THE OWNERSHIP CHANGE AND IPO FIRM PERFORMANCE: EVIDENCE FROM THE SIX EMERGING MARKETS

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Abstract

This paper investigates the financial and operating performance of IPOs made in the Gulf Cooperation Council (GCC) region for the period of 2003 to 2010. The results suggest that IPO firm performance declines after going public after ownerships are altered in IPOs. The deterioration is associated with the firm transition from private into public ownership perhaps due to increasing agency costs. We also find evidence that supports the lack of opportunity theory because the firm's growth in sales and capital expenditure in the pre-IPO period is much stronger than the post-IPO period. We also find that size of the firm is positively significant to IPO firm performance.

Keywords: Initial Public Offerings, Gulf Cooperation Council, IPO Firm Performance, Ownership Structure

JEL Classification: G32, G34

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1 Introduction

This paper investigates the performance of 52 initial public offerings (IPOs) made by the Gulf Cooperation Council (GCC) between 2003 and 2010. It is well documented that IPO operating performance declines in other markets as the company makes the transition from private to public ownership. However, studies into emerging markets, such as GCC countries, are very scant when compared to those undertaken in advanced economies. One reason for this scarcity is a lack of available data. The large increase in the number of IPOs in the GCC between 2003 and 2010 has caused the required data to become available and allow the authors to investigate the issue in the six emerging markets closely.

Prior researchers preferred to use stock-price based measures rather than accounting measures when assessing the IPO performance. For example, Al-Hassan, Delgado and Omran (2010) examine the stock returns of 47 IPOs in the GCC and document underpricing of 290%, as well as poor long-run returns. However, these authors did not examine the operating performance (the accounting-based measures). Wang (2005) argues that accounting-based measures are more reliable than stock-based measures because of the inefficiency that characterizes stock markets, especially in emerging markets, where the stock-price does not necessarily reflect available information. Therefore, this study aims to fill this gap.

The contributions of this paper to the literature are fourfold. Based on our best knowledge, this is the first study, using hand collected data, to examine the operating performance of a sample of IPOs from the GCC region. Secondly, a new technique to examine the operating performance of IPOs is used by employing a model based on panel data. Thirdly and most importantly, the paper discusses several theories and provides an explanation for the performance change of IPOs. For these markets, this is the first study to examine the relationship between the ownership change and firm performance while studies in developed markets document mixed evidence. Our findings provide new insights about IPO performance and then contribute to literature.

Overall, our results generally are consistent with those of previous authors who suggest that the IPO performance declines in the post-IPO period. This deterioration begins in the year the company goes public and intensifies in magnitude in subsequent years. One-year after the IPO, the GCC IPOs suffered a 43% decline in their return on assets (ROA). On average comparison, the ROA is -47% between the years before and after the IPO. In addition, contrary to Jain and Kini (1994), we find that the performance decline is actually linked to the lack of opportunities hypothesis. Although IPOs in the GCC have maintained levels of growth in sales and capital expenditures similar to other markets, we find that the growth rate in the pre-IPO period is much better and

stronger than that in the post-IPO period. This finding supports the theory of a lack of opportunities.

Furthermore, the relationship between change in performance of IPOs and change in ownership structure is also examined. The results show a negative relationship between the performance and ownership of firms. For each increase in retention by the original owners, the IPO performance decreases perhaps because of the increasing agency cost between the original owners and the new shareholders. Also, a significant positive link is found between the size of the IPO and performance, which is consistent with Mikkelson et al., (1997) finding that large IPO tends to outperform small IPO. Finally, we do not find significant relationship between the age of the company and performance.

The rest of the paper is organized as follows. Section 2 explains related literature and the methodology and derives testable hypotheses. Section 3 discusses data sources and provides descriptive statistics. Section 4 contains the empirical results and discussion and we conclude the paper in Section 5.

2 Relevant literature, methodology and hypotheses

2.1 IPO operating performance measures

In IPO literature, the return on assets (ROA) is the most used ratio to evaluate the performance of IPOs (e.g., Jain & Kini, 1994; Mikkelson et al. 1997; Wang, 2005; Balatbat et al. 2004). This ratio assesses the efficiency of the firm in utilizing its assets to generate income. A higher ratio after the IPO is considered an indication of a better performance, and vice versa. The ROA ratio can be calculated using the following equation:

$$ROA = (\text{Profit after depreciation, interest and tax (zakat}^{47}\text{)} / \text{Total Assets}) * 100 \quad (1)$$

The second mostly used ratio to measure the performance of firms is the return on sales (ROS) or profit margin. It has been argued in the literature that ROS is a better measurement of profitability because IPO firms show a large increase in assets but no immediate increase in income. Thus, the profitability of IPOs should be evaluated relative to the net sales. In this paper, both ratios are used to assess the performance. The ROS can be calculated using the following equation:

$$ROS = (\text{Profit after depreciation, interest and tax (Zakat)} / \text{Total Sales}) * 100 \quad (2)$$

Additionally, the asset turnover, AT (sales to assets ratio) is used to measure the efficiency of the firms. Asset turnover is an important ratio used to analyse how assets are utilized to produce revenues, and it is indicative of the rate in which the companies are increasing their sales relative to their increase in assets. Asset turnover can be calculated using the following equation:

$$AT = (\text{Net Sales} / \text{Total Assets}) * 100 \quad (3)$$

This paper implements the matched pairs approach by comparing the performance of the IPO before and after the IPO event as previous authors of IPO and privatisation literatures have used this method widely. It has been referred to as "MNR methodology" in privatisation literature because Megginson, Nash and Randenborgh were the first to use this method in 1994. The same method has also been used in IPO literature by adopting a performance comparison pre- and post-IPO. The matched pairs approach compares the change in performance of the firms between two periods, before and after the issuance, to draw a conclusion about the variation in performance. If the performance in the post-IPO period is better, it is appropriate to conclude that the IPO has improved firm performance. However, if the post-IPO is worse, then it is possible to infer that the IPO has a negative effect on the performance of firms. Based on previous studies, the time horizon in this paper (between 2003 and 2010) will be divided into three segments for each IPO.

