Modeling IPO In Dubai
Stock Market:
Booming Or Tumbling Return?

Viviane Y. Naïmy, (E-mail: nvnaimy@cyberia.net.lb), Notre Dame University, Lebanon

ABSTRACT

This paper examines the impact of IPO on Dubai Stock Market. We measured through detailed distribution analysis and hypothesis testing the Dubai market's reaction to IPO. We demonstrated that IPO had downbeat impact on Dubai market performance in terms of return as revealed by the rejection of the alternative hypothesis. The independency between market return and IPO was partially attributed to irrational valuations at the time of IPO.

INTRODUCTION

*A*s a privately held firm expands, it may need more funds than it can obtain through borrowing and therefore will consider an initial public offering (IPO). A common first step for a growing firm is to obtain private equity funding from venture capitalist (VC) firms, which seek to invest in firms that offer high potential for growth over time. Therefore, an IPO is commonly used not only to obtain new funding but also to offer VC firms a way to cash in their investment[1].

IPO issued in the Middle East has been booming since 2000. In 2005, the IPO market in Dubai touched Dh 40 billion. There have been complaints about how these IPO are taking out liquidity from the stock market causing the markets to crash. On April 12, the Saudi stock market tumbled by 14.2%. It was no coincidence that in the same week the initial public offering of the Saudi Research & Marketing Group received $388 million in 582,000 subscription applications, leaving the IPO 132% oversubscribed. Neither it is by chance that the market fell at the same time when IPO were issued.

Dubai is experiencing unprecedented growth in its economy and particularly in its stock market[2]. The number of companies listed and traded has witnessed[3] serious increase since 2001. However, IPO's issuance affected the performance of this market. Consequently, we decided to measure and analyze the impact of IPO on Dubai Financial Market's performance.

Section one describes data collection and lays out the variables distribution analysis with application of empirical rules on Dubai stock market. Section two is devoted to hypothesis testing and market's reaction modeling.

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[1] Many VC firms sell their shares in the secondary market between 6 and 24 months after the IPO.

[2] The Dubai Financial Market (DFM) was officially founded in March 2000 as the first organized stock market in Dubai. DFM includes about thirty five listed stocks, out of which only twenty can be considered as being actively traded. The breadth and depth of industries is also limited – most of the listed stocks are in the banking and insurance sectors, with the remaining stocks being in a wide range of real estate and other services related sectors.

[3] For more details about this market see:
 Naimy V., " Independency or Correlation? The GCC Stock Markets, Interest Rates, and Oil Prices: Against All Financial Rules",
International Business & Economics Research Journal, to appear in February 2007,
Naimy V., "Financial Ratios and Stock Prices: Consistency or Discrepancy? Longitudinal Comparison between UAE and USA",
Working paper to be submitted to the *2006 International Business and Economics Research Conference*, Nevada – USA.

DATA COLLECTION, VARIABLES DISTRIBUTION FUNCTIONS ANALYSIS, AND EMPIRICAL RULES

Data Collection

We have used the weekly closing values for Dubai Market index for the period 2004-2006 according to the following monthly distribution[4]: 2004 (Apr – Dec), 2005 (Jan – Dec), and 2006 (Jan – Apr).Then, weekly market returns have been calculated. We also listed the IPO's issued in UAE according to their size, date, and volume[5]. Table 1 shows the description of each IPO's issuance.

**Table 1: List Of IPO's Issuers Per Year, Per Size, And Per Volume**

Issuer	Year	Issuance Type	Sector	Size	Equity	Over subscription
Emirates Integrated Telecommunications Company	2006	IPO	Telecoms and IT	$659.92M	20%	x 167.00
Tamweel	2006	IPO	Financial Services	$149.75M	55%	x 484.00
Dana Gas	2005	IPO	Oil and Gas	$560.8M	34.33%	x 140.00
Abu Dhabi National Energy Company (Taqa)	2005	Privatization	Power and Utilities	$163.50M	14.45%	x 350.00
Sorouh Real Estate Company	2005	IPO	Real Estate	$374M	55%	x 176.00
Aabar Petroleum Investments	2005	IPO	Oil and Gas	$134.77M	55%	x 800.00
RAK Properties	2005	IPO	Real Estate	$299.48M	55%	x 57.00
Arab International Logistics Company	2005	IPO	Transport	$149.74M	55%	x 80.00
Emirates Foodstuff and Mineral Water Company	2004	Privatization	Agriculture and Food	$80M	49%	x 8.00
ALDAR Properties	2004	IPO	Real Estate	$224M	55%	x 448.00
Arab Technical Construction Company	2004	IPO	Construction	$60M	55%	x 65.00
Finance House (FH)	2004	IPO	Financial Services	$30M	55%	x 75.00
Amlak Finance	2004	IPO	Financial Services	$112M	55%	x 34.00
Emirates Integrated Telecommunications Company	2006	IPO	Telecoms and IT	$659.92M	20%	x 167.00

