

# LONG-RUN MARKET PERFORMANCE OF INITIAL PUBLIC OFFERINGS IN SAUDI ARABIA: DOES SHARIA-COMPLIANT STATUS MATTER?

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## Abstract

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This research presents a comprehensive analysis of initial public offerings (IPOs) in Saudi Arabia, using a sample of 72 IPOs examined during the period between 2004 and September 2010. To compute the market performance of the IPOs, we split the sample into two sub-samples: sharia-compliant and non-sharia-compliant and we use two methods of calculations which are buy and hold abnormal returns (BHAR) and cumulative abnormal returns (CAR). In contrast to the majority of reported outcomes worldwide, our results show that based on one-year after-market performance, on average, underperformance does not exist in the Saudi market. The regression analysis shows that the factors driving long-run market performance include initial return and ownership structure, firm level risk, age and sharia-compliant status. The highlight of this paper, however, underscored using T-test for equality of means that was performed on the two sub-samples aftermarket adjusted returns is that Sharia-compliant status significantly alters the level of one-year market performance. This result supports our hypothesis that sharia-compliant firms will enjoy superior non-negative returns compared to non-sharia compliant firms, and supports the over-reaction hypothesis. Based on this result, we introduce a new factor which we call non-sharia-compliant underperformance.

**Keywords:** IPOs, Performance, Saudi, Sharia Compliance, Islamic.

**Acknowledgement:** both authors contributed equally to this work and are listed in alphabetical order.

## 1. INTRODUCTION

This research is a comprehensive analysis of IPOs in Saudi Arabia. Saudi Arabia is an oil-based economy that possesses 20% of the world's proven oil reserves, and 29% of the production of the Organization of the Petroleum Exporting Countries (OPEC). Saudi Arabia is the largest exporter of oil worldwide, and plays a significant role in OPEC, and also a member of the Group of Twenty (G20). The Saudi Arabian capital market, which is managed by Tadawul, ranks as the 11th largest exchange, and is expected to be the sixth largest emerging market in terms of market capitalisation in the world (Euromoney, 2011). However, a little attention has been paid to this market and the pieces of research on the Saudi IPO activity have not been many to date. The first objective of this research is to analyze the performance of IPOs with reference to their long-run adjusted returns against the Tasi/Tadawul

market index. The second objective is to investigate whether sharia-compliant status will alter the long-run market performance patterns of IPOs in Saudi Arabia. Sharia-compliant status refers to the Islamic law that companies must comply with to be legitimate, or Halal (Rahim and Yong, 2010, El-Gamal, 2000). Finally, we will examine several factors that influence long-run market performance, including age, concentration of ownership, size effects, the relationship between the initial return and the long-run market performance, firm risk.

The three key questions that need to be answered regarding long-run performance in the Saudi Arabian market are: Does the underperformance phenomenon exist in the Saudi Arabian market? And if so, then at what level? Does sharia-compliant status of firms alters the one year after market return pattern in Saudi Arabia? What factors have an influence on the return patterns of IPOs in Saudi Arabia?

The remainder of this paper is organised as follows: Section 2 reviews the literature, Section 3 presents the data and methodology, Section 4 contains the empirical analysis and the subsequent results, and Section 5 presents the conclusion and recommendations of the paper.

## 2. LITERATURE REVIEW

Prior studies that have been conducted on the main areas raised in this paper on long-run market performance, IPOs in Saudi Arabia, and the effect of sharia-compliant status. Studies of long-run performance of IPOs have offered mixed results (Ang et al., 2007, Chi et al., 2010, Drobetz, 2005, Gompers and Lerner, 2003, Ritter, 1991, Ritter and Welch, 2002, Bondt and Thaler, 1985, Miller and Reilly, 1987, Schultz, 2003, Jelic et al., 2001, Kim, 1995, Kooli and Suret, 2004, Halil, 2000, Al-Hassan et al., 2007). Some studies have found the existence of negative long-run market performance for periods of two to five years after listing on the exchange. Other studies have found positive after-market performance, but mainly when they examined the privatisation of IPOs. In this study, we will only focus on privately-owned firms.