The first period is the pre-IPO, labelled as "–years", which are the years before the company goes public. For example, for a company that went public in 2006, its pre-IPO years will be 2005, 2004 and 2003, which correspond to -1, -2 and -3, respectively. The second period is the IPO year when the IPO event took place, which is labelled as "Y0". In the previous example, 2006 is the year when the company went public; therefore, 2006 is labelled as Y0. Finally, the third segment is the post-IPO period, which is labelled as "+years". These are the years following the IPO when the company becomes publicly listed. For a company that went public in 2006, the years 2007, 2008, 2009, 2010 and 2011 are the post-IPO period and correspond to +1, +2, +3, +4 and +5, respectively.

Importantly, there is no consensus on how to divide the timeframe and how many years to include before or after the IPO. Prior studies have used different criteria that are based on the objectives, data availability and circumstances. For example, Jain and Kini (1994) compared Y-1 (the base year for comparison) to each of the following five post-IPO years, including Y0. Wang (2005) divided his time interval differently by comparing Y-1 to Y+1, and again by comparing the average (-3, -2,-1) to the average (+1, +2, +3). As a result, a performance "time line" will be developed that reflects the performance change from before to after the IPO.

We propose 2010 as the cut-off date to allow for a minimum of one post-IPO year by the end of the 2011 fiscal year for the GCC companies that went

[47] Zakat is taxation at 2.5% and is deducted from the company's earnings.

public in 2010. Companies that went public before 2010 will have included additional years in the post-IPO. The average number of years before the IPO is always three because all IPOs in the GCC have revealed data from three years pre-IPO. The year of the IPO or Y0 will be excluded from the comparison because it has mixed ownership. The change in each variable between the two periods and for every company will be examined using the median changes. Jain and Kini (1994) suggest that because operating performance may be skewed and the mean values are particularly sensitive to outliers, the use of the median is a better choice for the central location. The analysis will be based on the raw data due to the limited number of listed companies in the GCC[48]. The last step in the analysis is to test for any significance change. The Wilcoxon signed rank test for the median difference is used to test whether the difference between the pre- and post-IPO periods is significantly different from zero.

2.2 Theoretical framework and hypothesis development

Previous studies in developed and developing countries on the topic of IPOs document a significant post-IPO performance decline. For example, this operating performance decline is found in the U.S. by Jain and Kini (1994); Mikkelson et al. (1997), in Japan by Cai & Wei (1997); Kutsuna et al. (2002), in Italy by Pagano et al. (1998), in Korea by Chun et al. (2000), in Thailand by Kim et al. (2004), and in Saudi Arabia by Al-Barrak (2005); Alanazi et al. (2011). Based on the majority of the findings in literature, firm performance decline is expected for IPOs in the GCC.

Hypothesis 1: The operating performance of GCC IPOs deteriorates after the IPO (pre-IPO performance is better than post-IPO).

Jain and Kini (1994) argue that the decline in performance could be explained by owners/managers failing to generate the same level of pre-IPO, positive Net Present Value (NPV) projects or by not maintaining the same level of capital expenditures. Alternatively, performance might decline while investment is occurring. The overall conclusion of these authors does not support the theory of lack of opportunities because they find that the performance declines despite a large growth in sales and capital expenditure. However, it is important to mention that they have measured the growth in sales from year -1 to year +1; therefore they are actually measuring the growth rate between those two years instead of measuring the growth difference between the two periods pre- and post IPO separately. In this study, the growth rates of the two periods are compared separately, in addition to measuring the growth between Y-1 and Y+1. To test for any association between the lack of opportunities theory and the performance decline among the GCC IPOs, the following hypothesis is proposed:

Hypothesis 2: The lack of opportunities theory does not explain the performance change of GCC IPOs.

The growth in sales (SG) and capital expenditures (CEG) is measured by using the following equations:

$$SG = [(\text{Sales in year 1} - \text{Sales in year 0}) / \text{Sales in year 0}] * 100 \quad (4)$$

$$CEG = [(\text{CE in year 1} - \text{CE in year 0}) / \text{CE in year 0}] * 100 \quad (5)$$

Additionally, the total debt ratio (TDR) can be added to the sales and capital expenditures growth in order to assess whether the owners are using the proceeds in value maximizing projects such as those that reduce the level of debt. This ratio is vital in assessing the ability of the firm to meet long-term obligations. The level of debt and equity is fundamental for shareholders and debtholders. From the shareholders' perspective, the level of debt is an indication of the financial risk to their dividend payments, while from the lenders' point of view the level of debt can be used to assess the position of the firm in obtaining loans. An IPO greatly impacts the structure of debt, as suggested by the advantages of going public, in that firms can use the proceeds to pay off debt (Pagano, Panetta, and Zingales, 1998). In this paper, the total debt ratio will be utilized as a measure of the level of debt of a company after the IPO. The total debt ratio indicates the proportion of the assets of a company that is financed by debt. A lower ratio suggests that the financial position of the firm is better. The TDR can be calculated using the following equation:

$$\text{Total Debt Ratio (TDR)} = (\text{Total Liabilities} / \text{Total Assets}) * 100 \quad (6)$$

