The factors affecting on IPO return in Thai Stock Market

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Abstract. An alternative for a short-term investment, IPO return is one of the most attractive investments in every stock market. In the past Stock Exchange of Thailand, the rate of stock listing or IPO issue is less when compare to the other markets and the number of overpriced firms less than number of under priced firms. After the crisis period in 1997, the number of IPO issues is reduced to almost zero for a few years. Then SET has implemented the new regulation and procedure to control all listed and will be listed companies and also pursue them to be corporate governance. Nowadays 2004, the rate of stock listing increase to almost one a week, in the other words there is an IPO issued every week and the number of positive return IPO also increase. This study reported 14% to 24% IPO Returns in Thai stock market in given period. This figure is same with international Stock markets. In addition to that the factors affect the initial return of IPOs also disclosed. By using the publish data that can be acquired by general investor, we investigate those data which have relations to the return of IPOs. Finally, develop and test the initial return prediction model.

Keywords: IPO; Initial return; Factors; SET

1. Introduction

An alternative for a short-term investment, IPO return is one of the most attractive investments in every stock market because IPO has a large portion to invest, the average of its return is quite high and there is no tax for the initial return of IPO. However, its risks are also there and that causes many researches go through IPO topics.

In the past Stock Exchange of Thailand, after the post-crisis period in 1997, the annual IPO volume dropped to almost zero for a few years. Then SET has implemented the new regulation and procedure to control all listed and will be listed firms and also pursues them to be the corporate governance. Now in 2004, the rate of stock listing increase to almost one a week, in the other words there is an IPO issued every week with 14.91% of average initial return.

The Securities Exchange Commission (SEC) of Thailand in the past, before the year 2000, required the future forecast of future performance of a firm is not required to be published. For all the information disclosed, it must be approved by SEC under the Securities and Exchange Act, B.E. 1992. After the year 2000, the situation in Thailand changed; Securities Exchange Commission, Thailand (SEC) introduced the new modification of rules and regulations, which relate to the information disclosure and dissemination including penalties in order to regulate all listed firms and also to protect the investors benefit. One of those modifications is the forecast of future performance of a firm is not required to be published; it relies on company preference (Filing form 69-1, 2003). For all the information disclosed, it must be approved by SEC under the Securities and Exchange Act, B.E. 1992. That caused, after the year 2000, very few prospectuses in Thailand presenting the profit forecast or forecasting figures for the next period.

Even though these changes protect the investors, the useful guideline, the profit forecast, is cut off. That affects the individual investors, who have a relatively low capability to evaluate information on IPO, the most. Therefore, this project report studies factors which affect the initial return of IPOs. By using the published data and SET index, this research investigates data which have relations to the return of IPOs, which are significant and their relationships. Finally, it develops the initial return prediction model. This model may help investors to make decisions in investing.

2. Last five year in Stock Exchange of Thailand.

The study period 2000 to 2004 is selected because first, the end of study period, December 2004, is the latest period that that required data can be completed. Second, the beginning period, Jan 2000, seemed to be a start up period since the crisis period in 1997 and the annual volume of IPO issue
began to increase. In the year before study period, 1999, there is no IPO issued at all.

The amount of IPOs in the study period is 111 firms. However, for some IPOs, there is not enough information available to analyze in the primary market that caused a problem when investigating the relationship and creating models. Thus, 6 firms will be cut off. After excluding the IPOs that had incomplete information, we are left with a total of 95 firms in our population. The distribution by year of offering is shown in table 2.1. The number of issue firms is increasing year by year with the lowest in year 2000 with 2 issue firms and highest in 2004 with 50 issue firms. Table 2.1 shows the market size of IPOs in the population and distribution by year of offering. Size of IPOs is presented as Mcap which is the offering price multiplied by number of new shares issued. The unit is million Baht. The population of IPOs has a market capitalization of 10,521.90 million Baht on average of five years.