In his study covering 6,249 IPOs that took place in the American market between 1980 and 2001, Ritter (2002) found that the absolute three-year Buy and Hold Return (BHR) was 22.6%. However, the return became negative when adjusted to the market movement. At -23.4% in the Canadian market during the period between 1991 and 1998, the one-year Cumulative Abnormal Return (CAR) and Buy and Hold Abnormal Return (BHAR) were -10.79% and -11.45%, respectively, in a sample of 445 IPOs (Kooli and Suret, 2004). In New Zealand, Chi et al (2010) studied the after-market performance of 105 IPOs from 1991 to 2005, and found that the three-year CAR and BHAR were -42.32% and -27.81%, respectively. In the Italian market, during the period 1985 to 1999, the one-year BHAR was -7.52% with a strong negative relation between the initial return and the after-market return (Arosio, 2001).

In emerging markets, the results are mixed, with some enjoying a positive abnormal return, as evidenced by the Malaysian market, where one-year CAR was 8.973% during the period from 1980 to 1995 (Jelic et al., 2001, Dawson, 1987). Similar evidence has been found in the Istanbul stock market (Halil, 2000) and in the Korean market (Kim, 1995). Conversely, some researchers have found a negative abnormal return such as the results found in Hong Kong and Singapore (Dawson, 1987). However, Ahmad-Zaluki, and Boon Kect (2012) studying the short-term and long-term investment performance of Malaysian IPO companies listed on the MESDAQ Market, found, contrary to previous studies on the Malaysian market, Malaysian companies underperform in the market over the long run, according to analysis using both the CAR and the BHAR methods. They concluded that investors, while achieving high gains in the short run, fare rather poorly in the long run.

Another emerging market, China, was studied by Chen (2015) who examined the effect of investment banks on the long-run stock price performance for the period 1993 to 2010 for IPOs in the Chinese. Chen (2015) found that the investment banks reputation had no impact on the 3 year

BHARs during the pre-reform period<sup>14</sup>, but during the post-reform period<sup>15</sup> a significant positive impact was reported.

**Initial Public Offerings in Saudi Arabia.** Other papers closely related to the current study are Al-Hassan et al. (2007) and Abu Bakar and Rosbi (2012). For one-year market performance, Al-Hassan et al. (2007) aimed to answer two main questions. The first of these was: do IPOs sustain their initial abnormal returns and provide investors with positive abnormal returns over a long period? The authors found that the firms considered in their analysis did not underperform the market over the one-year horizon when the initial return is included. The long-run return exceeds 280% using BHAR and CAR. However, when the initial return is excluded, the sample generally shows negative average returns over the one-year horizon. The average of the market returns are -50 and -23% using the CAR and BHAR methods, respectively. The second question that the authors addressed in their paper was: which factors influence the long-run after-market performance? Al-Hassan et al. (2007) propose that these factors include market timing, over-subscription level and market volatility.

One of the limitations of Al-Hassan et al.'s (2007) paper, however, is that the Saudi Arabian market accounts for only 11 IPOs (23%) out of the total number of observations, although this market makes up over half (56%) of the total market capitalization of the GCC markets. In addition, their paper considers IPOs in Saudi Arabia that were conducted mainly in the bull market period.

Abu Bakar and Sofian Rosbi (2012), however, examined the Malaysian stock market from 2006 to 2010 with consideration of the long term performance (1-3 years) of sharia compliant company IPOs. Using the index of the FTSE Bursa Malaysia Market as a benchmark, they concluded their study stating that the sharia compliant IPOs they studied had a long term performance that was comparable or better than the index