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[4] www.zawya.com
[5] In other word, over subscriptions have been counted.

Time Series Analysis

**Figure 1: Time Series Illustrating The Market Index Trend With Comparison
To The Issued IPO For The Period 2004-2006**
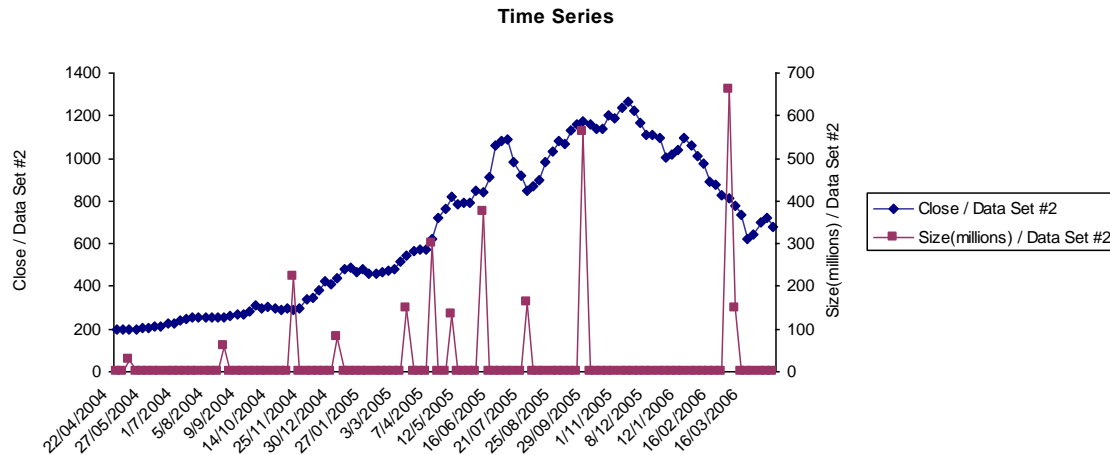
The time series shows that the market index has been rising over time. However, in 2006, the index fell to 678.14 by the end of the 2nd week of April, a drop of 33.2%, as compared to 1015.04 at the end of 2005. Comparing the market performance together with the IPO's issuance, we can easily notice that with each issuance exceeding the $ 500 million, there has been a slight drop in the market index[6]. Nonetheless, and unlike investors' expectations, it was obvious that most of the time a risen market trend was registered with IPO's issuance.

Table 2 depicts the skewness and few measures of the central location of the index values and returns respectively.

**Table 2: Descriptive Statistics – One Variable Summary
For The Market Closing Index And The Market Returns**

	Closing Values	**Returns**
Mean	664.13	1.27%
Variance	120429.20	0.28%
Std. Dev.	347.03	5.29%
Skewness	0.1266	5.83%
Kurtosis	1.5327	391.12%
Median	635.52	1.07%
Mean Abs. Dev.	312.04	3.93%
Minimum	196.58	-15.32%
Maximum	1266.38	16.67%
Range	1069.80	31.99%
1st Quartile	295.25	-1.75%
3rd Quartile	998.87	3.83%
Interquartile Range	703.62	5.58%

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[6] In 2006 the market index fell by 46% off its all time high (1266.38, Table 2).

Given the skewness of both variables, the average[7] return of the market was 1.07% for the period 2004-2006. 25% of the measured index' values were below 295.25 and witnessed a negative return averaging, -1.75%, whereas, 75% of these values were below 998.87 with a positive return close to 4%. This shows that the market has been positively and fairly performing over this period.

Figure 2 compares the market return performance with the IPO's issuance.