Another explanation regarding to performance decline after the IPO is the "timing the issue" explanation or "window-dressing" the accounting data. The owners of firms may time the issue to coincide with superior performance that could be difficult to sustain in the future. This action could explain the performance peak of most IPOs in the last year of private ownership, just prior to going public. For example, Cai and Wei (1997) notice that most Japanese IPOs tend to show incredible performance in the year before the IPO (Y-1). They interpret this finding as meaning that the owners of Japanese firms may time the issue to coincide with the superior performance that they doubt they will be able to maintain in the future. Alternatively, IPO managers

[48] GCC data does not allow matching the IPO firm with a comparably listed company. Also, some industries in the GCC are comprised entirely of IPOs with no operating history. Therefore, this study relies on raw data.

might manipulate the accounting data ("window-dressing") to make the offering tempting for potential investors. In either case, Y-1 is a good indication for testing the theory of timing the issue, when looking for any unusual increase in accounting data in the year before the IPO.

Laughran and Ritter (1995) introduce another theory, "the windows of opportunity", as an explanation for the decline in performance of IPOs. The "windows of opportunity" theory suggests that the owners of firms will exhibit opportunistic behaviour to exploit a bullish stock market trend or a hot issues market. When the stock market rises, investors tend to be over optimistic and have high expectations about the returns of the stocks. This over-optimism creates a unique opportunity for the owners of firms, and for insiders, to achieve a higher price for the shares. Brau and Fawcett (2006) find that the insiders of firms are opportunists, and this finding could explain the decline in operating performance.

Another set of authors have associated performance decline after an issue to the agency cost and conflict that arises between the two parties, the original owner/s (the agent/s) and the new shareholders (the principal/s). Jensen and Meckling (1976) define the agency relationship as *a contract under which one or more persons (the principal(s)) engage another person (the agent) to perform some service on their behalf which involves delegating some decision-making authority to the agent*. The agency theory considers the impact of the change in ownership structure on the performance of firms after the IPO.

Jain and Kini (1994) link the performance decline of American IPOs to many reasons, one of which is the lessening of incentives for managers/owners after the sale, due to the change in ownership structure. IPOs typically lead to a significant change in the ownership structure and often to a battle between the original owners and the new shareholders. On the contrary, Mikkelson et al. (1997), find no link between ownership structure change and performance decline among American IPOs. Unlike Jain and Kini (1994), who examine the change in ownership only at the IPO year (at one point in time), Mikkelson et al. (1997) critically assess the ownership structure change by measuring it over time after the IPO (at three points in time post-IPO). Likewise, the debate is found between authors in Japan. Cai and Wei (1997) argue that there is no link between the change in ownership structure and the change in performance, differing from the argument of Kutsuna et al. (2002) who do find this link. One of the major reasons for these conflicting results regarding the impact of change in ownership structure on performance change may be due to the methods that are applied by the authors. Different methods have resulted in varying results.

Therefore, the following hypothesis on the impact of change in ownership structure on the performance of GCC firms is formed:

Hypothesis 3: The change in the ownership structure is associated with the performance change among the GCC IPOs.

Ownership is measured by the percentage of shares held by the original owners at the time of the IPO. Furthermore, it has been argued that the age and size of the firm could impact on the performance of the firms. Mikkelson et al. (1997) find that large, well-established companies perform better than small start-up IPOs (in this case, "better" means that the decline is less severe). Similarly, Pagano et al. (1998) find that large, older Italian IPOs have performed better than newer, smaller companies. Balatbat et al. (2004) find that of several control variables, the length of the prior operating history of a firm is the only robust explanatory variable for a change in performance. These authors state that IPOs with a longer establishment history demonstrate better, long-run operating performance than start-ups. Based on this empirical evidence, the following hypothesis for the age and size of the firm is suggested:

Hypothesis 4: The age and the size of the GCC IPOs are associated to performance change in that large, well-established IPOs perform better than other IPOs.

Age is measured by the length of operating history and size is measured by the natural logarithm of the total assets.

2.3 Regression analysis

The first model tests the association between the IPO event and the ROA over time. This allows the incorporation of market factors such as the Global Financial Crisis (GFC), which is not possible when using the matching firm approach. The model is the following:

$$\begin{aligned}\text{Firm performance}_{it} = {} & \beta_0 + \beta_1\,\text{IPO} + \\ & \beta_2\,\text{GFC} + \log(\text{Sales})_{it} + \beta_4\,\text{Age}_{it} + \\ & \beta_5\,\text{TDR}_{it} + \beta_6 \log(\text{CE})_{it} + \varepsilon_{it}\end{aligned} \tag{7}$$

In this model, all data on GCC IPOs across all available years for each IPO is pooled. Thus, the data consists of unbalanced panel data and includes 393 observations. The dependent variable is IPO performance, as measured by the raw ROA. The first independent variable is the IPO, which is a dummy variable with a value of 1 for the years of the IPO event and subsequent years and 0 for the pre-IPO period. This variable captures the effect of the IPO event on the performance of the firm. It is expected that this variable will have a negative impact on the performance of the firm. The second variable is the GFC, which is a dummy variable that takes on 1 for the years during the global financial crisis in 2008 and

2009 and 0 for other years[49]. This variable is included to control for the negative effect of the global financial crisis on performance. The natural logarithm of sales is included to capture the effect of revenues on performance, and this variable is expected to have a positive impact. Sales also represent the size impact. To minimize the multi-collinearity effect the use of total assets is avoided. Age is expected to have a positive impact on the performance of the firm because older firms show superior performance; thus the age of the firm is included to control for any age impact. Finally, the annual total debt ratio and the natural logarithm of capital expenditures are included in order to determine whether these factors could explain the change in performance.