With the exception of Al-Hassan et al. (2007) and Abu Bakar and Sofian Rosbi (2012), and despite the several studies on the long term performance of IPOs globally, and also despite the increasing importance of Islamic finance worldwide, there seems to be no studies which have been conducted on the Sharia compliant IPOs long-term performance. In our paper, which is a direct response to this important research gap, we will analyse 72 IPOs conducted between 2004 and September 2010, examining their long-run one-year after-market performance in both bear and bull markets to provide a better analysis of the phenomenon. We also investigate the influence of several factors, and whether they shape the long-run market performance of IPOs. These factors include firm-level risk; the size of the firm; ownership structure and the effect of sharia-compliant status. The Saudi market is significant for a number of reasons some of which mentioned above in the introduction section. It is also an excellent context for conducting empirical research in Islamic finance as it has a well-developed Islamic finance economy

<sup>14</sup> The quota system period from January 1st, 1993 to April 22nd, 2001.

<sup>15</sup> The approval system period from April 23rd, 2001 to December 31st, 2010

(2nd in the world<sup>16</sup>) and the largest Islamic banking market at 31.7% of the global market<sup>17</sup>.

### 3. DATA, METHODOLOGY AND HYPOTHESES

#### 3.1. Data

This paper is a comprehensive analysis of IPOs conducted between 2004 and September 2010 in the Saudi Arabian market. The sample consists of 72 IPOs<sup>18</sup>, analysed for one-year after-market performance. This research covers IPO transactions that took place after the formal formation of the Capital Market Authority (CMA) in July 2003, which made companies' and market data publicly available. All of the data used in this research, including market data and prices, are sourced through the DataStream database, Thomson Banker and the Saudi Stock Exchange (Tadawul) database (Tadawul.com.sa). All of the IPO documentation is sourced from the CMA official website (www.cma.org.sa). To distinguish between compliant and non-compliant firms, we use the list issued by the Sharia Board of Alrajhi Bank, the largest Islamic bank in Saudi Arabia and the GCC states.

#### 3.2. Methodology

To compute the market performance of the IPOs in Saudi Arabia, we use the closing price on the first day of listing as the beginning price to avoid any under-pricing effects, which can influence the market performance of the stock. Two methods are used.

The first method is the one-year CAR, which is calculated as follows:

$$ARs = Rs - Ri \quad (1)$$

where,  $Rs$  is monthly stock return;  $Ri$  is monthly market index (TASI) return, and  $ARs$  is monthly abnormal return made by the stock after subtracting the index return and then:  $CARs = \text{SUM}$  (12 month  $ARs$ ).

The second method is the one-year BHAR. We use the daily return, and Tasi/Tadawul is the market index:

$$BHARi = BHRs - BHRi, \quad (2)$$

where,  $BHARi$  is  $BHAR$  made by the stock after subtracting the index BHR from the stock BHR,  $BHRs$ ,  $BHR$  made by the stock price, and  $BHRi$  is BHR made by the market index (Tasi).

To investigate whether sharia-compliant status alters the long-run market performance and the initial return patterns of IPOs in Saudi Arabia, the sample is classified into two sub-samples: sharia-compliant and non-sharia-compliant. Based on this, we make the following assumptions:

1) We expect larger IPO companies to have a superior performance to smaller IPO companies. This is consistent with many other IPO studies conducted in different markets worldwide (Alqahtani & Mayes, 2015; Chang, Chen, Chi, &

Young, 2008; Rajan & Servaes, 2002; Ritter, 1984; Yong & Rahim, 2010).

2) According to the over-reaction hypothesis suggested by De Bondt and Thaler (1985), investors would be focusing too much attention on the short-run forecast when valuing the stock, which would result in a high initial return and a low long-term return if the short-run forecast was not good. Therefore, it is expected that there will be a negative relationship between initial returns and the long-term market performance.

3) Based on the risk-return trade-off theory, the company with a high firm level risk is expected to experience a higher return (Bradley & Jordan, 2002; Jegadeesh, Weinstein, & Welch, 1993; Yong & Rahim, 2010).

4) There is a positive relationship between the level of ownership concentration and return. The largest owners are concerned about the company's performance, which in turn assures the market that the management is well monitored (Bubna & Prabhala, 2007; Field & Sheehan, 2004).