Figure 2: Market Returns Versus IPO's

Time Series
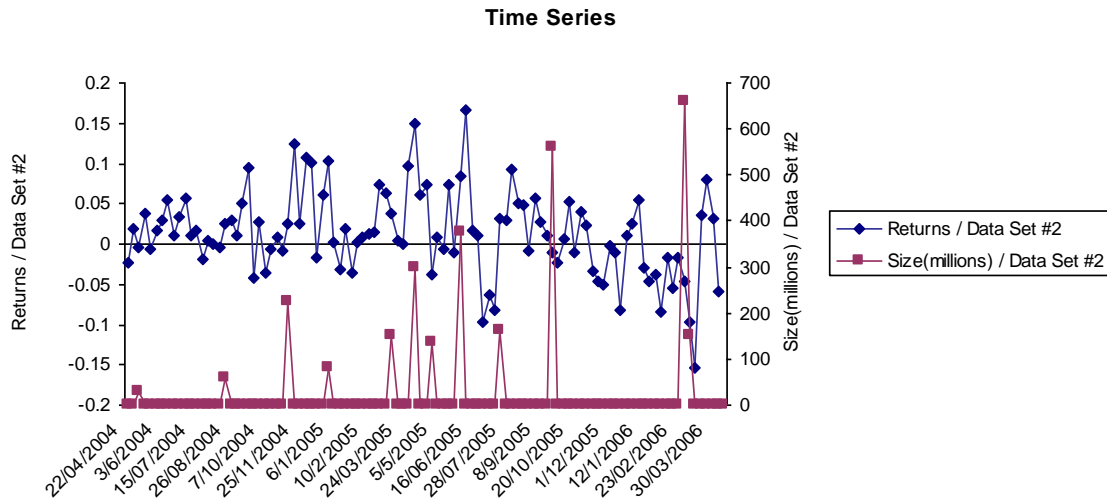
Although the Market Index clearly showed a fairly steady rise over the period, the returns did not exhibit any obvious trend. This is corroborated in table 2 that indicates an average return of 1.07% with a standard deviation of 5.29%. In order to check the possibility of using the empirical rules to better interpret the market performance, a "fit" test is done for the market returns' distribution.

The first best fit distribution is the logistic with a chi square of 6.53, followed by the normal distribution[8]. Therefore, results in Table 1 can be interpreted using the empirical rules for the market return variable.

Applying Empirical Rules On Dubai Market Returns

Using the mean of 1.27% (instead of the median) and a standard deviation of 5.29%, we can deduce that during the three-year period, 68% of the time, the Dubai market had a return ranging between - 4.02% and 6.56%, 95% of the time, the Dubai market had a return ranging between -9.31% and 11.85%, and 99% of the time, this market had a return ranging between -14.6% and 17.14%. These results are not completely accurate due to the slight skewness of returns and to the approximate normal distribution that we have obtained in the second place.

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[7] It is more significant to consider the median instead of the mean.
[8] Chi- sq =13.69

