Chapter 4

Empirical Results

I.   Initial Returns In The Thai Stock Market (1987-1997)

Since the Thai stock market was established (1975), there are 522 IPOs that listed in the market during 1975 to 1997[1]. Figure 1 illustrates the distribution of IPOs since the establishment of the stock market. An inspection of Fig. 1 shows that companies appear to be interested in and used the stock market as a source of funds since 1987. Therefore, it is appropriate to investigate the initial returns using the data from 1987.

In the data period between 1987 to 1997, exclusion is made for data in which they have no relevant information of sizes or ages of firms. To reduce effect of extreme cases, the very high positive initial returns are excluded. Specifically, data in which their initial returns exceed 300% are excluded from the sample. The final sample contains 292 IPOs after disqualifying some observations and this set of data is used in the initial return calculation. Table 1 describes criteria used for selecting the sample and also presents the distribution of the sample by year of offering.

According to Table 1, the year 1990,1991,1993 and 1994 are hot markets for IPOs while the other years seem to be mildly cold markets for IPOs. Among these years, the year 1991 seems to be the hottest market for IPOs. Table 2 and Figure 2 show the distribution of the data across industry sectors[2].

From Table 2, the data indicate that although variety of industrial sectors enter the IPO market during 1987-1997, some industries display a high interest to issue stocks such as finance & securities (10.3%), property (12.0%) and investment companies (9.2%). Table 2 also provides finer exploration into the distribution of

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[1] Data are taken from the I-SIM database

[2] Industry sector code is the same as the SET industry code.

IPOs by classifying each sector by year. Year 1991 attracts firms in the sector of investment companies, and property development. Year 1993 is the year for property development sector. Sector of finance and securities precipitate in year 1991,1992,1993 and 1996.

Using data during 1987-1997 in which IPOs are clustered, the initial returns of 292 IPOs are examined in Table 3. According to Table 3, IPOs in the Thai stock market also show large positive initial returns at the first day trading or large underpricing as usually found in other stock markets. The mean of initial returns[1] is 46.73% and the median is 32.97%. Results from Table 3 also indicate that the number of underpring cases is higher than the number of overpricing cases except for the year 1997. Of 292 IPOs during 1987-1997, there are 238 IPOs where offer prices are lower than their first day trading prices (underpricing cases) and 54 firms where their offer prices are greater than their first day trading price (overpricing cases). The mean and the median of underpricing over the whole period are 61.59% and 12.15% respectively. In the 54 overpriced issues, the mean and the median of overpricing are -18.77% and -12.62% respectively. The maximum underpricing case is 300%[2]. When the initial returns are classified by year of offering, the result indicates that level of underpricing varies significantly through time. The results also show that the degree of underpricing tend to be high for the hot-market year or the year that found many IPOs entering the stock market. This finding (high initial returns in the hot market) is usually called as 'hot issues'. A number of authors (Ritter (1984), Ibbotson (1975), and Ibbotson and Jaffe (1975)) have also documented the existence of periods (usually short period) characterized by high number of offerings exhibiting very large initial returns. Many explanations in this problem rely on the theory of short-run underpricing explanations. For example, Ritter (1984) utilizes the Rock adverse selection model to examine the hot issues market of 1980-1981. According to Rock's implication, highly uncertain issues are more underpriced. Ritter's findings, however, do not support the Rock's hypothesis. Table 3 also indicates that the gross proceeds

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[1] Initial return is defined as (the first day trading price – offering price)÷offering price

[2] The maximum underpricing is indeed higher as 300%. Since we control the maximum number of underpricing to 300%, the result, thus, shows maximum of underpricing at 300%.

of IPOs vary across time. The average gross proceed during the whole period is 195.35 million Baht.[1]

Initial returns also vary across industry. Table 4 provides results of initial returns categorized by industrial sectors. According to Table 4, It is shown that the energy sector poses highest initial returns follow by the pulp & paper sector. Except for the pharmaceutical sector, which there is only one IPO, banking sector displays the lowest initial return. These results are consistent with other papers that found high initial returns concentrated in the oil and gas industry (Ritter 1984). And the lowest initial returns found on bank industry also are consistent with Mauer and Senbet (1992)s' findings. In the study of Mauer and Senbet (1992), they explain that incomplete spanning of the primary issues in the secondary market and limited investor access play an important role in explaining the varying of underpricing across industrial sectors. Banking sector is likely to have many secondary market substitutes and therefore experience lower initial returns. This argument can also apply to explain the findings.

The average initial return of the Thai IPOs is substantially large when compared to other developed market. The initial returns in Asian stock market are also very high. For example, the initial returns in Malaysia, Singapore, Taiwan and Korea are 80.3%, 34.7 %, 45.0%, and 78.1% respectively while the initial returns in the U.K. and the U.S. stock market are 12.0% and 15.3% respectively. To compare the degree of underpricing across markets, Appendix B[2] provides the summary of initial return found in many countries.

II. Initial Returns and Investors in the Primary Market

In this section, the relationship between initial returns and level of subscription from each type of investor in the primary market is presented. The data of subscription from various type of investors are obtained from the "Selling Report", the Securities Exchange Commission (SEC). Since data on the "Selling Report" begin

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[1] Gross proceed is defined as the offering price multiply by number of share issue.

[2] This table is obtained from Loughran, Ritter and Rydqvist (1994) pp. 167

from September 1993, and are matched with the same period data of IPOs (between 1993-1997) with a total of 109 firms in the test. Table 5 provides the descriptive data of 109 IPOs that are used to find the relationship. The mean initial return on this sample is 16.57%.

Table 5 also partitions the sample into two sub-periods. The first sub-period is from Feb 1993 to July 1994, which is the period before the SEC announced the rules, promoting the fairness of allocating new issues. The second sub-period is from August 1994 to July 1997. Panel B reports the results of the first sub-period and Panel C reports the results of initial returns and level of investors in the second sub-period. Investigation of Table 5 indicates that initial returns from the two sub-periods are significantly different from each other. Mean initial return before announcing the rule is 49.62 while the mean initial returns after new regulation is 8.69. This result confirms the study of Kritsernvong (1998). However, when examining the changes of investors' composition between the two sub-periods, the percentages of each investor type allocated are not very much different. This finding does not support the argument conjecturing that changes in initial returns between the two sub-period stem from changes in the composition of investors. However, this finding supports the model of Stoughton and Zechner (1997) who show that rationing method is the major determinant of underpricing and, whenever pro-rata allocation regulations are imposed, one should expect less underpricing. The regulation promote the fairness of distribution the new issue shares to individual investors. After it is enforced, underwriters or issuers can not allocate shares to favor institutional investors. The ability to ration strategically is declined. Accordingly, less underpricing is observed.

Table 6 explores the relationship between percentages of share allocated to each investor type categorized by the offering size (Panel A of Table 6) and ages of firms (Panel B). In Panel A, the size of firms is measured by the gross proceed (GP) and Panel A classifies the size into three levels using the 33.33 and 66.67 percentile. The results indicate that individual investors prefer to subscribe in the small size offering since their levels of holding are a decreasing function with the size of offerings while foreign institution investors prefer large size offerings to small size offerings because their levels of holding increase with the size (Panel A). Panel B of Table 6 examines the relation between age of firms and level of holdings by each

investor type. Investigation of Panel B shows that the subscription of individual investors is positively correlated with the age whereas the subscription of foreign investors is negatively correlated with the age of firms. These findings indicate that foreign investors are interested in new (small number of ages) and large size firms while domestic investors tend to be interested in small size and old firms. The results of foreign investors prefer young firms and individual investors prefer the old age firms do not support argument claimed that the old firms relatively produce more information, so, they are held primarily by informed or institutional investors (Merton (1987)). According to Bailey and Jagtiani (1994), who argue that information availability is major deteminant in attracting foreign investors, it can be interpreted that new firms and large size offerings provide more valuable information to foreign investors.

Table 7 examines the relationship between percentage of shares allocated to each type of investors and the initial returns. Panel A investigates the allocation to investors in the cases of underpricing and Panel B examines them in the cases of overpricing. Results from this table exhibit that both local and foreign institutional investors also participate in the overpriced offerings. This finding is consistent with the finding of Hanley and Wilhelm (1995) whose finding shows that institutional investors not only participate in the underprice offerings, they also involved in the overprice offerings. The results of subscription on both underpriced and overpriced offerings by institutional investors cast doubt to the Rock's model. According to the model, we should observe that informed investors participate with low interest in the overpriced offerings. Explanation from Hanley and Wilhelm (1995) is that institutional investors are afraid of being neglected in the next offering, thus, they have to participate in both underpriced and overpriced offerings. This explanation can also apply to the finding in this study.

Table 8 examines the correlation between initial returns and proportion of shares subscribed by each type of investors. Investigation of Table 8 indicates that level of initial market adjusted returns are significantly and positively correlated with

percentage of foreign institutional investors[1]. The results also show positive but not significant correlation between initial market adjusted returns and local institutional investors (0.194). The correlation coefficient between local individual investors and the initial market adjusted returns are negative at -0.224. According to table 8, the results support the hypothesis that institutional investors and foreign investors are informed investors and they participate more in the underpricing issue. The negative correlation between initial returns and percentages of local individual confirms the statements that posit low information acquisition ability of local individual investors. Thus, individual investors are less informed investors compared with institutional investors in the primary market. The correlation coefficient between size and individual investors is significantly and negatively correlated (-0.334) while this correlation with foreign investors is positive (0.418). The correlation coefficient between age of IPO firms and individual investors is positive while the correlation of age and foreign investors is negative. These results confirm the result from Table 6. Further examination of investor types and the initial returns is made by cross-tabulating the mean of initial returns and level of subscription by each investor type.

Table 9 presents the relationship between initial returns and level of shares subscribed or allocated to each type of investors. From Table 9, Panel A shows the cross-tabulation between initial returns and percentage of local institutions. Local institution is divided into three levels using the 33.33 and 66.67 percentile as cut-off points in dividing the level of holdings. The results show that local institution increases the subscription with the increasing in the mean initial returns (Panel A). When this relationship is investigated using local individual investor, it turns out that the increasing percentage of shares held by local individual investors is negatively correlated with the mean initial returns (Panel B, Table 9). The level of holdings by foreign investors also exhibit positive correlation with the increasing of mean initial returns. The results from this part support the hypothesis *H1* in Chapter 3 which state that level of informed investors is positively correlated with the degree of underpricing and it also imply that the remainder of investors are uninformed investors. Of the three groups, local individual investors have the lowest information

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[1] When the pure initial return is used instead of the initial market adjusted returns, the results are not different from Table 8.

acquisition ability compared to local institutions and foreign investors. These findings also provide the direct support to the Rock (1986) and Carter and Manaster (1990).