Furthermore, hypotheses 3 and 4 are tested by seeking association between change in IPO performance and change in ownership structure, age and size. Based on the works of Kim et al. (2004) and Wang (2005), the following regression model is proposed:

$$\begin{aligned} &\Delta \text{ Performance }_{+1 \text{ to} -1} \\ &= \beta_0 + \beta_1 \text{ Ownership} \\ &+ \beta_2 \text{ Age} + \beta_3 \text{ Size} \\ &+ \beta_4 \text{ SG} + \beta_5 \text{ CEG} \\ &+ \beta_6 \text{TDRC} + \varepsilon \end{aligned} \quad (8)$$

The dependent variable in this model can be either the change in the ROA or the ROS between Y+1 and Y-1. The ownership independent variable represents the ownership stake (in percentage) that is held by the original owners at the time of the IPO (the retention). It is expected that ownership will have a negative impact on change in performance due to increasing agency cost. A higher rate of retention by the original owners results in a higher agency conflict and a decline in performance. Age is the difference between the establishment year and the IPO year of the firm. Size is the natural logarithm of the total assets during the IPO year. SG represents the sales growth from Y-1 to Y+1. The variables of age and size are positively linked with the change in the performance; thus, they are included in the analysis. Also included is the capital expenditures growth (CEG) to control for any increase in assets. Kim et al. (2004) stated that leverage could have an impact on the performance of firms; thus, the total debt ratio change between Y+1 and Y-1 (TDRC) has been incorporated to control for this possible leverage effect.

3 Data

3.1 IPO sample

The data in this research are highly constrained by the information that is available. This implies that one of the research problems is the use of a highly constrained and specific data set in a manner that allows hypotheses to be tested, results produced and conclusions reached that fit within the pre-existing literature.

The initial database is comprised of all GCC companies that conducted initial public offerings on any one of the seven GCC stock markets during the years from 2003 to 2010. To study the impact of IPOs on the performance of firms, the following filters have been applied:

- Firms that went public as a new establishment or start-up firms were excluded because no pre-IPO data were available;
- Firms with no pre-IPO data were excluded due to the lack of comparability between the pre and post-IPO periods;
- Firms that went public in 2011 were excluded because 2010 is the cut-off date for comparison in this study. The cut-off 2010 was chosen to allow for at least one year of post-IPO performance by the time this study was conducted.

These filters reduced the final sample to 52 IPOs, and the majority of these IPOs were from Saudi Arabia (30 IPOs). 9 IPOs were from Oman, 7 IPOs were from the Emirates, 4 IPOs were from Bahrain, and Kuwait and Qatar had only 1 IPO each.

3.2 Data sources

Two sources of data have been used to implement this study, the first one being prospectuses. Capital market authorities in the GCC require that any company that wishes to join the capital market must provide three years of audited-accounting information, which includes the balance sheet, income statement and cash flow operation. These prospectuses also include general information regarding the offering such as the offering price, the number of shares that were offered, the period of subscription, the eligibility and the purpose of the offering. These data are maintained on the capital market authority website which is publicly available for collection and assessment. The second source of data is the annual reports. As a regulatory procedure in the GCC capital markets, all listed companies must publish their quarterly and annual financial performance. The annual reports of the IPOs from the stock market website of each country were collected, and in the cases where such annual reports were not available, companies' official websites were accessed.

[49] Although the financial crisis occurred in the middle of 2007, the effect on the performance of firms began to appear in 2008, and most companies began to recover in 2010.

3.3 Descriptive statistics

Table 1 shows descriptive statistics for 52 GCC IPOs. All numbers are reported in US$ to control for exchange rate variations among GCC countries. The issue share price varies between a minimum of US$0.28 and a maximum of US$136.5, with an average value of US$12.7. The table also reveals a substantial underpricing of 82% and 48% as the mean and median show, respectively, which is much lower than the 290% underpricing that was reported by Al-Hassan et al. (2010) on 47 GCC IPOs[50].

The maximum underpricing originates from the Abu Dhabi national energy company, which shows a price explosion in the first day and a return of 684%. On average, the sample's initial returns are much higher than those from the US (7.3%) and Thailand (68%) but are lower than those of China, which exhibited underpricing of 272% as documented by Wang (2005) on a sample of 747 IPOs (see the international insights on underpricing by Loughran, Ritter and Rydqvist, 1994).

The average total size of the offering is US$453 million, which is a figure that is much higher than the averages of other countries and implies that IPOs in the GCC were priced too high in comparison with other nations. The largest offering in the sample (the privatized telecommunication company of the Saudi government) raised total capital of over US$4 billion. The total proceeds from all 52 IPOs amounted to US$23.1 billion. The variables of total proceeds and total assets indicate large variations in the size of the GCC IPOs, as shown by the 25th and 75th percentiles. Kim et al. (2004) report average total assets of US$40 million, while this study shows an average of US$1.78 billion. The medians and other statistical measures show similar patterns.

Moreover, the length of time of the operating history of GCC IPOs is greater than those that are documented in previous literature. The mean and median ages of GCC IPOs are 20 and 18 years respectively, and the oldest firm has an operating history of over 50 years. Balatbat, Taylor and Walter (2004) report an average operating history of only 4.7 years, and the oldest firm in their research into Australian IPOs was not older than 10 years. In Thailand, the average age of IPOs is 14.4 years, and the maximum age is 17 years.