5) Ritter (1991) suggests that start-up firms would experience relatively poorer market performance. He states that start-up firms would be less certain about their future operation, and will suffer from a lack of necessary professional management to operate successfully.

6) Due to the high level of under-pricing in the non-sharia-compliant share prices on the first day of listing, shares soon become over-valued, which leads to a decline in the long run (Alqahtani & Mayes, 2015 and Boulanouar & Alqahtani, 2016).

#### 3.3. Hypotheses

Based on the above assumptions, we form the following hypotheses:

*H1:* There is a negative relationship between the size of the firm and the after-market return of the stock on the first day of trading.

*H2:* Stocks with lower initial return would have superior after-market performance to stocks with higher initial return.

*H3:* There is a positive relationship between the firm level risk and return to investors.

*H4:* Companies with a concentrated ownership structure experience a superior level of returns.

*H5:* Non-start-up firms would experience superior after-market performance to start-up firms.

*H6:* Non-sharia-compliant firms will experience poorer after-market performance than sharia-compliant firms.

OLS regressions are performed to investigate which of the previously described factors affected the long-run market performance of IPOs in Saudi Arabia during the period covered by this paper. We use the CARs and BHARs separately as dependent variable.

The following independent variables are examined:

For size (COMsize) we use the natural logarithm of the market value of all shares during the subscription period. We assume that the offer will be fully subscribed at a fixed offer price. The proxy for size is calculated as follows:  $\text{COMsize} = (\text{Total no. of shares} * \text{offer price})$ .

For  $H2$ , we use the AIR as the independent variable.

Firm level risk ( $FIRMrisk$ ) is simply the standard deviation of the daily share price of the company for the period of 12 months.

<sup>16</sup> According to Thomson Reuters's 2013 Islamic Finance Development Indicator.

<sup>17</sup> According to Ernest & Young's 2015 World Islamic Banking Competitiveness report.

<sup>18</sup> The bulk of the IPOs (48) occurred between 2006 and 2008, with the remaining 6 during 2004–2005 and a further 18 between 2009 and 2011.

For AGE, a T-test is conducted on the start-up and non-start-up firms' after-market return to investigate if the age factor has a significant effect on IPOs in Saudi market.

For H6, a T-test for equality of means is performed on the two sub-samples after-market adjusted returns to examine whether the sharia-compliant status alters the long-run return of IPOs in Saudi.

#### 4. EMPIRICAL ANALYSIS AND RESULTS

##### 4.1. Long-Run Performance

Using the CAR and BHAR methods, we examine the one-year after-market performance for our sample of 72 IPOs conducted between 2004 and Sep 2010.

The result on one-year after-market performance shows that there was no underperformance in the Saudi Arabian market (Table 1). The average one-year CAR adjusted against the Tasi/Tadawul market index was positive at 5.64%, and average BHAR was negative at only -1.75%. Both were significant at the 1% level. This result is not in line with the majority of evidence worldwide, which suggests that firms usually underperform in the period after listing in the market (for example, Ritter, 1991). It is interesting to

note that the returns change based on the method of measurement, which is consistent with the findings of Gompers and Lerner (2003), who found that the return was negative when BHAR was used, and positive when CAR was utilised.

**Table 1.** After-market performance using two methods

	CAR	BHAR
MEAN	5.64%	-1.75%
MEDAIN	-1.94%	-14.31%
MAX	209.23%	207.09%
MINI	-110%	-102.84%
Standard deviation	0.6121	0.5671

##### 4.2. Descriptive statistics

Table 2 shows descriptive statistics for the factors we investigate in this paper for their effect on the market performance of new IPOs in Saudi Arabia. We examine a number of independent variables including the initial return after adjusting against the market movements, the firm level risk, the proportion of shares held by the five largest shareholders, and the size of firm, against the dependent variables CAR and BHAR.