Table 10 shows the regression results from equation (3.1) to (3.3). Panel A, B, and C estimate the equation (3.1), (3.2) and (3.3) respectively. The models are moderately supported with R^2 equal 23.3, 25.5 and 24.5 respectively and the F-statistics are significant at the 1% level. Investigation of Table 10 shows that initial return is significantly and positively correlated with $LOISTN_i$ and $FRGINST_i$ (Panel B). The coefficient of $LOISTN_i$ is 156.35 and the coefficient of $FRGINST_i$ is 266.77. $INITIAL_i$ is also negatively but not significantly correlated with $LOINDL_i$ (Panel A and C).

The coefficients of AGE_i are significantly and negatively correlated with initial returns (Panel A, B and C). These results confirm the argument that small age firms are exposed to high risk and are traded at large underpricing (Beatty and Ritter (1986). Another approach to explain this relation is that young firms have scarce historical information about their quality, thus, these firms have to set the offer price to be low to attract investors (Benveniste and Spindt (1989))

Size of firm is significantly and positively correlated with the initial returns according to Panel A, B and C which this result is not consistent with the hypotheses conjecturing negative correlation between issue size and underpricing (Ritter (1984), Beatty and Ritter (1984), Rock (1986), Mauer and Senbet (1992). Possible explanation is that, in this market, investors do not believe that issue size conveys information of quality of firm. Thus, underwriters or issuers do not set offering price to be high in large firm.

Market period and variation in industry returns are not statistically correlated with the initial return of IPOs. The findings do not support Ritter (1984) and Mauer and Senbet (1992) who find that industry returns variation is one determinant of underpricing. The feature of market and industry do not correlate with the initial return of IPOs since the coefficient of HOT_i and $INDRET_i$ are not statistically significant.

In conclusion to findings in the primary market, the IPOs in the Thai stock market are underpriced. The degree of underpricing has relationship with some groups of investor. Foreign investors and local institution investors are positively correlated with the degree of underpricing while individual investors are negatively correlated with the degree of underpricing. Regression results also support the positive relationship between underpricing and foreign investors. These findings can verify the hypothesis stated that informed investor is positively correlated with underpricing which in turn, can validate the Rock (1986)'s, Carter and Manaster (1989)s' model. Further, the results also verify the hypothesis claimed that foreign investors and institution investors have superior information relative to individual investors in the primary market.

III. Aftermarket Performance of IPOs

This section presents results of the performance of IPOs in the secondary market. Data used are IPO firms that issue common stock during 1988 to 1996. In total, there are 292 firms that listed in this period. However, due to some missing data in calculation the returns of IPOs and benchmarks, number of observations are not equal the total observations and are not the same when different tests are reported. Table 11 to Table 14 reveal the performances of IPOs three years subsequent to their trading. Monthly benchmark-adjusted returns method (CARs) is used to measure the aftermarket performance. Table 11 is the result of the aftermarket performance using the matching firms benchmark. Table 12 employs the SET index benchmark. Table 13 is the long-term performance using industry index as benchmark. Finally, Table 14 uses both equally-weighted and value-weighted size-match portfolios.

According to these tables, result of after market performance using matching firm benchmark is not consistent with the other studies which posit underperformance of IPOs (Table 11). The aftermarket performances of IPOs using SET index benchmark, industry benchmark index and size-match portfolio benchmark confirm the previous studies conjecturing the underperformance of IPOs in the long-run (Ritter (1991), Loughran and Ritter (1995) and others). The uneven result from the matching firm benchmark can be explained as the benchmark being inappropriate since number of firms in the market are small. When matching method focuses on

each industry, this criterion further reduces the number of firms. Thus, the matching firms selected may not be closest in the size with IPO firms and hence may not prove a good benchmark for this market.

Using SET index as benchmark (Table 12), the three-year performance of IPOs is worse than the SET index by -55.30%. The long-run underperformance is also confirmed when alternative benchmarks are used. The result using industry index benchmark shows that the three-year AR and CAR are -1.15% and -102.44% (Table 13). Constructed-index benchmarks also show that the long-run performances of IPOs are substantially poor. Table 14 indicates that the CARs using equally-weighted and value weighted size matched portfolios are -284.83 and -280.97 respectively. When compared to the U.S. stock market, the aftermarket performance of IPOs is very much worse than that of the U.S. market which reports that the three-year CARs is -29.13%. (Ritter (1991)).

Table 15 shows results of the aftermarket performance when SET index is used as benchmark and categorized by the year of issuing. From Table 15, the three-year cumulative abnormal returns (CARs) of IPOs are negative for every year. The values of CARs are substantially high for 1-year, 2-year and 3-year returns. Figure 3 also indicates that the aftermarket performances of IPOs are negative for all benchmarks except for the matching firm benchmark. From this figure, it is shown that the CARs have declined since the first month trading. Table 16 provides the results of the aftermarket performance of IPOs categorized by industry sector. As illustrated by Table 16, the long-run performance of IPOs in different industries varies widely. Table 16 indicates that household goods sector substantially underperforms the market followed by packing and transportation sector. Energy sector exhibits the best long-run performance. Results from section I show that energy sector displays the lowest value of initial returns (overpriced offerings). This finding does not support the overreaction hypothesis introduced by DeBondt and Thaler (1985). Loughran and Ritter (1995) apply the overreaction hypothesis to explain the overshooting of price at the first day trading and declining of price on the following period. Loughran and Ritter (1995) argue that offering price is not too low but market price is too high on the first day trading due to investor overreact to the IPO stocks. The finding also is not consistent with Ritter (1991) who finds that oil and gas sector are the worst long-

run performance sectors. The difference in finding can be explained as there are different market condition and different sample period used between the two countries. In Ritter (1991), poor long-run performance of oil and gas industry occurs because oil prices substantially declined during their sample period (1981-1983). However, in the Thai market, during the period of 1991 to 1996, this country exhibits a two-digit growth in GDP and the demand of energy rises substantially during this period. Therefore, the energy sector, in this period, is the highest performance sector.

The overreaction hypothesis in the IPO trading is examined again in Table 17. Table 17 documents the relationship between the CARs and size (gross proceed) in Panel A. Panel B reports the relationship between the CARs and the market adjusted initial returns (IR). In Table 17, IPO firms are segmented by their gross proceeds in panel A and by adjusted initial returns in panel B. Panel A and Panel B indicate that size of firms and adjusted initial returns of IPOs are not related to the aftermarket performance. The results also do not support the overreaction hypothesis of the long-run underperformance of IPOs and are not consistent with the finding of Ritter (1991), Field(1997) who find negative relationship between cumulative adjusted returns and initial returns. According to the overreaction hypothesis, past return of stocks should be negatively correlated with previous returns. If this hypothesis is correct, we should observe the decreasing CARs with the increasing IR.

For robustness check, the wealth relative method is used to measure the aftermarket performance of IPOs. Table 18 reports the results of the holding period returns of IPOs, the holding period returns of benchmark (SET index) and the wealth relative performances. Results from table 18 confirm the results of long-run underperformance of IPOs measured by the cumulative abnormal returns (CARs). An investigation of Table 18 shows that the returns of IPOs are closest to the benchmarks' returns for one year subsequent to their offerings. The one-year wealth relative values using matched-firm benchmark, SET- index benchmark and industry index benchmark are 1.00, 0.95 and 0.98 respectively. The two-year wealth relatives (WR) are also less than 1 for the three benchmarks which means that the holding period returns of IPOs are lower than that of benchmarks. After two years of issuing stocks, the performance of new issue firm becomes lower than benchmarks. The values of wealth relative for three-year returns are 0.96 for matching firm index and

0.71 for the SET index benchmark. Using industry index benchmark, the value of wealth relative is 0.63.

IV. Aftermarket Performance and Investor Allocation in the Primary Market

The superior ability of informed investors is examined by investigation the relationship between level of subscription by informed investors and the performance of firms in the aftermarket. According to the hypothesis *H2* in Chapter 3, the level of subscription by informed investors should exhibit positive, relationship with the aftermarket performance of IPOs. If institutional investors and foreign investors are informed investors, we should observe positive relationship between their level of subscription and the future performance of IPOs. Table 19 reports the results of the correlation between investor's types in the primary market and the cumulative abnormal returns (CARs) using SET index as benchmark for one, six, twelve, eighteen and twenty four months. The data of investor's subscription or allocation are from the Selling Reports. Correlation coefficients from Table 19 indicate that foreign investors' subscription is positively and significantly correlated with the one-month CARs and the correlation coefficients are not statistically significant for the remainder of the CARs.

Further examination of the relationship between investors' subscription in the primary market and the CARs is reported in Table 20. Table 20 shows cross-tabulation of the mean of cumulative abnormal returns (CARs) and the level of investors holding categorized by type of investors. Investigation of Table 20 reveals that the relationships between level of subscription of institutional investors (Panel A) and the aftermarket performance of IPOs are positive for 6-month CARs and negative for 12-month CARs. The level of subscription from individual investors (Panel B) shows negative relationship with the CARs for the 1-month CARs and positive relationship with the 12-month CARs. The results are inconclusive to explain the superior ability of institutional and individual investors. However, foreign investors explicitly show that they are superior investors relative to local individual and local institutional investors since level of subscription from foreign investors is positively correlated with the CARs for all periods (Panel C). The results from this section

support the superior investment of foreign traders but not support the superior investment of local institutional investor.

V. Aftermarket Performance and Investor Trading in the Secondary Market

This section provides the results of investigating the relationship between aftermarket performance of IPOs and investor trading in the secondary market. The data used to test this relationship are the 39 IPOs in 1996. Table 21 presents the aftermarket performance using the cumulative benchmark-adjusted returns (CARs) of the 39 IPOs. Column A shows the cumulative adjusted returns using SET index as benchmark. Column B provides the results of CARs using equally weight size-match portfolio as a benchmark (Index1) and Column C uses the value weight size-match portfolio as a benchmark (Index2). According to Table 21, the aftermarket performance of IPOs are worse than the benchmarks when the benchmarks are equally weighted and value weighted size match portfolio (Index 1 and Index 2). However, the performance of IPOs is better than the benchmark when SET index is used as a benchmark. The conflicting results may stem from small number of data or may be due to the economic crisis that has occurred since the end of the year 1996. The crisis may cause the overall market to fall more rapidly than some IPO stocks. Thus, cumulative adjusted returns using SET index as benchmark exhibit positive value.

Table 22 presents the cumulative net investment from various investors on the newly issued stocks. Panel A of Table 22 shows the investment from the four groups of investors at the first day of their trading while Panel B describes the descriptive data of trading from each investors at the first month (21 trading days) subsequent to the offering. From Panel A of Table 22, customer portfolio is the most active trading investors on the first trading day of the new issues. This group accounts for 81.91% buying and 74.94 % selling. Customer portfolio is also the only one of the four groups who is positive net buys (buy minus sell) while the other three groups show negative net buys. The mean and median net buy from broker customer group are 6.87 and 11.26 respectively. Panel B of Table 22 shows the first 21-day cumulative net trading of 39 IPOs in 1996. According to Panel B, customer portfolio is still the largest group

of investors at 21 days subsequent to listing date of IPOs. They are the only net buy group while the other three groups are the net sell groups.