Finally, the share ownership is inspected. This is the percentage of shares of the company that are held by the original owners at the time of the IPO. All statistical measures indicate that IPO owners in the GCC retain a large stake in the company at the time of the IPO. The mean and median retention rates are 65.5% and 70%, respectively, while 25 IPOs retain 70% and 6 IPOs retain more than 70% of the stake. Again, the retention rate in the GCC is higher than in other countries. In Australia, Balatbat et al. (2004) document an average retention rate of 50.5%, and in Thailand the retention rate is 38.6%, which implies that in the GCC the original owners maintain strong control over the firm at the IPO, and this action may amplify the agency cost.

4 Empirical results

4.1 Operating performance of GCC IPOs

Accounting profitability measures are reported in Table 2 for the entire sample of 52 IPOs that were made in the GCC. As anticipated, Panel A shows a sharp decline in the profitability of IPOs from the pre-IPO to the post-IPO year. The mean (median) deteriorates in all profitability ratios. The mean (median) ROA drops significantly from 14% to 8% (13% to 10%), which is a large decline of approximately 43%. Furthermore, all the measures of profitability (ROS) and (A/S) exhibit the same observed patterns of severe decline. Jain and Kini (1994) report a median change of only -7.6% between Y-1 and Y+1.

However, the results of this present study are comparable to those that were observed in developing markets such as China and Thailand. In China, Wang (2005) reports 20.9% deterioration between Y-1 and Y+1, and Kim et al., (2004) document a 44.12% decline for 133 IPOs made in Thailand. The ROS and S/A ratios have declined by 5% and 20%, respectively.

On inspection of Panel B of Table 2, it is obvious that performance deterioration has intensified in magnitude. The number of IPOs that are included in the investigation has declined to 46 because few IPOs in the sample do not have more than 1 year of post-IPO data. The average ROA, ROS, and S/A have declined in the second year of post-listing by 43%, 24% and 20% respectively and the median change decline for the ROA and ROS in the second year has increased to -56%, and -18%, respectively. This finding is consistent with those of Jain and Kini (1994) and Kim et al. (2004), however, the decline in Thai IPOs in the second year was much larger than those, which are documented in this study.

Panel C shows a comparison between the average profitability for the years before the IPO, and those after the IPO. The average ROA for all companies before the IPO is 13%, while this value is 7% after the IPO (a decline of approximately 46%). ROS and S/A show similar sharp deterioration. The mean (median) measures of change for the two proxies are -11% (-3%) and -15% (-8%), respectively. Overall, it is concluded that the operating performance of GCC IPOs is worse in the post-IPO period than in the pre-IPO period.

[50] One reason for the difference between this study and that of Al-Hassan et al. (2010) is the sampling difference. In their study, a large number of IPOs are start-up firms, while, in this case, all IPOs are well-established IPOs with an operating history.

Table 1. Descriptive Statistics of GCC IPOs

This table shows descriptive statistics on 52 IPOs made in the GCC between 2003 and 2010. The issue price is the price per share standardized for all IPOs by the equivalent US$. Initial returns (underpricing in percentage) are calculated by taking the difference between the IPO closing price on the listing day and the issue price. Proceeds (in US$) are calculated by multiplying the number of shares on offer by the issue price. Total assets (US dollar) are the total value of assets in the IPO year. Age is the length of the IPO operating history calculated by taking the difference between the IPO year and the establishment year. Ownership is the percentage of shares held by the original owners at the time of the IPO. The US$ is used to standardize the figures because all GCC nations pegged their domestic currencies with US dollar.

Characteristics	Mean	Median	25th Percentile	75th Percentile	Minimum	Maximum
Issue price (US$)	12.71	6.93	3.08	13.20	0.28	136.53
Initial return (%)	81.93	47.90	14.74	88.57	-17.60	684.16
Proceeds (million US$)	452.73	159.60	81.81	547.84	11.08	4080.00
Total assets (million US$)	1781.58	352.59	152.39	925.74	0.86	21720.86
Age (years)	20	18	7	29	3	51
Ownership (%)	65.5	70	60	70	30	95

Table 2. Changes of Operating Performance of GCC IPOs

This table presents empirical results for the full sample of 52 IPOs occurred in the GCC between 2003 and 2010. Profitability ratios are the return on assets (ROA = net income/ total assets), return on sales (ROS = net income/ total sales) and the sales to assets (S/A = total sales/ total assets). For each variable, the usable observations are reported, the mean and median values, the change in these values from before to after the IPO event. The Wilcoxon signed rank test (with its z-Statistic) is used as the test for significance for the change in median values. Panel A shows a comparison between the year before the IPO event (Y-1) and the year after the IPO event (Y+1). Panel B compares Y-1 to the second year after the IPO (Y+2). Finally, Panel C compares the average for all available years before the IPO (Y-k) with the average of all available years after the IPO (Y + n).

Panel A: Comparison of profitability between Y -1 and Y +1

Variables	N	Mean before	Mean after	Mean change	Median before	Median after	Median change	z-Statistic
Return on assets (ROA)	52	0.14	0.08	-0.06	0.13	0.10	-0.02	3.1***
Return on Sales (ROS)	52	0.23	0.11	-0.12	0.20	0.19	-0.02	2.2**
Sales to assets (S/A)	52	0.78	0.68	-0.10	0.69	0.55	-0.02	1.4

Panel B: Comparison of profitability between Y -1 and Y +2

Variables	N	Mean before	Mean after	Mean change	Median before	Median after	Median change	z-Statistic
Return on assets (ROA)	46	0.14	0.08	-0.06	0.11	0.07	-0.04	3.8***
Return on Sales (ROS)	46	0.25	0.19	-0.06	0.20	0.17	-0.05	3***
Sales to assets (S/A)	46	0.76	0.61	-0.15	0.57	0.47	-0.04	2.5***

Panel C: Comparison of profitability between the average Y –k and the average Y +n

Variables	N	Mean before	Mean after	Mean change	Median before	Median after	Median change	z-Statistic
Return on assets (ROA)	52	0.13	0.07	-0.06	0.11	0.07	-0.02	3.9***
Return on Sales (ROS)	52	0.24	0.13	-0.11	0.19	0.14	-0.03	2.4**
Sales to assets (S/A)	52	0.81	0.65	-0.15	0.66	0.52	-0.08	3.1***

Note: ***, **, * Significant at the 1, 5, and 10 per cent levels, respectively.

