-adjusted return basis Table 4 shows that the EGX30 outperformed IMF as showed by the results of the Sharpe ratio, Jensen alpha and Modigliani measure. Meaning that

holding the EGX30 portfolio will provide better risk-adjusted return than holding an equally weighted portfolio of Islamic equity mutual funds. The coefficient of determination statistical results reveals that the EGX30 has better diversification benefits than the IMF portfolio.

Therefore, EGX30 has better financial performance and diversification benefits than IMF; this could be due to the limited scope of financial instrument available to IMF. IMF must obey to Islamic Sharia principles and guidelines, which in turn prohibits investment in many of the financial securities available in the market index (EGX30).

However, the IMF enjoys a lower total risk (standard deviation) and systematic risk (beta) than the EGX30. This reflects the hedging opportunity offered by IMF to investors.

This result is explained by the fact that IMF do not invest in similar way as the EGX30. This result upholds Lee and Faff (2009) argument that Islamic Sharia principles control the type of risk exposure available to IMF (cited in Hoepner et al. 2011 P.832).

Consequently, there is a statistically significant difference in the financial performance and the risk measures between IMF and the EGX30.

As for the financial performance measures between the IMF and the MIEG, Table 5 shows that there is no statistical difference between the financial performance of IMF and the MIEG. All the financial performance measures statistics reveals that the IMF' performance is similar to the MIEG.

However, IMF enjoys a lower total risk (the standard deviation) and systematic risk (the beta) than the MIEG. This reflects the hedging opportunity offered by the IMF relative to different benchmarks (Abdullah et al., 2007). This support Merdad et al. (2010) results that IMF have lower beta than their benchmarks.

Thus, there is no statistical significant difference in the financial performance between IMF and Morgan Stanley Capital International indices for Egypt (MIEG). However, the second hypothesis can be partially accepted because there is a statistical significant difference in the risk measures between IMF and MIEG (shown by the standard deviation and the beta).

Testing hypothesis H3: There is a statistical significant difference between the financial performance of conventional mutual funds and Egyptian market indices (EGX30 and MXEG).

One t-test is used on the CMF and the EGX30, and another t-test on the CMF and the MXEG. Table 6 shows the test results for the CMF and the EGX30 for each performance measure.

Table 6. T-test for CMF and the EGX30

Performance measures	CMF mean value	EGX30 (Egyptian market index) mean value	t-test value	Significance 2-tailed
Financial performance				

Return	-0.000478	0.000076	-0.612386	0.541977
Sharpe ratio	-0.292781	-0.103488	-3.169331	0.002148*
Treynor ratio	-0.013261	-0.007546	-2.125904	0.036519**
Jensen alpha (α)	-0.002831	————	-3.736366	0.000344*
Modigliani measure (M^2)	-0.003805	0.000076	-5.296656	0.000001*
Information ratio (IR)	-0.089868	————	-1.216284	0.227366
Risk measures				
Standard deviation (σ)	0.025611	0.038481	-9.902761	0.000000*
Beta (β)	0.655325	1.000000	-11.938280	0.000000*
Coefficient of variation (CV)	0.355918	1.857624	-0.431197	0.667457
Coefficient of determination (ρ^2)	0.876026	1.000000	-8.287556	0.000000*

a. All the data are relative to EGX30 (the Egyptian market index).

* Significant at 0.01; ** Significant at 0.05

The Table 7 shows the test results for the CMF and the MXEG for financial performance measure.

Table 7. T-test for CMF and the MXEG

Performance measures	CMF mean value	MXEG (Morgan Stanley Egyptian conventional mutual funds index) mean value	t-test value	Significance 2-tailed
Financial performance				
Return	-0.000478	0.000251	-0.763382	0.447426
Sharpe ratio	-0.292781	-0.120860	-2.627046	0.010277**
Treynor ratio	-0.013261	-0.006661	-2.245525	0.027425**

Jensen alpha (α)	-0.002831	0.000083	-2.704334	0.008320*
Modigliani measure (M^2)	-0.003805	-0.000292	-0.001339	0.001867*
Information ratio (IR)	-0.089868	0.001584	-1.222837	0.224894
Risk measures				
Standard deviation (σ)	0.025611	0.037086	-8.445613	0.000000*
Beta (β)	0.655325	0.942420	-7.159945	0.000000*
Coefficient of variation (CV)	0.355918	-49.726003	1.208465	0.230342
Coefficient of determination (ρ^2)	0.876026	1.002256	-1.664104	0.099909***

a. All the data are relative to EGX30 (the Egyptian market index).

* Significant at 0.01; ** Significant at 0.05; *** Significant at 0.1.