To test the hypothesis of superior ability of investors in the secondary market (hypothesis *H3*), the relationship between changes in the cumulative net investment during the first 21-day and the aftermarket performance of IPOs is examined for each investor group. Change in cumulative net investment is the difference between the 21-day cumulative net investment and the net investment at the first day trading of IPOs. For each type of investors, the change in cumulative net investment is divided into two groups:- the positive change in the cumulative net investment and the negative change in the cumulative net investment. Table 23 to Table 26 show the aftermarket performance of IPOs by each investor group portfolio and classified them into the positive- or negative-change of the cumulative net investment. For broker portfolio (Table 23), there are 25 IPOs which the broker portfolio investors increase their cumulative net investment during the first 21-day subsequent to their trading. These IPOs (25 cases) also have the positive 18-month aftermarket performance which measured by the cumulative adjusted returns (CARs = 29.86%). The IPOs which brokers decrease the cumulative net investment are negative in the value of CARs (-26.94%).

For customer portfolio (Table 24), there are 11 cases which the customer portfolio investor increase the net investment during the first 21-day. However, the 18-month cumulative adjusted returns of these IPOs are negative (CARs = -23.14%). The 18-month CARs turn out to be positive in the cases where customer portfolio investors decrease their net investment (CARs = 21.64%).

For the mutual fund and foreign portfolio investors (Table 25 and Table 26), the results exhibit the positive relationship between the changes in cumulative net investment over 21-day period and the 18-month cumulative adjusted returns (CARs). Therefore, according to Table 23 to Table 26, results show that broker portfolio investor are only one group of investor which their changes in the cumulative net investment are not positively correlated with the 18-month CARs. And, this group of investor should be the less informed investors relatively to the other three groups (the broker, the mutual fund and the foreign portfolio investors).

These findings are consistent with Field (1997) who demonstrates that higher institutional holding on IPOs stocks at the end of the first quarter subsequent to trading is positive correlated with the cumulative adjusted returns on the three year horizon. Field (1997) explains that institutional investor is informed investor who has superior ability to predict the future performance of IPO stock. Therefore, informed investor selects to hold the IPOs which the aftermarket performance are not subjected to be underperformed. From the Field (1997), level of holding by institutional investor at the end of the first quarter represents superior investment of informed investor. The result does not concern about level of trading or holding occurred during the first quarter or after the first quarter. The results in this study, however, take care about trading between the first month by using the cumulative net trading (net buy-sell) and it is concluded from this study that foreign investor and institutional investor have more ability to select IPOs regarding its future performance relative to customer portfolio investor.

The superior ability of informed investors can be separated into two types:- superior information and superior technique in analyzing the information. However, Bailey and Jagtiani (1994) indicate that information availability or foreign investor 'familiarity' is the major factor that influences foreign investment in the Thai stock market. Also, Merton (1987) shows that informed investors will trade on assets they have information or they are familiar. According to these studies the level of holding or trading of informed investor seems to depend on their level of information they have about firms rather than the superior technique used in analyzing information.

VI. Co-Movement between Aftermarket Performance of IPOs and Cumulative Net Investment

In this section, the co-movements in the cumulative net investment (CNI) and the cumulative adjusted returns of IPOs (CARs) are examined to see whether there have different associations between the CNI from each investor type and the CARs. Table 27 presents the correlation coefficients between the daily cumulative net investment (CNI) and the daily cumulative adjusted returns (CARs) of each investor group. The time-series data of the 39 IPOs are pooled together and examined the correlation. Investigation of Table 27 reveals that all coefficients are statistically

significant. The positive correlation between the CARs and CNI is found on the relationship between mutual fund portfolio and the foreign portfolio investors. Foreign portfolio investors and customer portfolio investors show substantial negative correlation (-0.857). The correlation coefficient between foreign investors and mutual fund portfolio is significant and positive at .356 while the correlation coefficient between foreign and broker portfolio is negative. These results show that foreign investor and mutual fund are investors whose trading are positively correlated with contemporaneous cumulative adjusted returns while customer and broker portfolio are investors whose trading are negatively correlated with contemporaneous cumulative adjusted returns. The result also shows that customer portfolio is investor who often trades in the opposite direction to foreign investors.

Table 28 shows the regression results of equation (3.10) and equation (3.11). Monthly regressions of cross-sectional 38 IPOs are reported for consecutive 12 months period. Examination of Table 28 shows that the sign of coefficients of $BROK_i$, $CUST_i$ and $FRGN_i$ are almost negative in all cases. However the t-statistics are not significant for these coefficients. The sign of coefficient of $MUFU_i$ is positive but also not statistically significant. Therefore, this results fail to conclude that investment from foreign, broker and mutual fund are superior to the customer portfolio investors. The results of not finding the statistical explanation to the contemporaneous returns do not disturb previous findings which conclude that foreign investors are better informed investors. Since, this test is the relationship between investment (CNI) and contemporaneous performance (CARs), the returns on IPOs and benchmark may fluctuate due to unobserved new information in the market. Thus, the investment from each group of investors could not explain the corresponding abnormal performance.

VII. Forecast Accuracy of EPS on IPO Stocks

This section reveals the results of EPS forecast from financial analyst. The information of analyst forecast are from the Institutional Broker Estimate System or I/B/E/S database. From the I/B/E/S database, there are 46 brokers that follow the Thai stock market. The list of these are shown in appendix C. Out of 46 companies shown, 5 are Thai brokers. The criteria for separation between Thai and Foreign brokers is

that if the brokers register with the Security Exchange of Thailand, they are labeled as Thai brokers. Apart from these are foreign brokers.

Table 29 provides the descriptive of mean forecasts (average across brokers) of EPS for the recent one- to three- year period after issuing. Panel A. shows the performance of forecast from total analyst in the market, Panel B. shows the forecasted performance of the foreign brokers and Panel C reports the forecasted performance of Thai brokers. The IPOs in this analysis are the firms that issues new stocks during 1987 and 1997 and have data available in the I/B/E/S database. The forecasts made are for 1-year, 2-year and 3-year. One year forecast window is defined as the difference in number of days between the forecast end date and the issuing date of IPOs within the 6 to 18 months (180 days to 540 days) and having been recorded in the data as the one year forecast. Two-years forecast window is defined as the difference in number of days between the forecast end date and the issuing date of IPOs within the 19 to 30 months (541 days to 900 days) and having been recorded in the data as the two year forecast.period. and three-years forecast window is defined as difference in number of days between the forecast end date and the issuing date of IPOs within the 31 to 40 months and having been recorded in the data as the three year forecast.

Evidence from Table 29 shows that analysts are over optimistic in their EPS forecast of IPOs in the Thai stock market. The percentages of forecast error are negative for every year of forecast window. The negative forecast errors exist both in the forecast of foreign brokers and Thai brokers. This finding is consistent with the finding from Rajan and Servaes (1997) who evidence that analysts are overoptimistic about the earnings and growth performance of IPOs in the U.S. stock market during 1975 to 1987. Further investigation of Table 29 shows that the forecasts accuracy from analysts deteriorate over time since absolute forecast error increases with the forecast windows. In this study, the absolute forecast and signed forecast error are very much higher than the error computed in the study of Allen, Cho and Jung (1997)[1] who find that the absolute forecast at fiscal year end is 35.5 % and the mean signed forecast is -16.4 %. The results from Table 29 show that the mean absolute forecast

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[1] Allen, Cho and Jung use data during 1989-1991 and 147 firms are included in the sample.

error for one-year error from total analysts (Panel A) is 61 % and the signed forecast error is -51 %. Possible explanations to the large error in this market are that level of disclose information is high for the IPO stocks. And, the high level of disclose information is positively correlated with high EPS forecast error. This association between analyst forecast error and level of disclose information is studied by Higgins (1998).

VIII. Eps Forecast and the Aftermarket Performance of IPOs

The hypothesis *H4* which examines the positive relationship between accuracy of forecast and the aftermarket performance of IPOs is tested using the Ordinary Least Square (OLS) method. From equation 3.14, CAR is used as dependent variable and signed–forecast error in corresponding period with the CAR is used as explanatory variable.

Regression result for equation 3.14 is presented in Table 30. From Table 30, the model can explain only .5% of the ability of one-year CARs. The F-statistics increase in the two years and three years CARs. The positive sign of coefficients of the FE conform to the expected signed for all of CARs. However, none of them is significant except for the three-year CARs. Investigation of Table 30 indicates that the 3-year signed-forecast error is significantly and positively correlated with the 36-month CARs. This implies that investors in the IPOs market, place their emphasis on the long-term (>2 year) forecast of EPS.

Further investigation of the relationship between analyst forecast data and the aftermarket performance of IPOs is performed using the CARs and the revision of EPS forecast in one year. Revision in EPS forecast is proxy for information changes perceived by analysts. If good news about future performance of IPOs gradually exposes to the market, analysts revise his forecast up to reflect the changes in information he received. But, if the future performance of firms becomes to deteriorate, analyst will revise his previous forecast to reflect the changes. In this case, the analyst revises down his previous EPS forecast. Hence, positive relationship between future performance of IPOs and analyst forecast revision of EPS is expected.

The hypothesis *H5* which posits the positive relationship between the aftermarket performance of IPOs and the revision of EPS forecast is tested using OLS method from equation 3.15 in which CAR is used as dependent variable and analyst forecast revision is used as explanatory variables. Firm size, book value to market value ratio and market adjusted initial returns are also used as independent variables.

Table 31 provides the descriptive information of the analyst forecast revision (Panel A) and the regression results from equation 3.15 (Panel B). In Panel A, out of 113 revisions, 55 cases (48.7%) are positive revisions (forecast upward) and 58 cases (51.3%) are negative revisions (forecast downward). The average value of forecast revision is -.00791 with the standard deviation of 0.052. The average length of time between last estimate and first estimate of EPS is 126.4 days.

Table 31, Panel B, also presents the regression results from equation 3.15. According to Table 31, the coefficient of *REV* is significantly and positively correlated with the 12-months CARs and the 24-month CARs. These results suggest that the revision of analysts' forecast data is valuable data for investors on the IPO stocks.

In conclusion to this section, the EPS forecast by financial analyst of IPO stocks have systematic error and this error shows that analysts are over optimistic on prediction the future performance of IPO firms. In other words, analysts tend to forecast better than the actual value. This result is similar to Rajan and Servaes (1997). The error of forecasting is positive correlate with the aftermarket performance of IPO firms for the three-year period forecast. The revision of EPS forecast is an important determinant of future stock performance since it is positively correlated with the cumulative adjusted returns. These finding support the argument conjecturing the influence of analyst earnings forecast on stock price (DeBondt and Thaler (1990), Brown, Foster and Noreen (1985)).