4.2 Panel regression results

Table 3 shows the estimates of the ROA change of IPOs over time during all years before the event to all years after the event. The univariate estimates were inspected, and it was observed that the IPO and the GFC dummy variables are significant, and provide the expected negative signs. In this case, the IPO event also represents the change in the ownership structure. Because data on the change in the ownership structure over time is not available, the impact of the change on an annual basis was not possible. However, the use of the IPO as a dummy variable in this model captures the change in ownership structure that occurs during the event.

Additionally, it is found that age is positively associated with better performance over time, in line with the findings of Mikkelson et al. (1997) and Balatbat et al. (2004) whose studies showed a positive impact of firm age on performance. This finding also suggests that, as the age of firm increases, year to year performance improves. Moreover, it is found that IPOs which increase level of debt, as measured by the total debt ratio, show poorer performance over time.

Models 1 to 3 show the multivariate association between the performance of the IPO and other variables. The IPO variable remains negatively significant in all models, which confirm earlier findings that the IPO event has a negative impact on the performance of firms because of the change in ownership structure. The GFC remains negative, as one would expect, but this value is insignificant in all models. This finding could be explained by the fact that the GCC area was insulated against the global financial crisis as a whole because of conservative financial and monetary policies. In 2009, the worst year of the crisis, the GCC achieved a GDP of only -0.3%, but a strong recovery of 5.1% occurred in 2010. As expected, sales and total debt ratio are inversely associated with IPO performance. Therefore, an IPO with more sales has superior performance, and IPOs with higher debt levels have worse performance. No significant link is found between the change in capital expenditure over time and IPO performance.

4.3 Explanation of operating performance decline

4.3.1 The lack of opportunities explanation

Contrary to what has been hypothesized in this study and to Jain and Kini (1994), Panel A of Table 4 shows a significant decline in the growth of sales in the post-IPO period in comparison to the growth rate during the pre-IPO period. The median sales growth has fallen from 25% to 8% (a decline of approximately 68%). Furthermore, the capital expenditure growth reveals a similar outcome of severe deterioration in the post-IPO period. The median growth has declined by approximately 76%. Both variables indicate that the growth rates of IPOs during the pre-IPO are better than the growth rates during the post-IPO period. This result lends support to the lack of opportunities hypothesis. Moreover, the total debt ratio (insignificant) suggests that IPOs rely more on debt after the IPO than during the pre-IPO period.

In Panels B and C of Table 4, the growth rates of sales and capital expenditure is measured between Y-1 and Y0 and between Y-1 and Y+1, respectively. This method is similar to those of other authors such as Jain and Kini (1994) and allows for direct comparisons. The results indicate that IPOs have maintained growth of both variables, and that sales have increased significantly from Y-1 to Y0 and from Y-1 to Y+1 by 17% and 47%, respectively.

Additionally, IPOs in the sample in this paper show a significant increase in capital expenditures by 11% and 102%, respectively, but no significant change is observed in the total debt ratio. These results suggest that, although the IPOs maintain a certain level of growth in sales and capital expenditures, this growth is not actually satisfactory when compared to that of the pre-IPO period. Most importantly, the results indicate that there is a methodological issue when examining the lack of opportunities hypothesis in previous literature. Instead, these results lend support to the "window-dressing" or "timing the issue explanation". Overall, it is concluded that performance decline is a function of several factors, for which no single theory can give a satisfactory explanation.

4.3.2 Ownership, age and size explanations

Previously, it was confirmed that the decline in the IPO performance is associated with the IPO event. Several techniques were used in order to match the pairs before and after the IPO and then pool all of the data. Following is a thorough analysis of the impact of ownership on the performance of IPOs and the type of association that exists between these factors.

Table 5 shows the estimates of Equation 8. In Panel A, it is found that a linear association between a change in the IPO performance (ROA) and a change in the ownership structure exists. As hypothesized, a change in ownership structure has a significant negative impact on the performance of the IPO. Additionally, this finding suggests that a higher rate of retention by original owners results in a worse change in performance.

Univariate analysis does not provide any additional explanatory power for the change in performance. However, multivariate analysis of Panel A suggests that the size of the IPO firm has a significant positive impact on change in performance, in that large IPOs show superior performance to small IPOs, and this finding is consistent with that of Mikkelson et al. (1997). The change in capital expenditures is also significant and negative, as expected due to the impact that capital expenditure brings upon the assets of the firms, which enlarges the denominator when calculating the ROA.