On a risk-adjusted basis, the EGX30 outperformed CMF based on the results of the Sharpe ratio, the Treynor ratio, Jensen alpha and Modigliani measure. Meaning that holding the EGX30 will provide better risk-adjusted return than holding an equally weighted portfolio of conventional equity mutual funds. The coefficient of determination statistical results reveals that the EGX30 has better diversification benefits than the CMF portfolio. However, the CMF enjoy a lower total risk (the standard deviation) and systematic risk (the beta) than the EGX30.

Therefore, there is a statistically significant difference in the financial performance and the risk measures between CMF and the EGX30.

As for the financial performance measures between the CMF and the MXEG, Table 7 shows that on a risk-adjusted basis, the MXEG outperformed CMF based on the results of the Sharpe ratio, the Treynor ratio, Jensen alpha and Modigliani measure. However, the CMF enjoy a lower total risk and systematic risk than the MXEG. In addition, the MXEG had better diversification benefits than CMF as shown by the coefficient of determination.

According to the statistical results, the third hypothesis is partially accepted, as there is a statistical significant difference between the CMF and Egyptian market indices (EGX30 and MXEG) with respect to most of the financial performance and risk measures.

5. Conclusion

Through the previous analysis of the fundamental significant differences between the Islamic and conventional mutual funds, we found that CMF outperformed IMF as implied by their financial performance measures. However, IMF enjoyed lower risk levels than CMF. Thus, investing in CMF will yield a higher risk-adjusted return but, at the same time, will result in exposure to higher risk levels as compared to investing in IMF.

The analysis also revealed that both conventional and Islamic mutual funds underperformed the Egyptian market benchmark (EGX30). The risk-adjusted return measures (Sharpe ratio, Jensen alpha and Modigliani measure) of the EGX30 were better than both conventional and IMF. In addition, the EGX30 had better diversification levels than conventional and Islamic funds. However, the EGX30 had higher standalone risk (standard deviation) and systematic risk (beta) than both kinds of mutual funds.

Therefore, investing in the market index (EGX30) should yield better risk-adjusted return and diversification than investing in either Islamic or conventional mutual fund; however, such an investment will likely result in exposure to higher levels of risk than investments in either conventional or Islamic mutual funds.

The financial performance of IMF and the Morgan Stanley Capital International (MIEG) was similar. In spite, IMF had lower risk levels than the MIEG.

Finally, CMF underperformed their MSCI benchmark (MXEG) in a risk-adjusted return basis. The Sharpe ratio, the Treynor ratio, the Jensen alpha, and the Modigliani measure indicate that holding the MXEG will yield better risk-adjusted return than investment in CMF. Moreover, the MXEG provides better diversification benefits than CMF. However, investment CMF will likely expose investors to lower levels of risk than investment in the MXEG.

All in all, IMF had lower total risk (the standard deviation) and lower systematic risk (the beta) than both CMF and their benchmarks (EGX30 and MIEG). This could be explained by the fact that IMF have limited investment opportunities as compared to other conventional financial investments because managers of IMF are allowed to invest only in financial assets that comply with Islamic Sharia principles and hence, those managers cannot invest in all the financial products available in the marketplace. Furthermore, Islamic Sharia forbids trading in the products that carry a lot of uncertainty; this expose more risk control over investment types that are available to managers of IMF, thus, offering superior risk management capabilities than other benchmarks.

On the other hand, the analysis reveals that CMF and the EGX30 provide higher risk-adjusted return than do IMF. Accordingly, investing in either CMF or EGX30 can enhance the overall return of the investors' portfolio; nevertheless, this higher return is not costless since it is accompanied by a higher degree of risk.

6. Future Research

The future analysis can include mutual funds not only from Egypt but also from the whole

Middle East and North Africa (MENA) region. The analysis can also be divided into three periods: bullish, normal and bearish market periods. Furthermore, Islamic and conventional money market mutual funds can be included in future researches to be analyzed against each other and against the market benchmark.

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References

Abdullah, F., Hassan, T., & Mohamad, S. (2007). Investigation of performance of Malaysian Islamic unit trust funds. *Managerial Finance*, *33*(2), 142-153.

Ashraf, D. (2013). Performance evaluation of Islamic mutual funds relative to conventional funds. *International Journal of Islamic and Middle Eastern Finance and Management*, *6*(2), 105-121.

Bodie, Z., Kane, A., & Marcus, A. J. (2008). *Essentials of Investments* (8th ed.), pp. 83-107.

Boo, Y. L., Ee, M. S., Li, B., & Rashid, M. (2017). Islamic or conventional mutual funds: Who has the upper hand? Evidence from Malaysia. *Pacific Basin Finance Journal*, *42*, 183-192.

Choudhary, V., & Chawla, P. S. (2014). Performance Evaluation of Mutual Funds. *International Conference on Business, Law and Corporate Social Responsibility*, pp. 82-85. Phuket.