Figure 3: Best-Fit Test For The Market Returns

Logistic(0.012079, 0.028830)
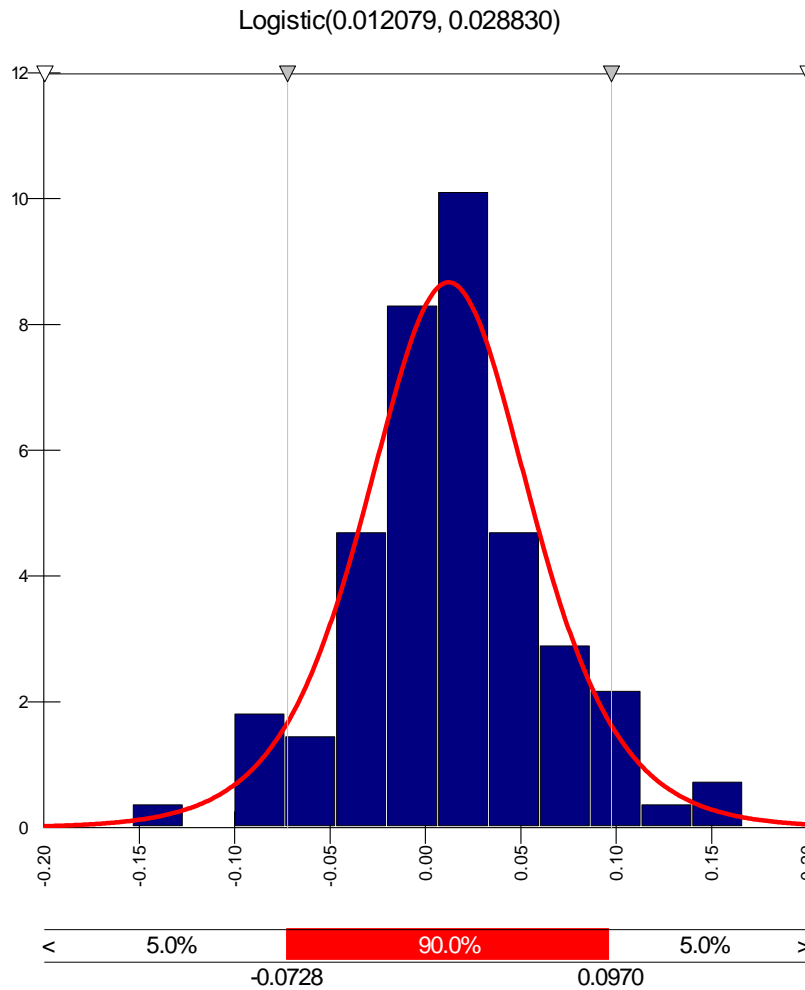
HYPOTHESIS TESTING AND INDEPENDENCY ANALYSIS

Building regressions and scatterplots to measure the relationship between IPO and market performance is meaningless due to the non periodical aspect of issuance and to the pure correlation chance that we might have between IPO's size and market index returns or values. The purpose of this study is not to detect significant relationships or to produce equations to shape such correlation; rather it is to examine Dubai market's reaction to each IPO operation. Therefore, carrying out hypothesis testing is able to answer our inquiry for Dubai market. We assumed the following hypothesis:

Ho: There is no relationship or positive relationship between IPO's issuance[9] and market return
**Ha**: There is a negative relationship between IPO's and market return.

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[9] As measured by their size.

We are considering difference between average return when IPO is not issued and difference when IPO is issued. One tailed test[10] is representative enough for Ha with a value greater than the null value of zero. Therefore we divided the sample into two categories:

1.   Category (0) that represents returns when IPO is not issued.
2.   Category (1) that represents market returns when IPO is issued.

Figure 4 illustrates the difference between these two categories.

Figure 4: Comparative Boxplots Between Category (0) And (1)

Box Plot of Comparison of Returns / Data Set #2
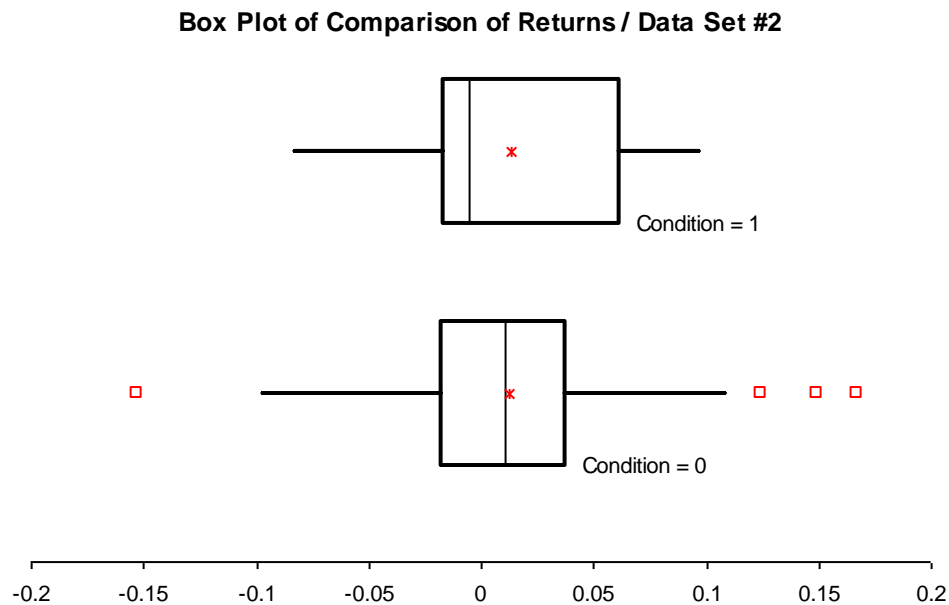
Even if the average return is almost the same in both cases, it could not be representative because of the heavy skewness of category (0), shown by important mild outliers mostly to the right and forcing the average return to be almost the same. On the other hand, we can notice the divergence between the two medians which reflect the real behavior of Dubai market. A closer analysis is illustrated in table 3.