Table 3. Panel Results of IPO Performance

This table shows the association between the IPOs performance and selected variables for the research period. The data is based on 393 observations pooled from 52 IPOs from the GCC between 2000 and 2011. The dependent variable is the IPO performance as measured by the ROA = net income/total assets. The independent variables are: IPO a dummy variable takes on a value of 1 from the IPO event occurrence to the subsequent years and 0 before the IPO, GFC a dummy variable that takes on a value of 1 for the years during the global financial crisis in 2008 and 2009, and 0 otherwise, Sales is the natural logarithm of the IPO sales, Age is the length of the operating history of the IPO firm, Debt ratio is calculated as total liabilities/ total assets, Capital expenditure is the natural logarithm of the money spent by the IPO firm on acquiring or upgrading physical assets. Combinations of the following model are examined:

$$Firm\ performance_{it} = \beta_0 + \beta_1\, IPO + \beta_2\, GFC + \beta_3\, \log(Sales)_{it} + \beta_4\, Age_{it} + \beta_5\, TDR_{it} + \beta_6 \log(CE)_{it} + \varepsilon_{it}$$

Variable	Uni-variate	Model 1	Model 2	Model 3
Intercept		0.109	0.077	0.075
t-Stat		9.621***	1.286	1.279
IPO	-0.05	-0.044	-0.050	-0.048
t-Stat	-4.324***	-4.080***	-5.047***	-4.776***
GFC	-0.022	-0.011		-0.003
t-Stat	-1.900*	-0.878		-0.379
Sales	0.011		0.020	0.020
t-Stat	1.535		2.160**	2.161**
Age	0.001	0.001		
t-Stat	1.752*	2.173**	0.116	0.133
debt ratio	-0.107		-0.111	-0.110
t-Stat	-7.042***		-7.538***	0.133***
Capital Expenditures	0.002		-0.009	-0.009
t-Stat	0.691		-1.484	-1.475
f-Stat		8.057***	18.589***	15.477***
Adj R^2		0.051	0.195	0.193

Note: ***, **, * Significant at the 1, 5, and 10 per cent levels, respectively.

Table 4. Examination of the Lack of Opportunities Hypothesis

This table presents empirical results for 36 IPOs which occurred in the GCC and which had necessary data available. Panel A compares the average growth for the years pre-IPO to the average years post-IPO. Panels B and C compare the year before the IPO Y-1 to the year of the IPO event Y0, and the year following the IPO Y+1, respectively. Sales growth, capital expenditure growth and total debt ratio are the growth between two time periods calculated as in Eq.4, 5, and 6, respectively.

Panel A: Comparison between the average Y-k and the average Y+n

Variable	N	Median before	Median after	Median change	z-Statistic
Sales growth	36	0.25	0.08	-0.14	3.5***
Capital expenditure growth	36	0.40	0.10	-0.22	2.2**
Total debt ratio	36	-0.03	0.04	0.08	1.1

Panel B: Comparison between Y-1 and Y0

Variable	N	Median change	z-Statistic
Sales growth	36	0.17	4.1***
Capital expenditure growth	36	0.11	1.4
Total debt ratio	36	-0.04	0.60

Panel C: Comparison between Y -1 and Y +1

Variable	N	Median change	z-Statistic
Sales growth	36	0.47	5***
Capital expenditure growth	36	1.02	3.8***
Total debt ratio	36	0.00	0.45

Note: ***, **, * Significant at the 1, 5, and 10 per cent levels, respectively.

Table 5. Estimates of the Relationship between the Change in IPO Performance and the Change in Ownership Structure

The sample is 30 IPOs made in Saudi Arabia between 2003 and 2010. Other GCC IPOs have been excluded to keep a homogeneous sample. The table presents the association between the change in IPOs performance and the change in ownership structure. The dependent variable in Panel A is the change in the ROA between Y+1 and Y-1, while in Panel B, the dependent variable is the change in the ROS. The independent variables are: ownership (percentage), which is the retention by the original owners at the time of the IPO; Age is length of operating history from establishment until the IPO event; Size is measured by the natural logarithm of the total assets; SG represents the growth in sales from Y-1 to Y+1; CEG represents the growth in capital expenditures from Y-1 t o Y+1; TDRC represent the change in the total debt ratio from Y-1 to Y+1.

Panel A: the link between the change in ROA and ownership				Panel B: the link between the change in ROS and ownership		
Variable	Uni-variate	Model 1	Model 2	Uni-variate	Model 1	Model 2
Intercept		0.16	-0.28		2.31	-0.64
t-Stat		0.60	-2.08**		1.10	-1.53
Ownership	-0.01	-0.01	0.00	-0.05	-0.06	-0.01
t-Stat	-2.83***	-2.35**	-3.01***	-3.22***	-2.50**	-3.28***
Age	0.00	0.00	0.00	0.01	0.00	0.00
t-Stat	0.92	0.94	1.16	0.41	0.35	0.43
Size	-0.02	0.01	0.03	-0.17	0.06	0.08
t-Stat	-1.62	0.64	3.12***	-1.78*	0.46	2.85***
SG	0.01		0.00	0.01		-0.11
t-Stat	0.50		-0.13	0.04		-3.42***
CEG	0.00		0.00	0.03		0.02
t-Stat	-0.22		-1.75*	6.34***		4.14***
TDRC	0.01			0.14		0.07
t-Stat	0.34			1.08		2.45**
f-Stat		2.90*	2.24*		3.30**	20.47***
Adj R^2		0.17	0.18		0.19	0.81

Note: ***, **, * Significant at the 1, 5, and 10 per cent levels, respectively.

Panel B, shows that a change in ownership structure has a negative impact on the ROS. Univariate analysis also suggests that IPOs with larger capital expenditures have experienced a better change in the ROS. Surprisingly, the size of the IPO negatively impacts the ROS, but the sign become positive when multivariate analysis is used. In model 2 of Panel B, the adjusted R^2 is very high at 81% explanatory power, and most variables have the expected signs at significant levels. Ownership remains negative, which suggests that an increase in ownership retention by the original owners results in greater decline in the ROS.