<table>
<thead>
<tr>
<th>Year</th>
<th>Mean of Mcap (Million Baht)</th>
<th>Minimum of Mcap (Million Baht)</th>
<th>Maximum of Mcap (Million Baht)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>22,925.00</td>
<td>18,850.00</td>
<td>27,000.00</td>
</tr>
<tr>
<td>2001</td>
<td>13,062.40</td>
<td>371.12</td>
<td>97,903.60</td>
</tr>
<tr>
<td>2002</td>
<td>6,730.13</td>
<td>92.81</td>
<td>27,663.58</td>
</tr>
<tr>
<td>2003</td>
<td>4,854.25</td>
<td>350.00</td>
<td>24,634.23</td>
</tr>
<tr>
<td>2004</td>
<td>5,037.71</td>
<td>210.00</td>
<td>65,280.89</td>
</tr>
</tbody>
</table>

The top five issues by size are PTT Public Company Limited (PTT), THAI OIL Public Company Limited (TOP), AIRPORTS OF THAILAND Public Company Limited (AOT), MAJOR CINEPLEX GROUP Public Company Limited (MAJOR), GENERAL ENVIRONMENTAL CONSERVATION Public Company Limited (GENCO).

In addition, the essence of the number of IPO and SET index for the period of 2000 to 2004 is shown in figure 2.1. This is the relationship number of IPO and the overall market or SET index in this period. It has shown an upper and downward trend, with in the first two year overall market going down with low issues and increased dramatically in 2003 while SET index going upward. It seem to have a direct relationship to each other.
Table 2.2 shows descriptive data of initial return 2000-2004. 50% of the firms in year 2000 were recorded positive initial return. In 2003, the highest positive initial return is recorded by the entire sector. In 2004 it is 64% of all issues have earned positive initial return and as the period of five years 68% of the issues have earned positive initial return. Of all five years, the maximum initial return is 166.67% in year 2001, the minimum initial return is -46.75% in year 2002, and mean is 23.35%.

Figure 2.3 shows the distribution of initial returns for IPOs from 2000-2004. 31.53% IPOs has a negative initial return, and 17% closes on the first day at the offer price. 4.5% doubles on the first day.

### Histogram of initial returns

(percentage return from offering price to first day close)

<table>
<thead>
<tr>
<th>Percentage initial return</th>
<th>Percentage of IPOs</th>
</tr>
</thead>
<tbody>
<tr>
<td>IR ≥ 100</td>
<td>1-4%</td>
</tr>
<tr>
<td>90 ≤ IR &lt; 100</td>
<td>5-8%</td>
</tr>
<tr>
<td>80 ≤ IR &lt; 90</td>
<td>9-12%</td>
</tr>
<tr>
<td>70 ≤ IR &lt; 80</td>
<td>13-16%</td>
</tr>
<tr>
<td>60 ≤ IR &lt; 70</td>
<td>17-20%</td>
</tr>
<tr>
<td>50 ≤ IR &lt; 60</td>
<td>21-24%</td>
</tr>
<tr>
<td>40 ≤ IR &lt; 50</td>
<td>25-28%</td>
</tr>
<tr>
<td>30 ≤ IR &lt; 40</td>
<td>29-32%</td>
</tr>
<tr>
<td>20 ≤ IR &lt; 30</td>
<td>33-36%</td>
</tr>
<tr>
<td>10 ≤ IR &lt; 20</td>
<td>37-40%</td>
</tr>
<tr>
<td>0 ≤ IR &lt; 10</td>
<td>41-44%</td>
</tr>
<tr>
<td>-10 ≤ IR &lt; 0</td>
<td>45-48%</td>
</tr>
<tr>
<td>-20 ≤ IR &lt; -10</td>
<td>49-52%</td>
</tr>
<tr>
<td>-30 ≤ IR &lt; -20</td>
<td>53-56%</td>
</tr>
<tr>
<td>-40 ≤ IR &lt; -30</td>
<td>57-60%</td>
</tr>
<tr>
<td>-50 ≤ IR &lt; -40</td>
<td>61-64%</td>
</tr>
</tbody>
</table>