Important results are shown in table 3:

1.   Highest returns were realized in category (0) before or well after IPO's issuance.
2.   Heavy skewness and opposite skewness in both cases. Without IPO, returns distribution is skewed to the right which is obviously translated with the outliers. Unlike the negative skewness (-5.4%) at issuance.
3.   Only medians are to be considered for comparison purpose, therefore, we can conclude that IPO's issuance had a negative impact on the market performance (-0.5%) when compared to an average positive return of 1.07% in normal periods.
4.   More volatility during IPO's issuance despite the relatively limited operations during the period 2004-2006.

Table 3: One Variable(s) Summary

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[10] Stacked option has been considered.

One Variable Summary	Returns (0)	Returns (1)
Mean	1.26%	1.29%
Variance	0.28%	0.28%
Std. Dev.	5.32%	5.28%
Skewness	7.07%	-5.47%
Kurtosis	410.50%	248.90%
Median	1.07%	-0.50%
Mean Abs. Dev.	3.91%	4.16%
Minimum	-15.32%	-8.27%
Maximum	16.67%	9.69%
1st Quartile	-1.75%	-1.67%
3rd Quartile	3.72%	6.15%
Interquartile Range	5.48%	7.82%

Table 4 provides the details of the market hypothesis testing using equal and unequal variances tests.

Table 4: Hypothesis Testing Output

Sample Summaries	Returns (0)	Returns (1)
Sample Size	92	12
Sample Mean	0.01262	0.01292
Sample Std Dev	0.05315	0.05276
	Equal	**Unequal**
Hypothesis Test (Difference of Means)	**Variances**	**Variances**
Hypothesized Mean Difference	0	0
Alternative Hypothesis	> 0	> 0
Sample Mean Difference	-0.00031	-0.00031
Standard Error of Difference	0.016300442	0.016208157
Degrees of Freedom	102	14
t-Test Statistic	-0.0188	-0.0189
p-Value	0.5075	0.5074
Null Hypoth. at 10% Significance	Don't Reject	Don't Reject
Null Hypoth. at 5% Significance	Don't Reject	Don't Reject
Null Hypoth. at 1% Significance	Don't Reject	Don't Reject
Equality of Variances Test		
Ratio of Sample Variances	1.0147	
p-Value	0.9310	

With a high p-value for the equality of variances test (.93), we can't reject the equal variance[11] assumption that gives enough evidence to make it impossible to reject the null hypothesis defined above. Therefore, there is no relationship (or positive relationship) between IPO issuance and market return.

CONCLUSION

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[11] That shows a p-value of 50.75

We were able throughout this paper to solve the myth of IPO's impact on Dubai Stock Market. Doubts about the market's reaction to IPO operations were clarified through detailed distribution analysis and hypothesis testing. Confusion between an expected increase of IPO's prices and market increase has been removed. It was shown that IPO had downbeat impact on Dubai market performance in terms of return as revealed by the rejection of the alternative hypothesis. This analysis does not suggest that every IPO that had an important initial return experienced poor medium-term performance. The independency showed in the above test may be partially attributed to irrational valuations at the time of IPO, which are or would be corrected over time. IPO operations were not behind what few analysts named it "markets crash". Other factors, not considered in this paper, might have been behind the market fluctuations. In addition, IPO's operations constitute a new event to this market and might, consequently, generate uncertainty in the global market behavior especially that the majority of investors are still following their sentiment rather than fundamentals[12]. The general weak performance of the market may be also partially attributed to the firm's managers, who may spend excessively and be less efficient with the firm's funds than they were before the IPO. A curious question is now to be examined, how and when Dubai stock market would better shape the timing, the pricing, and the long term impact of IPO on the financial market as a whole?

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