Table 1

The Criteria Used in Data Selection and Distribution of IPO Samples Categorized by Year of Offering During 1987 -1997

From total number of IPOs, a sample is drawn to analyze its initial returns. In total, there are 292 issues used in determining the short-run anomaly. Panel A shows the criteria used in selection the data, and Panel B describes the distribution of the sample. Data with no offering price, no data on gross proceeds and no data on ages of firms information are excluded. Data of IPOs from 1975-1986 are excluded since the stock market is in the first stage and few stocks are traded. Finally, data of IPOs whose underprice is greater than 300% are excluded.

Panel A: selection criteria

Criteria	Number of IPOs
Total IPOs from 1975-1997	522
Exclude data with no offering price and detailed data available	202
Exclude data during 1975-1986	19
Exclude data which underprice >300 %	9
Total IPO sample	292

Panel B: distribution of IPOs in the sample

Year of IPOs	No. of IPOs.
1987	8
1988	15
1989	25
1990	32
1991	55
1992	32
1993	38
1994	35
1995	20
1996	28
1997	4
Total	292

Table 2

Distribution of IPOs during 1987-1997 Classified by Industrial Sector

The table reports the number of IPOs categorized by sector and year of issuing. Sample is IPOs firms during 1987-1997. Industrial sector and industrial sector code are officially used by the Stock Exchange of Thailand. N is number of firms in each sector. Percent is the percentage of issues occurring in each sector.

Industrial sector code	Industrial sector	N	Percent	Distribution by year											
				1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	Total
1	Agribusiness	18	6.2			1	3	3	3	5	3				18
2	Banking	3	1.0	1	1	1									3
3	Building &Furnishing Materials	20	6.8			4	1	5	4	1		1	4		20
4	Chemical &Plastics	10	3.4				2	2			2	3	1		10
5	Commerce	5	1.7			1			1		2			1	5
6	Communication	8	2.7				1	1	1	1	3		1		8
7	Electrical Products & Computer	5	1.7		1	1	1				1		1		5
8	Electrical Components	2	.7			1				1					2
9	Energy	7	2.4			1	1			1	2	1	1		7
10	Entertainment &Recreation	4	1.4						1			1	2		4
11	Finance & Securities	30	10.3	1	3	1	1	4	4	5	3	3	5		30
12	Foods & Beverages	16	5.5	1	2	2	2	1	2	2	2	2			16
13	Health Care Services	11	3.8			1	1	2	2	1	2		2		11
14	Hotels & Travel Services	8	2.7		2	2	3	1							8
15	Household Goods	8	2.7					3	1	2	2				8
16	Insurance	14	4.8	1	1		2	5	1	2		1	1		14
17	Investment Companies	27	9.2	1		2	4	9	2	5	3	1			27

Table 2. Continue

Sector no	Industrial sector	N	Percent	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	Total
															Distribution by year
18	Jewelry & Ornaments	3	1.0				1	2							3
19	Machinery & Equipment	4	1.4					1	1		1		1		
21	Packaging	11	3.8			3	2	2		1	3				11
22	Phamaceutical Products	1	.3				1								1
23	Printing & Publishing	9	3.1		1	1	1	3	1	1			1		9
24	Professional Services	1	.3					1							1
25	Property Development	35	12.0		1		3	6	4	8	3	3	5	2	35
26	Pulp & Paper	4	1.4	1		1							1	1	4
27	Textiles, Clothing &Footwears	7	2.4	2	1	1		1	1	1					7
28	Transportation	7	2.4		1				1	1	1	2	1		7
29	Vehicles & Parts	6	2.1			1				1	1	1	2	1	7
30	Warehouse & Silo	2	.7		1		1								2
31	Others	6	2.1				1	1	2		1			1	6
	Total	292	100	8	15	25	32	55	32	38	35	20	28	4	292

Table 3

Initial Returns of IPO Firms during 1987-1997

This table reveals the results of initial returns of 292 new issues during 1987-1997. The initial returns are categorized by year of issuing. Initial return is the average of returns on the whole sample size computed at the first day trading of IPOs. It is calculated as ((first-day price-offering price)/offering price)*100. Underpricing is the case when the first-day trading price is greater than the offering price. Overpricing is the case when the first-day trading price is lower than the offering price. Gross proceeds are total value of IPOs in million Baht.

Year	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	Total Average
No. of IPOs	8	15	25	32	55	32	38	35	20	28	4	292
Average of Initial returns	55.21	31.83	118.94	84.27	44.28	43.58	47.32	31.85	14.28	3.19	-15.54	46.73
Median of initial returns	36.60	42.40	96.92	54.21	40.00	32.97	41.15	17.93	3.78	0.0	-21.51	32.97
NO. of underpricing	6	12	25	26	41	32	36	29	14	16	1	238
Average underpring	89.37	48.51	118.94	108.15	65.48	43.58	50.22	40.29	26.80	17.53	43.33	61.59
Median underpricing	51.90	50.71	96.92	72.89	64.28	32.97	42.50	34.00	6.38	8.71	-	12.15
Min. underpricing%	23.08	9.09	0.00	3.75	0.00	5.00	0.00	1.52	0.00	0.00	43.33	0.00
Max. underpricing %	282	84.71	295.00	300.00	150.00	134.62	128.40	169.57	172.73	97.18	43.33	300.00

Table 3-continued

Year	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	Total Average
NO. of overpricing	2	3	-	6	14	-	2	6	6	12	3	54
Average overpricing	-47.27	-34.90	-	-19.23	-17.77	-	-4.96	-8.96	-14.94	-15.93	-35.17	-18.77
Median overpricing	-47.27	-12.50	-	-23.09	-12.80	-	-4.96	-7.25	-11.25	-16.52	-33.33	-12.62
Min. overpricing %	-87.00	-86.67	-	-26.67	-38.79	-	-9.33	-20.21	-32.73	-33.33	-62.50	-87.00
Max. overpricing %	-7.54	-5.56	-	-3.33	-1.25	-	-.59	-3.13	-3.39	-1.67	-9.68	-.59
Average Gross proceed (million Baht)	305.9	146.26	206.32	95.62	57.86	122.09	120.40	114.89	263.12	114.86	68.67	195.35

Table 4

Initial Return Categorized by Industry Sector

The Table shows the results of initial returns of IPOs during 1987 to 1997 categorized by industrial sectors. Initial returns are computed as ((first day trading price-offering price)/offering price). N is the number of firms in each sector.

Industry	n	mean	median	max	min
Agribusiness	18	42.77	29.25	145.59	-7.27
Banking	3	10.72	9.09	23.08	.00
Building & Furnishing	20	40.68	27.08	145.93	-31.25
Chemical &Plastic	10	8.66	6.82	74.12	-38.10
Commerce	5	61.61	44.00	159.43	-9.68
Communication	8	55.72	40.76	169.57	-7.25
Electrical product & computer	5	59.39	40.23	193.06	-12.50
Electrical components	2	99.62	99.62	190.77	8.47
Energy	7	110.93	69.23	295.24	6.74
Entertainment & Recreation	4	52.96	43.70	97.18	27.27
Finance & Securities	30	38.89	30.03	262.76	-86.67
Foods & Beverages	16	38.63	41.73	92.73	-15.90
Health Cares Services	11	34.67	9.09	295.00	-36.00
Hotels & Travel Services	8	90.74	45.87	300.00	-23.95
Household Goods	8	27.69	24.14	98.61	-9.74
Insurance	14	36.01	21.15	143.48	-12.20
Investment companies	27	55.36	39.28	277.14	-87.00
Jewelry & Ornaments	3	23.47	17.19	66.71	-12.50
Machinery & equipment	4	31.34	38.93	49.63	-2.13
Packaging	11	66.50	34.00	179.45	-3.33
Pharmaceutical Products	1	-22.85	-22.85	-22.86	-22.86
Printing & publishing	9	69.80	42.86	261.11	-24.56
Professional Services	1	90.52	90.52	90.53	90.53
Property Developments	35	44.37	40.67	233.33	-62.50
Pulp & paper	4	82.63	24.26	282.00	.00
Textile, clothing & Footwear's	7	30.00	36.36	74.29	-20.00
Transportation	7	15.83	4.88	112.94	-12.50
Vehicles Parts	6	41.24	13.66	120.00	-3.37
Warehouse & Silo	2	75.77	75.77	81.54	70.00
Others	6	60.76	50.89	134.62	-9.09
Total	292	46.73	32.97	300.00	-87.00

Table 5

Fraction of Shares Allocated to Investor Groups in the Primary Market

Data of fraction of shares allocated to each type of investor are obtained from selling report (Form 81-1). In this form, the investors are classified into 4 groups. Local individuals are the Thai individual investors , Local institutions are Thai-company investors who bought the IPOs in the primary market. Foreign individuals and Foreign institutions are summed together and called as Foreign investors. Panel A is the descriptive data from the whole period or from 1993 to 1997 which cover the total of 111 observations. Panel B is the sub-period sample which is the period before the SEC announce the rules promoting the fairness on allocation the new stocks or it is the IPOs during Feb 1993 to July 1997. Panel C is the sub-period sample after the SEC announce the rule promoting fairness on allocation the new issue stocks or from August 1994 to July 1997. N is number of observatios

Panel A: Whole period, 1993-1997 (N=111 issues)

Statistics	Local individual	Local institution	Foreign investors	Initial Returns (%)
Average (%)	0.6359	0.2190	.1053	16.57
Maximum(%)	1.00	0.82	.60	172.73
Minimum (%)	0.00	0.00	.00	-63.46
Std. Deviation	0.2520	0.1687	.1319	39.97

Panel B:pre-enforcement period, Feb1993-July 1994 (N=21 issues)

Statistics	Local individual	Local institution	Foreign investors	Initial Returns (%)
Average (%)	0.6269	0.2343	0.1137	49.62
Maximum(%)	1.00	0.82	0.60	169.57
Minimum (%)	0.08	0.00	0.00	-63.46
Std. Deviation	0.2924	0.2252	0.1518	55.49

Panel C. post-enforcement period, Aug 1994-July 1997 (N=90 issues)

Statistics	Local individual	Local institution	Foreign investors	Initial Returns (%)
Average (%)	0.6379	0.2155	0.1031	8.69
Maximum(%)	0.97	0.66	0.51	172.63
Minimum (%)	0.00	0.00	0.00	-61.88
Std. Deviation	0.2434	0.1540	0.1277	30.81

Table 6

**Fraction of Shares Allocated to each Investor Group in the Primary Market
Categorized by Size and Age of Firms**

This table shows the percentage of shares allocated to each type of investor in the
primary market and categorized by size (gross proceeds) and age of issuing firms. The
sample is the new issues during 1993-1997 which in total, cover 109 issues. Panel A
reports the percentage of investors' holdings categorized by size of offerings. GP is
the gross proceeds, which is the total value of new stocks in terms of millions of Baht.
GP are categorized into three levels using the 33.33 and 66.67 percentile as cut-off
points respectively. Panel B. exhibits the percentage of investors' holdings
categorized by age of firms which is the number of years since establishment. AGE is
also categorized using the 33.33 and 66.67 percentile. N is number of observations in
each level.