Egyptian Ministry of Finance. (2016). *91-days, After tax T-bill yield.* Retrieved January 1, 2015, from http://www.mof.gov.eg

EIMA. (2016). *Performance of Egyptian Mutual Funds* (Vol. 2007). Cairo. Retrieved from http://www.eima.org.eg/

El Ghoul, S., & Karoui, A. (2017). Does corporate social responsibility affect mutual fund performance and flows ?. *Journal of Banking and Finance*, *77*, 53-63.

Elfakhani, S., Hassan, K. M., & Sidani, Y. (2005). *Comparative Performance of Islamic Versus Secular Mutual Funds*.

ElKhamlichi, A., Laaradh, K., Arouri, M., & Teulon, F. (2014). *Performance Persistence of Islamic Equity Mutual Funds*. Paris.

El-Masry, A. A., de Mingo-López, D. V., Matallín-Sáez, J. C., & Tortosa-Ausina, E. (2016). Environmental conditions, fund characteristics, and Islamic orientation: An analysis of mutual fund performance for the MENA region. *Journal of Economic Behavior and Organization*, *132*, 174-197.

Fama, E. F., & French, K. R. (2008). *Mutual Fund Performance*.

Field, A. (2009). *Discovering Statistics Using SPSS* (3rd ed.). SAGE Publications.

Grau-Carles, P., Doncel, L. M., & Sainz, J. (2018). Stability in mutual fund performance rankings : A new proposal. *International Review of Economics and Finance*, 1-10.

Grinblatt, M., & Titman, S. (1989). Mutual Fund Performance: An Analysis of Quarterly Portfolio Holdings. *The Journal of Business*, *62*(3), 393-416.

Hammami, Y., & Oueslati, A. (2017). Measuring skill in the Islamic mutual fund industry: Evidence from GCC countries. *Journal of International Financial Markets, Institutions and Money*, *49*, 15-31.

Hassan, J. F. R. M., & Merdad, H. J. (2012). Non-parametric performance measurement of international and Islamic mutual funds. *Accounting Research Journal*, *25*(3), 208-226.

Hayat, R., & Kraeussl, R. (2011). Risk and return characteristics of Islamic equity funds. *Elsevier*, *12*(2), 189-203.

Hoepner, A. G. F., Rammal, H. G., & Rezec, M. (2011). Islamic mutual funds' financial performance and international investment style: evidence from 20 countries. *The European Journal of Finance*, *17*(9-10), 829-850.

Jensen, M. C. (1968). The Performance of Mutual Funds in the Period 1945-1964. *The Journal of Finance*, *23*(2), 389-416.

Kothari, S. P., & Warner, J. B. (2001). Evaluating Mutual Fund Performance. *The Journal of Finance*, *LVI*(5), 1985-2010.

Lesser, K., & Walkshäusl, C. (2018). International islamic funds. *Review of Financial Economics*, *36*(1).

Mansor, F., & Bhatti, I. M. (2011). Risk and Return Analysis on Performance of the Islamic mutual funds : Evidence from Malaysia. *Global Economy and Finance Journal*, *4*(1), 19-31.

Matallín-Sáez, J. C., Soler-Domínguez, A., & Tortosa-Ausina, E. (2016). On the robustness of persistence in mutual fund performance. *North American Journal of Economics and Finance*, *36*, 192-231.

Merdad, H., Hassan, K. M., & Alhenawi, Y. (2010). Islamic Versus Conventional Mutual Funds Performance in Saudi Arabia : A Case Study. *Islamic Economics*, *23*(2), 157-193.

MSCI. (2016). *MSCI Website.* Retrieved from https://www.msci.com/

Naqvi, B., Rizvi, S. K. A., Mirza, N., & Reddy, K. (2018). Religion based investing and illusion of Islamic Alpha and Beta. *Pacific Basin Finance Journal*, *52*, 82-106.

Noulas, A. G., Papanastasiou, J. A., & Lazaridis, J. (2005). Performance of Mutual Funds. *Managerial Finance*, *31*(2), 101-112.

Phillips, B., Pukthuanthong, K., & Rau, P. R. (2018). Size does not matter : Diseconomies of scale in the mutual fund industry revisited. *Journal of Banking and Finance*, *88*, 357-365.

Reddy, K., Mirza, N., Naqvi, B., & Fu, M. (2017, July). Comparative risk adjusted performance of Islamic, socially responsible and conventional funds: Evidence from United Kingdom. *Economic Modelling*, *66*, 233-243.

Sánchez-González, C., Sarto, J. L., & Vicente, L. (2017). The efficiency of mutual fund companies: Evidence from an innovative network SBM approach. *Omega*, *71*, 114-128.

Shanmugam, B., & Zahari, Z. R. (2009). *A Primer On Islamic Finance*. Research Foundation Of CFA Institute.

Sharpe, W. F. (1966). Mutual Fund Performance. *The Journal of Business*, *39*(1), 119-138.

Wagner, M., & Margaritis, D. (2017). All about fun (ds) in emerging markets ? The case of equity mutual funds. *Emerging Markets Review*, *33*, 62-78.