**Table 2.** Descriptive statistics for all variables

	N	Minimum	Maximum	Mean	Standard Deviation
CAR	72	-1.0967	2.0923	.056446	.6120804
BHAR	72	-1.0284	2.0709	-.017486	.5670852
AIR	72	.00	14.10	2.6714	3.13824
FIRMrisk	72	.87	46.95	13.8206	11.29879
Ownership	72	.03	.95	.5383	.17445
COMsize	72	8.00	11.00	8.9167	.81793

##### 4.3. Regression analysis for market performance.

The equation for the regression analysis is as follows:  $CAR/BHAR = constant_i + AIR + FIRMrisk + COMbloc + COMsize + ei$

Table 3 shows that three of the four independent variables determine the market performance of new IPOs in the Saudi Arabian market.

**Table 3.** Regression results for the two methods

	CAR	BHAR
Intercept	.2678	-.0045
	.3537	-.0064
	-.1147	-.1046
AIR	(-4.8968)***	(-4.8042)***
	.0316	.0281
FIRMrisk	(5.3487)***	(5.1159)***
	-.6494	-.6802
COMbloc	(-1.8064)*	(-2.0355)**
	.0009	.0274
COMsize	.0105	.3419
F test	10.7280	10.5461
R-squared	.3904	.3864
Adjusted R-squared	.3540	.3497

Note: \*\*\* indicates significance at the 1% level; \*\* at the 5% level, and \* at the 10% level.

The first factor driving the after-market abnormal return is the AIR. There is a negative correlation between the initial return and the one-year after-market performance, statistically significant at the 1% level. This result is in line with the adverse selection theory, which suggests that

poorer quality companies are highly to price their issues at a greater discount than higher quality firms (Chi et al., 2010). In addition, this result supports Bondt and Thaler (1985) over-reaction hypothesis, which states that there is a negative relationship between initial return and long-run market performance.

The second factor found to influence the long-run market performance is the volatility of the stock price (firm level risk) in the market during the first year of going public. The regression result shows that there is a positive relationship between the dependent variable and the independent variable at the 1% significance level. This result supports our H<sub>3</sub>, which is based on the risk-return trade-off theory, that risk and return are positively correlated.

The third factor found to drive long-run market performance is the ownership structure. The results do not support our hypothesis that there would be a positive relationship between the concentration of ownership and market performance in the Saudi Arabian market. Instead, we found that there is a negative correlation between the two variables, statistically significant at the 5% level, which means that a high level of ownership concentration will result in lower market performance.

A possible reason for the negative relationship may be the information asymmetry issue present in the Saudi Arabian market, as in most other emerging markets. Information asymmetry means that one group of investors has superior information about the firm's prospects and performance than other groups, such as stakeholders and creditors (Tirole,

2006). In this sense, we can hypothesise that shareholders are unsatisfied about the level of disclosure and announcement, and associate it positively with the level of ownership concentration. In other words, shareholders believe that the higher the level of ownership concentration, the more the controlling group of investors will take advantage of the information they possess.

The size of the firm does not seem to have any effect on the market performance of the firm. R-squared for CAR and BHAR is 0.390 and 0.386 respectively. This result means that the variables we use can explain approximately 39% of the total returns.

#### 4.4. Age effects on the long-run market performance

In this section, we categorise the sample, based on the firm's age, into two sub-samples: start-ups (newly formed firms) and non-start-ups (existing firms with a track record).

**Table 4.** Result of the two sub-samples based on firms' age

	<i>Non-start-ups</i>	<i>Start-ups</i>
One-year CAR	11.19%	1.91%
Standard deviation	0.5670	0.6446
t-stat	0.64	-
One-year BHAR	3.16%	-5.06%
Standard deviation	0.4373	0.6429
t-stat	0.65	-
Observations	29	43

Note: \*\*\* indicates significance at the 1% level; \*\* at the 5% level, and \* at the 10% level.

Table 4 shows that existing firms enjoy superior performance to new firms. CAR and BHAR for non-start-ups are 11.19% and 3.16% respectively, and 1.91 and -5.06% for start-ups. This result supports our earlier hypothesis, that start-ups would experience negative market performance, and non-start-ups would enjoy superior performance, as found by Ritter (1991) and Jain (1996).