Panel A: categorized by size				
Size	N	Local individual	Local institution	Foreign investors
$0 \leq GP < 25$	36	0.7389	0.2015	0.0594
$25 \leq GP < 76$	38	0.6571	0.1929	0.099626
$76 \leq GP$	37	0.5138	0.2629	0.1999

Panel B: categorized by age				
Age	N	Local individual	Local institution	Foreign investors
$0 \leq AGE < 8.4438$	32	0.5697	0.2431	0.1559
$8.4438 \leq AGE < 16.7954$	33	0.6283	0.2232	0.1181
$16.7954 \leq AGE$	32	0.6809	0.2112	0.0809

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Table 7

Initial Returns and Fraction of Shares Allocated to Each Group of Investor

This table provides the descriptive statistics of IPOs and fraction of shares allocated to each of the three investor groups by classifying them into underpricing and overpricing cases. Panel A is the underpriced offering which means that the first-trading day prices of stocks are greater than or equal to their offer prices. Panel B is the overpriced cases. N represents the number or firms in the test. Total sample is 109 IPOs completed between 1993-1997.

statistics	Panel A: Underpriced offerings (N=76)				
	Local Institution	Local Individual	Foreign Investors	Age of firm	Gross proceeds
Mean	0.21	0.65	0.11	23.95	151.72
Median	0.15	0.71	0.06	15.24	49.62
Max	0.82	1.00	0.51	90.86	2223.00
Min	0.00	0.00	0.00	1.92	8.00
Standard deviation	0.17	0.25	0.12	25.98	315.95

statistics	Panel B: Overpriced offerings (N=33)				
	Local Institution	Local Individual	Foreign Investors	Age of firm	Gross proceeds
Mean	0.24	0.59	0.14	20.04	152.37
Median	0.21	0.65	0.05	9.00	52.00
Max	0.66	0.97	0.60	91.19	1950.00
Min	0.00	0.00	0.00	2.49	8.00
Standard deviation	0.17	0.26	0.16	27.49	353.90

Table 8

Correlation Coefficients between Initial Market Adjusted Returns and Investors Allocated in the Primary Market

The table shows Pearson correlation between initial returns and shares allocated to each group of investor in the primary market. Sample is 109 IPOs during 1993-1997. ADJRET is initial market adjusted returns of IPOs which the initial returns are computed as ((first day trading price-offering price)/offering price). The LOIND represents shares held by local individual investors. LOINST is percentage of shares acquired by local institutional investors. FRGINST is the percentage of shares allocated to foreign investors (foreign institutions and foreign individual investors). AGE is the number of years from establishment of firm to issuing date and SIZE is the gross proceeds of IPOs which equal to the offering price time number of shares issued.

variables	ADJRET	LOINST	LOINDL	FRGINST	AGE	SIZE
LOINST	.194	1.00				
	.062					
LOINDL	-.224*	-.623**	1.00			
	.031	.000				
FRGINST	.243*	.226*	-.552**	1.00		
	.019	.028	.000			
AGE	-.064	-.011	.065	-.201	1.00	
	.545	.913	.533	.052		
SIZE	-.001	.143	-.334**	.418**	-.181	1.00
	.993	.170	.001	.000	.080	

**correlation is significant at the 0.01 level
* correlation is significant at the 0.05 level

Table 9

Cross-Tabulation between Initial Returns of IPOs and Percentage of Shares Allocated to Investors in the Primary Market

This table exhibits the mean initial returns of IPOs by varying level of holding the new issue stocks by each investor group in the primary market. Panel A reports the mean of initial returns across level of shares held by local institutional investors (LOINST). Panel B shows the initial returns of local individual investors (LOINDL) and Panel C is the mean initial returns across level of shares held by foreign investors. Investors' holdings are the percentage of shares held by each group of investors and categorized into 3 levels using the 33.33 and 66.67 percentile respectively. 'Small" are the cases when percentage of investor holdings less than 33.33 percentile. "Medium" are cases when percentage of investor holdings are between the 33.33 percentile and 66.67 percentile. "Large" are cases when percentage of investors holdings are greater than the 66.67 percentile. N is the number of observations from each level.

Panel A: Local institutional investors

Investor holding (%)	N.	Initial returns (%)			Std. Deviation
		Mean	Minimum	Maximum	
Small (LOINST <.1340)	31	8.76	-100	97.18	32.43
Medium (.1340<=LOINST <.2481)	32	13.93	-32.27	172.73	36.71
Large (LOINST >=.2481)	31	63.19	-61.88	1518.18	274.43

Panel B: Local Individuals

Investor holding (%)	N.	Initial returns (%)			Std. Deviation
		Mean	Minimum	Maximum	
Small (LOINDL <.5521)	31	65.39	-61.88	-1518.18	275.56
Medium (.5521<=LOINDL <.7993)	32	10.13	-100.00	97.18	34.14
Large (LOINDL >=.7993)	31	10.46	-24.12	69.23	19.77

Table 9- continued

Panel C: Foreign Investors

Investor holding (%)	N.	Initial returns (%)			
		Mean	Minimum	Maximum	Std. Deviation
Small (FRGINST <.0302)	31	.75	-61.88	31.43	17.97
Medium (.0302<=FRGINST <.1201)	32	21.79	-38.13	169.57	44.53
Large (FRGINST>=.1201)	31	63.08	-100.00	1518.18	274.18

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Table 10

Regression Results of Initial Returns based on Each Group of Investors

Ordinary Least Square (OLS) is used to test the relationship between initial returns and percentage of shares allocated to each group of investors in the primary market. Sample is 95 IPOs during 1993-1997. Dedependent variable is the initial returns. $LOINST_i$ is the percentages of shares allocated to local institutions. $LOINDL_i$ is the percentage of shares allocated to local individual investors. $FRGINST_i$ is foreign investors. AGE_i is the natural log of years since that IPOs had established. $SIZE_i$ is the gross proceeds of the issues in million Baht. $INDRET_i$ represent the return on industry index which is in the same industry of the IPOs and is measured at the offering date of IPO. HOT_i is dummy variable which equal to 1 if IPOs enter the market during 1993 and 1994 and equal 0 otherwise. Number in parenthesis is the p-value. The equations used to estimated are as follow:

Panel A

$$INITIAL_i = \alpha_0 + \alpha_1 LOINST_i + \alpha_2 LOINDL_i + \alpha_3 AGE_i + \alpha_4 SIZE_i + \alpha_5 INDRET_i + \alpha_6 HOT_i + \varepsilon_i$$

value	Intercept	LOINST	LOINDL	AGE	SIZE	INDRET	HOT	R^2	F-stat
α	213.71**	97.22	-100.62	-135.05***	-.015**	-8.22	23.20	23.3	3.69***
	(.011)	(.393)	(.219)	(.001)	(.036)	(.494)	(.506)		(.002)
Std. error	81.75	113.15	81.18	40.89	.001	11.97	34.72		
t-stat	2.614	.859	-1.239	-3.303	-2.136	-.687	.668		

Table 10 - continued

Panel B

$$INITIAL_i = \alpha_0 + \alpha_1 LOINST_i + \alpha_2 FRGINST_i + \alpha_3 AGE_i + \alpha_4 SIZE_i + \alpha_5 INDRET_i + \alpha_6 HOT_i + \varepsilon_i$$

value	intercept	LOINST	FRGINST	AGE	SIZE	INDRET	HOT	R^2	F-stat
α	93.12	156.35*	266.77**	-123.54***	-.001**	-9.04	25.47	25.5	4.16***
	(.135)	(.087)	(.045)	(.003)	(.014)	(.449)	(.454)		(.001)
Std. error	61.76	90.29	131.34	40.93	.001	11.84	33.82		
t-stat	1.508	1.731	2.031	-3.018	-2.514	-.760	.753		

Panel C

$$INITIAL_i = \alpha_0 + \alpha_1 LOINDL_i + \alpha_2 FRGINST_i + \alpha_3 AGE_i + \alpha_4 SIZE_i + \alpha_5 INDRET_i + \alpha_6 HOT_i + \varepsilon_i$$

value	intercept	LOINDL	FRGINST	AGE	SIZE	INDRET	HOT	R^2	F-stat
α	194.29**	-96.39	211.21	-123.73***	-.001**	-9.4	30.19	24.5	3.94***
	(.012)	(.184)	(.152)	(.004)	(.016)	(.433)	(.384)		(.001)
Std. error	75.83	71.99	145.94	41.26	.001	11.93	34.48		
t-stat	2.562	-1.339	1.447	-2.999	-2.47	-.788	.876		

* significant at 10 % level
** significant at 5% level
*** significant at 1% level

Figure 1

**Distribution of Initial Public Offerings in the Thai Stock Market
from 1975 to 1997**

The figure shows the number of IPOs since the stock market of Thailand has established (1975). Data on the number of IPOs are from the ISIM database. In total, 522 IPOs are reported in the database.
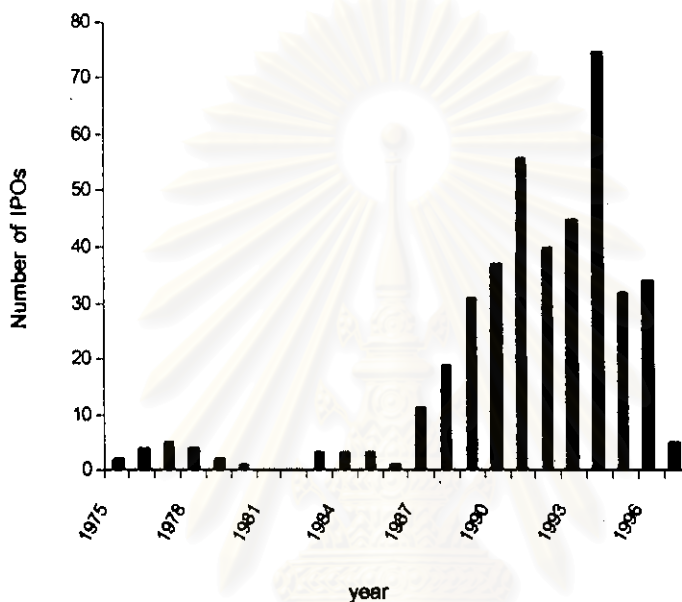
Figure 2