3. Research methodology

After studying IPO in Stock Exchange of Thailand and the prior researches both international and domestic, this research focuses on the significant factors of those prior researches and creates some of its own factors, in order to apply them to investigate the relation between selected factors and initial return of IPO by multiple regression method. The amount of IPO issue in the study period (2000-2004) is not high, thus this research will take the entire population to investigate the relation and also to create the models. There is one dependent variable, initial return of IPO (in percentage), and the nine independent variables are,

1. 60-day trend of SET Index (SET) is the slope of the daily SET index 60 days before issue. To calculate each IPO the 60-day trend of SET index, it is required to get the 60 days data of SET index before issuing of each IPO. Then, those data is applied to simple linear regression and the slope taken the as a trend of 60-day SET index.

2. 60-day trend of SET’s volume (Vol) is similar to 60-day trend of SET index, but it uses the 60-day SET’S volume divided by one million (SET’S volume/10,000,000) instead of SET index. The 60-day trend of SET’S volume is the slope of the simple linear regression model.
(3) **AGE (AGE)** as the relevant to the prior research, age of the issue firm is represented by ln(age). Age is defined by number of year of experience in business.

(4) **FIRM SIZE (FIRM SIZE)** is defined in this study as total assets of company at the issue year. It is relevant to the prior research, size of the issue firm is represented by ln(Asset).

(5) **Return on Total Assets (ROA)** is the financial ratio to considere the best overall measure of a company’s profitability.

(6) **Debt ratio (Debt ratio)** measures what portion of a company’s assets are contributed by creditors.

(7) **Return on average of 3 years return (RO3)** is the return at year before issue divided by the average of three years return.

(8) **PE ratio (PE)** in a general guideline in gauging stock values. Generally, the higher the price-earnings ratio, the more opportunity a company has for growth.

(9) **PE ratio of 3 years (PE3)** is the PE that is calculated from three year earnings before issuing

After collecting all data, all of them must be converted or normalized to be in the form of nine variables above. Then, those nine independents will be applied into the multiple regression models in order to find out the influent variable in each sector including the entire of population. The report will investigate overall or entire population sector wise.

The results of the investigation between relationships will be presented, and the significant variables at level 95% confidence will be taken to create suitable models for each sector and for the entire market.

### 3.1 The Relationship between Initial Return of IPO and Independent Factors

\[ y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \beta_7 x_7 + \beta_8 x_8 + \beta_9 x_9 \]

where

- **y** = initial return of an IPO in Percentage
- **x_1** = AGE; nature log of the firm’s age, ln(Age), at the period of issue.
- **x_2** = debt ratio; liability over Asset at the issued period.
- **x_3** = ROA; Return over Asset at the period of issue
- **x_4** = FIRM SIZE; nature log of the firm’s asset, ln(Asset), at the period of issue.
- **x_5** = RO3; Recent return on average of three year return before issue.
- **x_6** = SET; Trend of the SET index 60 days before issue.
- **x_7** = VOL; Trend of the Volume (Baht) 60 days before issue.
- **x_8** = PE; Price/Earning ratio at the period of issue.
- **x_9** = PE3; Price/Earning ratio at three years before period of issue

### 3.2 Hypotheses of the study

There are seven groups of hypotheses for each industry and one overall hypothesis for the entire market.

**H_0:** There are no relationships between initial return of IPO and selected independent variables.

**H_1:** There are relationships between initial return of IPO and selected independent variables.

In order to identify the factors affecting the initial return of IPO, multiple linear regression analysis was performed by using Microsoft Excel. Therefore, to test the null hypotheses that the liner model contribute no information for the prediction of y against the alternative hypotheses that the slope is positive or negative that mean following coefficients value (β) value are zero. The alternative hypothesis (H_1) is not equal to hypothesis. If the data supported the alternative hypothesis, it can be concluded that the slope is positive or negative. If beta value is zero, it means there is no relationship.