#### 4.5. Sharia-compliance effect on the long-run market performance

First, we classify the total sample as either sharia-compliant or non-sharia-compliant. Next, we conduct a T-test on the two sub-samples to determine if sharia-compliant status alters the after-market performance during the first year of listing on the market.

Table 5 shows that sharia-compliant status alters the one-year market performance significantly.

**Table 5.** Average returns according to sharia-compliant status

	<i>Sharia-compliant</i>	<i>Non-sharia-compliant</i>
One-year CAR	15.58%	-9.97%
Standard deviation	.6500	.5206
t-stat	1.84*	-
One-year BHAR	7.88%	-16.88%
Standard deviation	.5952	.4925
t-stat	2.05**	-
Observations	44	28

Note: \*\*\* indicates significance at the 1% level; \*\* at the 5% level, and \* at the 10% level.

The average CAR and BHAR for sharia-compliant firms were positive at 15.58% and 7.88%

respectively, and both were significant at the 5% level. Non-sharia-compliant firms experienced negative performance at -9.97% CAR, and -16.88% BHAR. Both were significant at the 1% level.

This result supports our hypothesis that sharia-compliant firms will enjoy superior non-negative returns to non-sharia compliant firms, and supports the over-reaction hypothesis.

## 5. CONCLUSION

This paper is a comprehensive analysis of IPOs in Saudi Arabia, using a sample of 72 IPOs conducted during the period from 2004 to September 2010. The result on one-year after-market performance shows that there was no underperformance in the Saudi Arabian market. The average one-year CAR adjusted against the Tasi/Tadawul market index was positive at 5.64%, and average BHAR was negative, at only -1.75%. This result is not in line with the majority of evidence worldwide, which suggests that firms usually underperform in the period after listing (Ritter, 1991). However, it is consistent with evidence from several emerging markets. Our finding does not support Ritter's (1991) argument that IPOs are not under-priced before going public because they usually underperform later on, as this is not the case in the Saudi Arabian market. Therefore, and based on our results, we argue that IPOs in the Saudi Arabian market are significantly under-priced by their issuers. The regression analysis shows that there was a negative relationship between two factors: initial return and ownership structure. The negative correlation between initial return and after-market performance supports the over-reaction hypothesis of Bondt and Thaler, (1985). One factor that was positively correlated with long-run market performance is firm level risk. This is consistent with the risk-return trade-off theory. Age did not alter the one-year market performance; non-start-up firms enjoyed superior performance to new firms. CAR and BHAR for non-start-ups were 11.19% and 3.16% respectively, and 1.91% and -5.06% for start-ups.

The highlight of this paper is however the effect of sharia-compliant status on the long-run market performance. We found that the average CAR and BHAR for sharia-compliant firms were positive, at 15.58% and 7.88% respectively. Non-sharia-compliant firms experienced negative performance at -9.97% CAR, and -16.88% BHAR. Based on the results of this paper we introduce a new factor of the underperformance phenomenon, which we call non-sharia-compliant underperformance. Further research is needed to prove the effect of sharia-compliant status in the long-run performance of IPOs in other Islamic countries, and more firms, from different industry sectors, need to be examined to identify the market characteristics that drive the returns. Also future studies should extend the time horizon beyond one year, for example, to two, three or five years after listing on the market. Furthermore, the results of the regression analysis found initial return, ownership structure, firm level risk, age and sharia-compliant status to drive long-run market performance, pointing to the importance of controlling for other factors. As a result, we call for further research to investigate other factors that would shed more light on what explains long term

market performance of sharia compliant IPOs in the Saudi market

Despite the limitations of this research, several recommendations can be derived from its results. Based on the results of sharia compliant status, in Saudi Arabia as a conservative Muslim country where 100% of the total population are Muslim, sharia compliance status should be taken into account by foreign investors who consider rising equity in the Saudi market and also private firms that consider going public that they might experience a negative after-market performance if they do not take the sharia compliant status into consideration.

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