Distribution of IPOs from 1987 to 1997 categorized by industrial sector

The figure illustrates the distribution of IPOs from 1987 to 1997 categorized by industrial sector. In total, there are 292 IPOs in the sample. Data of IPOs are obtained from the I-SIM database.
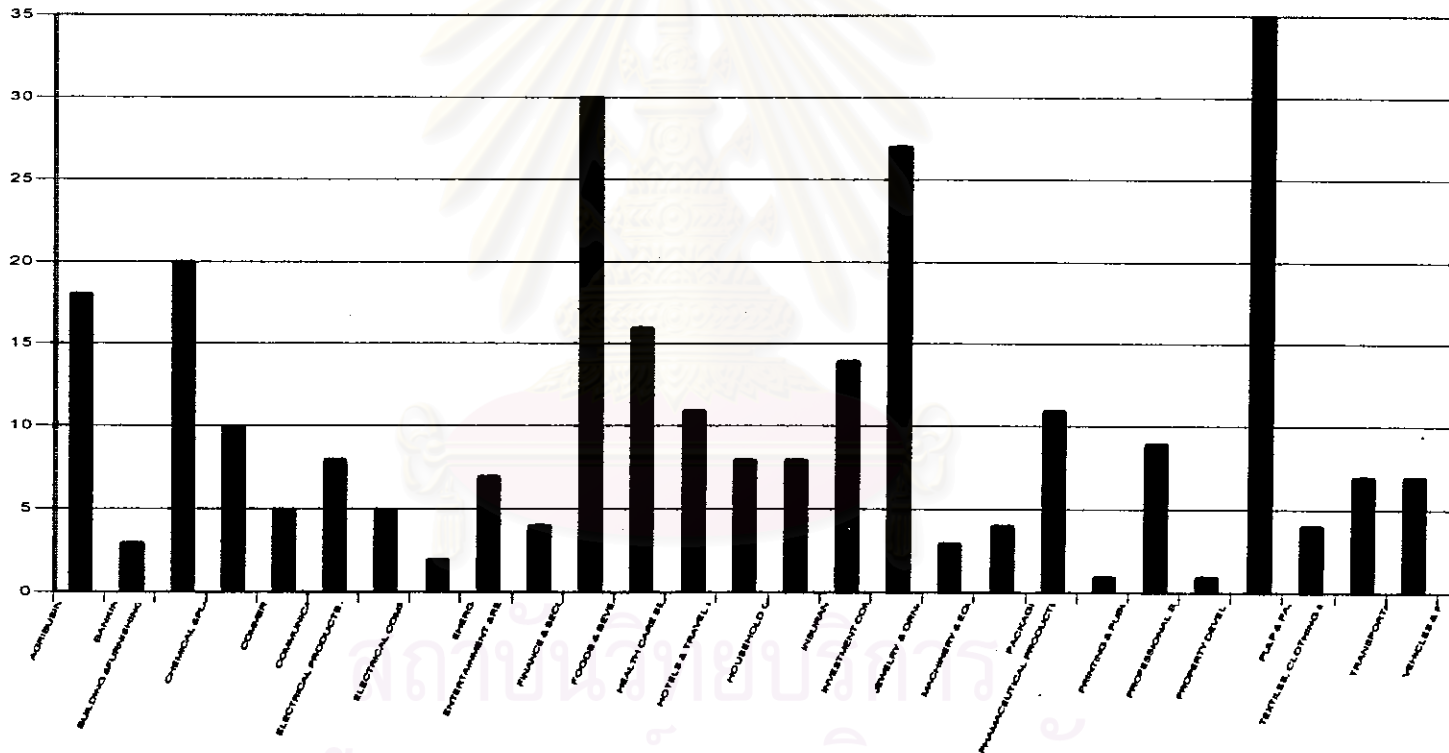
Table 11

Abnormal Returns for Initial Public Offerings in 1988-1993: Matching Firm Benchmark

Average matching firm-adjusted returns (AR_t) and cumulative average returns ($CAR_{i,t}$) , in percent.The benchmark used is the matching firm which is the listed firms in the stock market and being in the same industry sector of IPOs. $AR_t = \frac{1}{n}\sum_{i=1}^{n_t}(r_{ipo,it} - r_{match,it})$ where $r_{ipo,t}$ is the total return on initial public offering firm i in event month t, and $r_{match,it}$ is the total return on the corresponding matching firm. The t-statistic for the AR is computed for each month as $AR_t \cdot \sqrt{n_t/sd_t}$ where AR_t is the average matching firm-adjusted return for month t, n_t is the number of observations in month t, and sd_t is the cross-sectional standard deviation of the adjusted return for month t. The t-statistic for CAR is computed as $CAR_{1,t} \cdot \sqrt{n_t/csd_t}$, where $csd_t = [t*var + 2*(t-1)*cov]^{1/2}$, where t is the event month, var is the average cross-sectional variance, and cov is the first-order autocovariance of the AR_t series.

| Event month	N	AR_t(%)	t-stat	CAR_t(%)	t-stat
1	217	-1.25	-0.74	-1.25	-9.49
2	213	1.32	1.02	0.07	0.42
3	208	2.57	2.29	2.64	13.57
4	212	-1.49	-1.23	1.15	5.31
5	214	-0.88	-0.64	0.27	1.16
6	214	-0.16	-0.16	0.11	0.44
7	203	-1.07	-0.91	-0.96	-3.40
8	195	1.18	0.77	0.23	0.74
9	195	0.87	0.62	1.09	3.40
10	190	3.34	2.53	4.44	12.97
11	184	-3.38	-2.15	1.06	2.92
12	171	1.19	0.76	2.25	5.72
13	184	-1.88	-1.47	0.37	0.94
14	186	1.12	0.87	1.49	3.69
15	175	-1.13	-0.77	0.37	0.85
16	173	-0.57	-0.39	-0.20	-0.45
17	172	-2.44	-1.37	-2.64	-5.72
18	156	-1.25	-0.85	-3.89	-7.82
19	151	1.86	1.13	-2.03	-3.92
20	148	0.57	0.49	-1.46	-2.72
21	138	-2.95	-2.05	-4.41	-7.74
22	149	0.92	0.61	-3.49	-6.23
23	134	-2.38	-1.58	-5.87	-9.72
24	131	2.70	1.59	-3.17	-5.08
25	133	-0.69	-0.42	-3.86	-6.11
26	146	1.35	1.05	-2.51	-4.09
27	145	2.15	1.30	-0.36	-0.58
28	136	-1.65	-0.88	-2.01	-3.05
29	132	1.11	0.68	-0.90	-1.32
30	129	2.83	1.41	1.94	2.76
31	124	-0.50	-0.32	1.43	1.97
32	123	-1.20	-0.54	0.23	0.31
33	122	3.35	1.75	3.58	4.75
34	123	-0.43	-0.29	3.16	4.14
35	117	3.89	2.58	7.05	8.89
36	112	2.62	1.57	9.66	11.76

Table 12

Abnormal Returns for Initial Public Offerings in 1988-1993:
SET Index Benchmark

The SET-adjusted returns (AR_t) and cumulative average returns $(CAR_{i,t})$, in percent. $AR_t = \frac{1}{n}\sum_{i=1}^{nt}\left(r_{ipo,\,it} - r_{match,\,it}\right)$ where $r_{ipo,t}$ is the total return on initial public offering firm i in event month t, and $r_{match,\,it}$ is the total return on the corresponding SET index. The t-statistic for the AR is computed for each month as $AR_t \cdot \sqrt{n_t/sd_t}$ where AR_t is the average matching firm-adjusted return for month t, n_t is the number of observations in month t, and sd_t is the cross-sectional standard deviation of the adjusted return for month t. The t-statistic for CAR is computed as $CAR_{1,t} \cdot \sqrt{n_t/csd_t}$, where $csd_t = [t*var + 2*(t-1)*cov]^{1/2}$, where t is the event month, var is the average cross-sectional variance, and cov is the first-order autocovariance of the AR_t series.

Event month	N	AR(%)	t-stat	CAR(%)	t-stat
1	260	-2.62	-2.03	-2.62	-34.69
2	258	-0.44	-0.46	-3.05	-27.09
3	253	1.48	1.71	-1.57	-11.11
4	249	0.38	0.49	-1.20	-7.20
5	251	-2.16	-2.64	-3.36	-18.07
6	248	-0.68	-0.82	-4.04	-19.65
7	239	-0.81	-0.86	-4.85	-21.39
8	239	-2.07	-2.18	-6.92	-28.52
9	231	-1.00	-0.98	-7.92	-30.21
10	230	-0.13	-0.14	-8.05	-29.04
11	226	-2.47	-2.15	-10.52	-35.86
12	215	-0.01	-0.01	-10.53	-33.48
13	219	-0.35	-0.35	-10.88	-33.54
14	222	-0.67	-0.69	-11.55	-34.53
15	215	-1.64	-1.67	-13.19	-37.47
16	215	-1.57	-1.49	-14.76	-40.60
17	211	-2.10	-1.82	-16.87	-44.56
18	201	-1.83	-1.59	-18.69	-46.83
19	191	-2.32	-1.90	-21.01	-49.93
20	185	-0.21	-0.21	-21.22	-48.35
21	178	-4.87	-5.15	-26.08	-56.89
22	183	-2.37	-2.41	-28.46	-61.47
23	175	-2.05	-1.93	-30.51	-63.02
24	169	-1.49	-1.25	-32.00	-63.57
25	166	-1.60	-1.05	-33.59	-64.80
26	175	-1.54	-1.29	-35.13	-68.21
27	179	-1.70	-1.32	-36.83	-70.96
28	171	-3.02	-2.02	-39.84	-73.68
29	164	-0.34	-0.29	-40.18	-71.49
30	156	-0.74	-0.51	-40.92	-69.81
31	153	-3.29	-2.57	-44.21	-73.47
32	151	-1.45	-1.03	-45.66	-74.18
33	151	-1.44	-0.95	-47.09	-75.34
34	146	-2.24	-1.92	-49.33	-76.45
35	142	-2.67	-2.42	-52.01	-78.33
36	139	-3.29	-2.98	-55.30	-81.25

Table 13

Abnormal Returns for Initial Public Offerings in 1988-1993:
Industry Index Benchmark

Average matching firm-adjusted returns (AR_t) and cumulative average returns ($CAR_{i,t}$), in percent,

$$AR_t = \frac{1}{n} \sum_{i=1}^{nt} (r_{ipo,it} - r_{match,it})$$ where $r_{ipo,t}$ is the total return on initial public offering firm i in

event month t, and $r_{match,it}$ is the total return on the corresponding industry index. The t-statistic for the

AR is computed for each month as $AR_t \cdot \sqrt{n_t/sd_t}$ where AR_t is the average matching firm-adjusted

return for month t, n_t is the number of observations in month t, and sd_t is the cross-sectional standard

deviation of the adjusted return for month t. The t-statistic for CAR is computed as

$CAR_{1,t} \cdot \sqrt{n_t/csd_t}$, where $csd_t = [t*var + 2*(t-1)*cov]^{1/2}$, where t is the event month, var is the

average cross-sectional variance, and cov is the first-order autocovariance of the AR_t series.