Additionally, the size of the firm is positively significant, which indicates that for each increase in the size of the IPO, the performance change improves. Sales growth between the two periods is significant and negative, as expected, due to enlargement of the denominator when calculating the ROS. Thus, when sales increase, the ROS decreases. The growth of capital expenditures suggests that IPOs with larger investments experience a better change in the ROS. Similarly, IPOs which increase their leverage experience a change in the ROS for the better.

5 Conclusion and future research

In this paper, the operating performance of 52 IPOs made in the GCC between 2003 and 2010 was examined. The results indicate that performance deteriorates during the post-IPO period. The average ROA and ROS in the post-IPO period have declined by 47% and 25%, respectively. Based on 393 observations that were pooled across the period, the paper documents the fact that the IPO event is significantly associated with performance decline.

Additionally reasons behind the performance decline were investigated and it was found that several factors must be incorporated to explain this decline. Firstly, the results indicate that, although IPOs maintain a strong growth in sales and capital expenditures, this growth is not comparable to the strength of the growth during the pre-IPO period. This finding is interpreted to mean that the IPOs are either not achieving the required level of growth in the post-IPO period or that they are involved in "window-dressing" behaviour, which makes the accounting numbers for the pre-IPO period appear better than they actually are.

More interestingly, it is found that the change in ownership structure, which results from the IPO, has a significant negative impact on the change in performance. The link is linear and demonstrates that the cost of the agency increases as the original owners increase their retention. This action, in turn, leads to a performance decline due to increasing agency conflict. Moreover, evidence is found that suggests that the size of the IPO has a significant positive impact on performance, in that large IPOs show superior performance to small IPOs, while the age of the firm does not seem to be as important.

In conclusion, the explanation for the decline in the operating performance of an IPO is a complex function of multiple factors, and no single theory or hypothesis can explain this decline. Empirically, it is found in this paper evidence that supports the lack of opportunities hypothesis presumably the accounting figures in the prospectuses are correct. Alternatively, the owners might be involved in "window-dressing" the accounting numbers to make the IPO look better than they actually are. If the latter is the case, then this is an additional support for the increasing agency cost that results from the change in ownership structure.

Finally, two areas for future research are suggested that could not be addressed in the current paper due to data limitations. Firstly, evidence of differentiation between different types of IPOs is missing in the literature. This goes beyond only differentiation between IPOs and privatisation. Different companies go public for different reasons. An IPO can be offered by a limited liability firm which is then transformed into joint stock, joint stocks expand the authorized capital by issuing new shares, and many others. Similarly, privatized government firms go public for different reasons. Secondly, it is recommended that future researchers scrutinize the lack of opportunities hypothesis.

References

1. Alanazi, A.S., Liu, B. and Forster, J. (2011), "The financial performance of Saudi Arabian IPOs", *International Journal of Islamic and Middle-Eastern Finance and Management* 4, 146-157.
2. Al-Barrak, A. (2005). "Initial public offerings in Saudi Arabia: motivations, barriers, and effects" (PhD Thesis), University of Newcastle upon Tyne.
3. Al-Hassan, A., Delgado, F. and Omran, M. (2010), "The under-pricing of IPOs in the Gulf Cooperation Council countries", *Research in International Business and Finance* 24, 344-360.
4. Balatbat, M.C.A., Taylor, S. L. and Walter, T. S. (2004), "Corporate governance, insider ownership and operating performance of Australian initial public offerings", *Accounting and Finance* 44, 299-328.
5. Brau, J. C., and Fawcett, S. E. (2006), "Initial public offerings: An analysis of theory and practice", *Journal of Finance* 61, 399-436.
6. Cai, J, and Wei. J. K.C. (1997), "The investment and operating performance of Japanese initial public offerings", *Pacific-Basin Finance Journal* 5, 389-418.
7. Chun, H. (2000), "The role of the stock market in Korea: Determinants and effects of initial public offerings", Ph.D. Thesis, The George Washington University, United States -- District of Columbia.
8. Jain, B.A. and Kini, O. (1994). The post-issue operating performance of IPO firms. *Journal of Finance 49*, 1699-1726.
9. Jensen, M. C. and Meckling, W. H. (1976), "Theory of the firm: Managerial behaviour, agency costs and ownership structure", *Journal of Financial Economics* 3, 305-360.

10. Kim, K. A., Kitsabunnarat, P. and Nofsinger, J. R. (2004), "Ownership and operating performance in an emerging market: Evidence from Thai IPO firms", *Journal of Corporate Finance* 10, 355-381.
11. Loughran, T., Ritter J. R. and Rydqvist, K. (1994), "Initial public offerings: International insights", *Pacific-Basin Finance Journal* 2, 165-199.
12. Loughran, T., Ritter J. R. (1995), "The new issues puzzle", *Journal of Finance* 50, 23-51.
13. Kutsuna, K., Okamura, H. and Cowling, M. (2002), "Ownership structure pre- and post-IPOs and the operating performance of JASDAQ companies", *Pacific-Basin Finance Journal* 10, 163-181.
14. Megginson, W. L., Nash, R. C. and Randenborgh, M. V. (1994), "The financial and operating performance of newly privatized firms: An international empirical analysis", *Journal of Finance* 49, 403-452.
15. Mikkelson, W. H., Partch, M. and Shah, K. (1997), "Ownership and operating performance of companies that go public", *Journal of Financial Economics* 44, 281-307.
16. Pagano, M., Panetta, F. and Zingales, L. (1998), "Why do companies go public? An empirical analysis", *Journal of Finance* 53, 27-64.
17. Wang, C, (2005), "Ownership and operating performance of Chinese IPOs", *Journal of Banking and Finance* 29, 1835-1856.