**H_0:**  \( \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = \beta_7 = \beta_8 = \beta_9 = 0 \)

**H_1:**  \( \beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq \beta_5 \neq \beta_6 \neq \beta_7 \neq \beta_8 \neq \beta_9 \neq 0 \)

### 4. Empirical Results

To test the relationship between the initial return of IPO and independent variables of listed companies in Stock Exchange of Thailand, this study uses seven main hypotheses with nine variables. The findings are as follows.

#### 4.1 Agro and Food Industrial sector

After examination, it was not found that any variables that are significant under 95% confidence level. Thus, there are no relationships between the selected factors with initial return of IPO.

#### 4.2 Financial sector

There is a relationship between initial IPO return with Debt ratio and Firm Size of the companies in the financial industry with 70.72% of \( r^2 \). There are eleven listed companies come under financial industry in Bangkok stock market. The result of the hypothesis is accepted \( H_1 \) because F value is significant under 95 confidence level.

Two variables are significant under 95 confidence level. The coefficient value of the Debt ratio is -3.2203 with less than 0.05 P value. The Firm Size of the companies is also significant under 95 confidence level. The coefficient is 0.4776 under logarithm term. The final model is as follow.

\[ y = -7.43 - 3.22(Debt\ ratio) + 0.48\text{ (FIRM SIZE)} \]

#### 4.3 The Industrial sector

There are two main types of models created by this study. They are initial return of IPO with firm size and SET, and initial return of IPO with Firm Size and Vol.

#### 4.3.1 Initial return of IPO with firm size and SET

Significant F value is 0.0047 and 98.21% of \( r^2 \). There are six listed companies that come under industrial sector in Thai stock market. The result of the hypothesis is accepted \( H_1 \) because F value is significance under 95 confident level. The coefficient of SET index is 0.0873. The final model is.
4.3.2 Initial return of IPO with firm size and Volume

Significant F value is less than 0.0074 and 96.20% of $r^2$. The result of the hypothesis is accepted $H_0$ under significant of F. The final model is as follows.

$$y = -2.48 + 0.12(\text{FIRM SIZE}) + 0.09(\text{SET})$$

4.4 Market for Alternative Investment (MAI)

After examination, it was found that there are not any variables that are significant under 95% confidence level. Thus, there are no relationships between the selected factors. The results do not support to the alternative hypothesis, therefore null hypothesis is accepted.

4.5 Property and Construction material sector

The analysis is found similar to the industrial sector that there are two main types of model created by this study. They are initial return of IPO with Trend of the SET index, and initial return of IPO with the trend of SET’s volume.

4.5.1 Initial return of IPO with SET

Significant F value is 0.0129 with 31.20% of $r^2$. This model is related to verify the initial return of IPO and SET’s Volume. The result of the hypothesis is accepted $H_0$ because F value is significant under 95% confidence level. The final model is as follow.

$$y = 0.1328 + 0.1483(\text{SET})$$

4.5.2 Initial return of IPO with SET’s volume

Significant F value is 0.00006 with 16.05% of $r^2$. This model is related to verify the initial return of IPO with trend of SET index and initial return of IPO with the trend of SET’s volume. The result of the hypothesis is accepted $H_0$ because F value is significant under 95% confidence level. The final model is as follow.

$$y = 0.1968 + 0.1341(\text{SET})$$

4.6 Service sector

Significant F value is 0.0043 with 59.63% of $r^2$. There are fifteen listed companies come under industrial industry in Bangkok stock market. The result of the hypothesis is accepted $H_0$ because F value is significant under 95% confidence level. The final model is as follow.

$$y = 0.2107 - 0.0900(\text{RO3}) + 0.0006(\text{PE3})$$

4.7 Technology sector

After examination, it was not found that there is not any variables significant under 95% confidence level. Thus, there are no relationships between the selected factors. The results do not support the alternative hypothesis, therefore, null hypothesis is accepted. That means there are no significant relationships between initial return of IPO and given variables.