Event month	N	AR(%)	t-stat	CAR(%)	t-stat
1	254	-0.53	-0.42	-0.53	-0.64
2	252	0.48	0.49	-0.05	-0.04
3	251	1.35	1.43	1.30	0.90
4	246	0.66	0.73	1.96	1.17
5	246	-1.09	-1.16	0.87	0.47
6	248	0.08	0.10	0.95	0.47
7	244	-0.88	-0.88	0.08	0.03
8	239	-0.48	-0.47	-0.41	-0.17
9	239	0.30	0.32	-0.11	-0.04
10	234	0.65	0.67	0.54	0.20
11	235	-2.53	-1.88	-1.99	-0.69
12	228	-0.89	-0.78	-2.88	-0.92
13	223	-0.69	-0.69	-3.57	-1.12
14	232	-2.49	-2.41	-6.07	-1.85
15	221	-2.18	-2.16	-8.25	-2.37
16	221	-0.66	-0.58	-8.90	-2.46
17	218	-1.25	-1.11	-10.15	-2.70
18	213	-1.13	-0.95	-11.28	-2.86
19	205	-0.59	-0.45	-11.87	-2.83
20	198	0.43	0.46	-11.44	-2.64
21	190	-4.13	-4.16	-15.57	-3.42
22	189	-1.71	-1.64	-17.28	-3.74
23	186	-1.79	-1.71	-19.08	-3.97
24	185	0.15	0.13	-18.93	-3.78
25	177	-0.72	-0.45	-19.65	-3.82
26	184	0.26	0.20	-19.38	-3.81
27	186	1.10	0.85	-18.28	-3.57
28	187	-2.83	-2.02	-21.11	-3.97
29	171	-0.13	-0.10	-21.23	-3.83
30	177	-0.24	-0.14	-21.47	-3.76
31	168	-0.85	-0.64	-22.32	-3.83
32	163	-0.80	-0.52	-23.12	-3.87
33	170	-0.92	-0.53	-24.05	-3.94
34	157	-75.49	-2.55	-99.54	-15.58
35	157	-1.75	-1.10	-101.29	-15.62
36	146	-1.15	-0.78	-102.44	-15.40

Table14

Abnormal Returns for Initial Public Offerings in 1988-1993:
Size-Match Portfolio Benchmark

Average matching firm-adjusted returns (AR$_t$) and cumulative average returns (CAR$_{i,t}$) , in percent, The benchmark used is the size-match portfolio with the same event month.

$$AR_t = \frac{1}{n}\sum_{i=1}^{n!}(r_{ipo,it} - r_{m,it})$$ where r$_{ipo,t}$ is the total return on initial public offering firm I in event month t, and r$_{m,it}$ is the total return on the corresponding SET index. Column A is the equally weight size-match portfolio (Index 1) and column B is the value weight size-match portfolio (Index 2).

Event month	N	A.Index 1				B.Index 2			
		AR(%)	t-stat	CAR (%)	t-stat	AR(%)	t-stat	CAR (%)	t-stat
1	292	-9.16	-3.85	-9.16	-46.97	-6.59	-2.97	-6.59	-38.53
2	288	-2.59	-1.38	-11.74	-43.52	-3.30	-1.63	-9.90	-40.22
3	285	-1.88	-0.87	-13.63	-41.42	-5.06	-2.05	-14.95	-49.20
4	283	-5.56	-2.42	-19.19	-50.60	-2.53	-1.14	-17.48	-49.56
5	287	-8.21	-3.70	-27.40	-65.27	-10.12	-3.78	-27.60	-70.41
6	282	-6.63	-3.21	-34.03	-73.50	-9.21	-3.56	-36.82	-84.92
7	279	-7.78	-3.38	-41.81	-83.28	-7.68	-3.03	-44.49	-94.46
8	280	-3.96	-1.90	-45.77	-85.53	-6.98	-2.68	-51.47	-102.37
9	276	-8.42	-2.91	-54.19	-94.86	-8.52	-2.26	-59.99	-111.65
10	273	-3.37	-1.33	-57.56	-95.14	-7.82	-1.72	-67.81	-119.04
11	270	-8.07	-3.17	-65.63	-102.91	-5.57	-2.22	-73.38	-122.13
12	267	-6.00	-1.94	-71.63	-106.99	-9.88	-2.07	-83.25	-131.91
13	272	-3.11	-1.33	-74.73	-108.29	-6.48	-2.35	-89.73	-137.85
14	271	-16.21	-4.33	-90.94	-126.79	-14.45	-2.91	-104.18	-153.93
15	262	-4.27	-1.66	-95.21	-126.13	-4.57	-1.65	-108.76	-152.62
16	260	-8.45	-2.43	-103.66	-132.49	-7.05	-2.19	-115.81	-156.75
17	257	-7.66	-2.78	-111.32	-137.26	-9.36	-3.03	-125.17	-163.40
18	249	-13.48	-3.51	-124.80	-147.23	-11.64	-3.10	-136.81	-170.82
19	240	-12.46	-3.72	-137.25	-154.76	-11.60	-3.91	-148.41	-177.07
20	237	-5.76	-2.43	-143.02	-156.22	-6.27	-2.49	-154.69	-178.74
21	236	-12.65	-4.23	-155.66	-165.61	-11.72	-3.72	-166.40	-187.24
22	236	-6.23	-2.13	-161.89	-168.30	-6.77	-2.07	-173.18	-190.38
23	231	-7.22	-2.06	-169.11	-170.13	-2.13	-0.87	-175.31	-186.47
24	225	-6.57	-2.08	-175.68	-170.77	-8.77	-2.38	-184.08	-189.16
25	229	-10.03	-2.99	-185.72	-178.46	-7.57	-2.75	-191.64	-194.66
26	237	-8.91	-2.62	-194.63	-186.59	-11.54	-2.89	-203.18	-205.87
27	239	-6.88	-2.36	-201.51	-190.39	-9.07	-2.39	-212.25	-211.92
28	237	-9.73	-2.30	-211.25	-195.19	-5.90	-2.32	-218.15	-212.99
29	228	-7.58	-2.21	-218.82	-194.88	-6.58	-2.40	-224.73	-211.46
30	225	-8.96	-2.53	-227.78	-198.14	-6.71	-1.94	-231.43	-212.69
31	223	-4.85	-1.82	-232.63	-198.20	-3.08	-1.22	-234.51	-211.06
32	224	-7.46	-2.12	-240.09	-201.80	-5.99	-1.82	-240.50	-213.52
33	220	-14.04	-3.40	-254.13	-208.46	-13.30	-3.68	-253.80	-219.89
34	217	-9.35	-2.46	-263.48	-211.48	-8.42	-2.24	-262.21	-222.28
35	209	-12.89	-3.39	-276.37	-214.58	-8.75	-2.57	-270.96	-222.17
36	202	-8.46	-2.37	-284.83	-214.38	-10.01	-3.08	-280.97	-223.31

Table 15

Post-listing Cumulative Abnormal Returns by Year of Offerings

This table reports post-listing cumulative abnormal returns for IPOs during 1988 to 1996 and categorized by year of offerings. N is the number of samples for each year and CARs are the cumulative SET index adjusted returns. The t statistics are in parenthesis. "12 months" is the one-year cumulative adjusted returns. "24 months" is the 2-year CARs and "36 months is the three year cumulative adjusted returns.

Cohort Year	12 months		24 months		36 months	
	N	CARs	N	CARs	N	CARs
1988	2	18.31 (0.83)	1	-4.84 (-0.11)	3	-21.66 (-0.69)
1989	14	-29.49 (-6.24)	12	-37.05 (-5.10)	15	-45.80 (-5.74)
1990	24	-32.96 (-12.76)	21	-42.23 (-10.85)	22	-60.32 (-10.82)
1991	38	-3.03 (-1.93)	36	-27.09 (-12.02)	37	-54.75 (-19.87)
1992	27	-4.19 (-1.77)	27	-34.87 (-10.38)	20	-63.25 (-13.21)
1993	35	-12.38 (-8.62)	32	-44.46 (-2092)	32	-80.99 (-31.11)
1994	29	-20.51 (-14.91)	25	-43.08 (-20.84)	10	-59.57 (-14.95)
1995	18	1.32 (0.33)	8	20.51 (2.39)		
1996	28	4.61 (1.27)				

Table 16

Post-Listing Cumulative Abnormal Returns Categorized by Industry Sectors

The Table shows the results of aftermarket performance of IPOs (CARs) using SET index as benchmark. Sample is IPOs during 1987-1996. N is the number of observations.

Sector code	Sector	N	12 months CARs	24 months CARs	36 months CARs
1	Agribusiness	18	-41.44 (-11.75)	-69.85 (-11.41)	-82.48 (-9.83)
2	Banking	1	-6.88 (-0.16)	-20.83 (-0.36)	2.92 (0.04)
3	Building&Furnishing material	21	-22.67 (-8.36)	-62.01 (-13.62)	-65.90 (-12.31)
4	Chemicals & Plastics	10	-17.32 (-2.66)	-45.09 (-5.00)	-44.93 (-3.09)
5	Commerce	4	-15.28 (-0.87)	-5.82 (-0.28)	-10.59 (-0.42)
6	Communication	8	-22.20 (-3.29)	-48.59 (-4.78)	-60.84 (-4.48)
7	Electrical Products & Computer	6	-43.15 (-2.21)	-75.96 (-2.24)	-58.79 (-0.99)
8	Electronic Components	6	-3.27 (-0.13)	-59.46 (-1.39)	-40.53 (-0.54)
9	Energy	3	36.16 (2.11)	42.75 (1.75)	82.83 (1.38)
10	Entertainment & Recreation	5	53.72 (2.35)	-16.58 (0.36)	-88.79 (-1.11)
11	Finance and Securities	27	10.56 (3.43)	-8.10 (-1.77)	-31.46 (-4.82)
12	Foods & Beverages	16	-5.38 (-0.69)	-21.52 (-1.84)	-45.97 (-2.99)
13	Health Care Services	9	-11.43 (-1.46)	-22.19 (-2.18)	-54.21 (-3.08)
14	Hotels & Travel Services	6	-45.39 (-6.69)	-56.47 (-5.37)	-92.51 (-6.42)
15	Household Goods	4	-71.76 (-1.86)	-140.80 (-3.64)	-146.46 (-3.09)
16	Insurance	14	7.83 (1.49)	-21.89 (-2.16)	-19.57 (-1.57)
17	Investment Companies	24	-35.41 (-14.46)	-56.42 (-16.04)	-100.16 (-23.93)
19	Machinery & Equipment	2	-52.01 (-2.14)	-93.61 -	-74.15 -
21	Packing	6	20.06 (1.01)	-8.08 (-0.18)	-128.00 (-2.84)