4.8 Stock Exchange of Thailand

Significant F value is 0.00006 with 16.05% of $r^2$ means that there is a relationship between initial IPO return and trend of SET index of the listed companies in Stock Exchange of Thailand. There are ninety-five issued companies in stock market. The result of the hypothesis is accepted $H_0$ because F value is significant under 95% confidence level. Therefore the final model is as follow.

$$y = 0.1968 + 0.1341(\text{SET})$$

5. Conclusion

This study examines the impact of initial IPO return with different company specific factors and overall market factors in Stock Exchange of Thailand in 2000-2004. Based on empirical analysis of the study, the following conclusion can be derived about the pattern of initial IPO return of listed companies in Thailand.

The study shown the main specific company factors (Age, Firm size, ROA, Debt ratio, Return on average of 3 years return, PE ratio, Three years PE ratio) and overall market factors (Trend of the SET index, Trend of the SET’s volume). That would influence the initial return of IPO in Thai stock market, further following company specific factors significant to earn initial return of IPO 1) firm size, 2) Three year PE ratio, 3) Debt ratio, and 4) Return on average of 3 years return. There are a number of company specific factors that were non-significant 1) Age, 2) ROA, and 3) PE ratio. All overall market factors were significant under this study. The trend of the SET index and the trend of the SET’s volume highly influenced to decide initial return of IPO. The study further reveals that the relationship to the initial return of IPO of each sector is different. They depend on the characteristics of each sector.

However, there is no relationship to the initial return of IPO in some sectors. It may have caused from the new classification of sectors, which is applied to this report, is less specific. For example, Agro & food Industry sector is the combination of the Agribusiness group and Food and Beverage group. Another example is that Technology sector consists of Communication Group, Electrical Production and Computer Group, and Electronic Component Group. Those groups that are combined may not have the same characteristics. The results are revealed only in sectors that have consistent combination and the results shown are only that the variable the go in the same direction in each group. Therefore, if the groups are more specific, in other words, divided in specific detail like the old classification, the result may be found more type of relationships. This report cannot find relationship in some sectors.
### Table 5.1 The summary of the model.

<table>
<thead>
<tr>
<th>No.</th>
<th>Sector</th>
<th>Model</th>
<th>$r^2$</th>
<th>Adjusted $r^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Agro &amp; Food industrial</td>
<td>No relationship</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>Financials</td>
<td>$y = -7.4279 - 3.2203(Debt ratio) + 0.4776(Firm Size)</td>
<td>70.72%</td>
<td>63.40%</td>
</tr>
<tr>
<td>3</td>
<td>Industrials</td>
<td>$y = -2.4792 + 0.1203(Firm Size) + 0.0873(SET)</td>
<td>97.21%</td>
<td>95.35%</td>
</tr>
<tr>
<td></td>
<td>Industrials</td>
<td>$y = -2.9826 + 0.1453(Firm Size) + 0.3452(Vol)</td>
<td>96.20%</td>
<td>93.67%</td>
</tr>
<tr>
<td>4</td>
<td>MAI</td>
<td>No relationship</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5</td>
<td>Property &amp; Construction</td>
<td>$y = 0.1328 + 0.1483(SET)</td>
<td>27.34%</td>
<td>23.06%</td>
</tr>
<tr>
<td></td>
<td>Property &amp; Construction</td>
<td>$y = 0.1782 + 0.7515(Vol)</td>
<td>31.20%</td>
<td>27.15%</td>
</tr>
<tr>
<td>6</td>
<td>Services</td>
<td>$y = 0.2107 - 0.09(RO3) + 0.0006(PE3)</td>
<td>59.63%</td>
<td>52.90%</td>
</tr>
<tr>
<td>7</td>
<td>Technology</td>
<td>No relationship</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>8</td>
<td>SET</td>
<td>$y = -7.4279 - 3.2203(Debt ratio) + 0.4776(Firm Size)</td>
<td>16.05%</td>
<td>15.15%</td>
</tr>
</tbody>
</table>

All coefficient values are significant under 95% confidence level

### 6. References

**Book**


**Journal**


**Internet**


[2] [http://www.set.or.th](http://www.set.or.th), the official site of The Stock Exchange of Thailand (SET).

[3] [http://www.sec.or.th](http://www.sec.or.th), the official site of The Securities and Exchange Commission, Thailand (SEC).