Table 16 - continued

Sector code	Sector	N	12 months CARs	24 months CARs	36 months CARs
23	Printing & Publishing	8	32.02 (2.35)	0.74 (0.03)	-56.22 (-2.19)
25	Property Development	34	-7.67 (-2.90)	-33.65 (-7.66)	-63.95 (-11.87)
26	Pulp & Paper	3	-5.83 (-0.31)	25.95 (0.98)	17.99 (0.55)
27	Textiles, Clothing & Footware	5	-16.75 (-1.77)	-80.65 (-6.14)	-105.74 (-7.62)
28	Transportation	6	-29.75 (-2.92)	-49.83 (-2.43)	-113.03 (-3.68)
29	Vehicles & Parts	6	-48.95 (-3.2)	-11.71 (-0.50)	-60.44 (-1.47)
30	Warehouse & Silo	1	-4.24 (-0.07)	-18.45 -	-110.06 -
31	Others	3	-57.08 (-2.55)	-65.39 (-1.68)	-35.31 (-0.74)

Table 17

Post-listing Cumulative Abnormal Returns Categorized by Issue Size and Initial Returns

The table provides the aftermarket performance of IPOs during 1987-1996. The aftermarket performance is computed using the cumulative market-adjusted (SET index) returns (CARs). The 12-month CARs are the one-year performance subsequent to issue. The 24-month CARs are the two-year performance following the issue and the 36-month CARs are the three-year performance. Panel A reports the post- listing performance categorized by gross proceed (GP) of the issue. GP is the total value of the issues in term of Baht. Panel B shows the performance categorized by initial market adjusted returns (IR). IR is measured by subtracting the initial returns of IPOs with SET index on the corresponding date. Both GP and IR are categorized into 5 groups using the 20, 40, 60 and 80 percentile respectively.

Panel A. categorized by size of offerings

Size (Gross Proceed:GP)	N	12 month CARs	24 month CARs	36 month CARs
$6000000 \leq GP < 16741700$	30	-16.81 (-12.91)	-34.33 (-16.13)	-52.97 (-17.92)
$16741700 \leq GP < 30000000$	40	-15.89 (-13.55)	-48.82 (-26.25)	-81.45 (-34.72)
$30000000 \leq GP < 50000000$	43	-7.75 (-4.97)	-27.24 (-10.98)	-48.38 (-15.45)
$50000000 \leq GP < 121000000$	44	-10.28 (-10.85)	-33.34 (-21.01)	-60.29 (-29.01)
$121000000 \leq GP < 3479000000$	47	-4.76 (-2.93)	-20.38 (-8.15)	-43.70 (-12.54)

Panel B. Categorized by initial adjusted returns

Initia Market djusted Returns (IR)	N	12 month CARs	24 month CARs	36 month CARs
$-62.05 \leq IR < 0.3076$	50	-14.96 (-7.91)	-34.52 (-10.75)	-69.39 (-12.91)
$0.3076 \leq IR < 15.6975$	52	11.19 (5.09)	-8.82 (-1.97)	-28.76 (-4.79)
$15.6975 \leq IR < 40.8401$	50	-10.81 (-6.37)	-43.56 (-16.75)	-62.63 (-17.86)
$40.8401 \leq IR < 81.9107$	52	-12.48 (-11.83)	-34.16 (-21.76)	-60.17 (-23.73)
$81.9107 \leq IR < 300$	50	-28.05 (-26.23)	-42.08 (-26.78)	-65.79 (-35.56)

Table 18

Post-Initial Public Offering (IPO) Returns and Wealth Relatives

Post-initial equally weight returns of IPOs are compared with match-firm size benchmark and SET index benchmark. For each IPO, Wealth Relatives are calculated as $\sum(1 + R_{i,T})/\sum(1 + R_{bench,T})$, where $R_{i,T}$ is the buy and hold return on IPO i for period T and $R_{bench,T}$ is the buy and hold return on the benchmark portfolio over the same period. Size and Industry match-firms are formed by select firms that listed before the IPO at least 500 trading day and are in the same industry closest in size. The one year performance are IPOs during 1988-1995. The two-year performance is IPO firms conducted during 1988-1994. The three-year performance is IPOs issued during 1988-1993.

Panel A: 1 year performance

Benchmarks	Number of firms	IPO Return	Benchmark Return	Wealth Relative
Size and industry match-firm	219	1.02	1.01	1.00
SET index	219	1.02	1.12	0.95
Industry index	146	1.07	1.10	0.98

Panel B: 2 year performance

Benchmarks	Number of firms	IPO Return	Benchmark Return	Wealth Relative
Size and industry match-firm	199	0.86	0.92	0.96
SET index	199	0.86	1.22	0.84
Industry index	145	0.91	1.14	0.89

Panel C: 3 year performance

Benchmarks	Number of firms	IPO Return	Benchmark Return	Wealth Relative
Size and industry match-firm	163	0.78	0.84	0.96
SET index	163	0.78	1.50	0.71
Industry index	149	0.79	1.84	0.63

Table 19

Correlation Coefficient between Shares Allocated to each Investor Group in Primary Market and the Cumulative Abnormal Returns (CARs)

The table reports the correlation coefficients between shares allocated to each investor group in the primary market and cumulative adjusted returns (CARs) using SET index as benchmark. LOINST is the local institution, LOINDL is the local individual and FRGINST is the foreign investors. The foreign investor is the combination of the foreign institutions and foreign individual investors. CARs are reported for 1 month to 2 years. Sample is IPOs that issue stocks during 1993 to 1997. Investor allocation data are from Selling-Report (Form 81-1 b).

Investor Types	1month CARs	6months CARs	12 months CARs	18 months CARs	24 months CARs
LOINST	-.001	.052	-.051	-.055	-.116
	(.991)	(.636)	(0.694)	(.721)	(.616)
LOINDL	-.138	.078	.178	.276	.350
	(.191)	(.478	(.163)	(.070)	(.120)
FRGINST	.360**	.046	-.044	-.170	-.025
	(.000)	(.678)	(.732)	(.269)	(.913)

**Correlation is significant at the 0.01 level (2-tailed).

Table 20

Cross Tabulation between Level of Shares Allocated to Each Group of Investor in Primary Market and Cumulative Market Adjusted Returns (CARs)

This table shows average number of cumulative abnormal returns of CARs for each level of shares held by each investor group in the primary market. For each investor group, allocated shares are classified into 3 levels based on 33.33 and 66.67 percentile respectively. "Small" level is the range where allocated shares are in the 33.33 percentile. "Medium" level is the range where allocated shares are between 33.33 and 66.67 percentile. "High" level is the range where allocated shares are over 66.67 percentile. The CARs are reported on 1, 6 and 12 months. N is the number of firms in each level.

Panel A. Local institutional investors

Level of holding	CARs					
	1-months	N	6-months	N	12-months	N
Small	-9.69	37	-5.81	36	-15.14	25
Medium	-.3903	30	-2.94	27	-22.72	20
High	-5.06	24	.4454	21	-30.99	18

Panel B. Local individual investors

Level of holding	CARs					
	1-months	N	6-months	N	12-months	N
Small	-2.41	27	-4.39	26	-34.48	20
Medium	-2.27	29	-2.04	26	-17.14	20
High	-10.31	35	-3.13	32	-15.58	23

Panel C. Foreign investors (individual and institutions)

Level of holding	CARs					
	1-months	N	6-months	N	12-months	N
Small	-18.82	9	-23.05	7	-73.63	3
Medium	-9.09	55	-3.62	50	-20.61	37
High	6.58	27	2.78	27	-17.72	23

Table 21

Aftermarket Performance of IPOs (CARs) in 1996

Average matching firm-adjusted returns (AR_t) and cumulative average returns (CAR_t) in percent, The benchmarks used are the SET index, Index 1(equal weight size-match portfolio) and Index2 (value weight size-match portfolio for the corresponding event month). $AR_t = \frac{1}{n}\sum_{i=1}^{n_t}(r_{ipo,it} - r_{m,it})$ where $r_{ipo,t}$ is the total return on initial public offering firm i in event month t, and $r_{m,it}$ is the total return on the corresponding period of IPOs' return.

Event month	Numbers of IPO	A. SET Index		B. Index 1		C. Index 2	
		AR	CAR	AR	CAR	AR	CAR
1	39	-1.52	-1.52	-5.72	-5.72	-5.41	-5.41
2	39	1.13	-0.39	-0.37	-6.08	0.12	-5.28
3	39	4.22	3.83	2.32	-3.76	-1.59	-6.88
4	39	3.10	6.93	-3.38	-7.14	-5.11	-11.99
5	39	0.05	6.99	3.02	-4.12	4.64	-7.34
6	39	0.29	7.28	0.83	-3.29	0.75	-6.59
7	39	0.62	7.90	-7.90	-11.20	-13.60	-20.19
8	39	-1.27	6.62	-3.09	-14.29	-3.20	-23.39
9	39	-1.33	5.30	-3.71	-18.00	-5.74	-29.13
10	39	1.43	6.73	4.28	-13.71	5.49	-23.64
11	39	1.77	8.50	-10.36	-24.07	-15.02	-38.66
12	38	-0.40	8.10	0.52	-23.55	0.76	-37.90
13	38	4.54	12.64	-0.74	-24.29	0.77	-37.12
14	37	-1.41	11.23	-2.54	-26.83	-6.67	-43.79
15	35	3.23	14.46	-12.85	-39.68	-19.14	-62.93
16	35	-0.62	13.84	-2.42	-42.11	-2.20	-65.14
17	34	-1.60	12.24	-6.64	-48.74	-10.60	-75.73
18	34	-2.52	9.72	-4.82	-53.56	-6.02	-81.75
19	34	2.92	12.64	0.15	-53.41	0.25	-81.50
20	33	6.66	19.30	-4.13	-57.53	-5.16	-86.66
21	32	-3.03	16.27	-12.42	-69.96	-19.08	-105.74
22	32	4.05	20.33	-2.56	-72.52	-1.02	-106.76
23	32	4.85	25.17	-4.44	-76.96	-1.05	-107.82
24	31	-3.99	21.18	-6.46	-83.42	-6.06	-113.87
25	27	0.07	21.25	0.03	-83.39	1.34	-112.53
26	22	9.24	30.49	-4.19	-87.58	-6.36	-118.89
27	19	-6.96	23.53	-1.58	-89.16	-5.60	-124.50
28	15	-5.99	17.53	-15.12	-104.27	-18.73	-143.23
29	11	8.47	26.00	7.95	-96.32	8.64	-134.58
30	8	0.04	26.04	10.98	-85.34	2.22	-132.37
31	3	14.01	40.05	-60.31	-145.65	-24.89	-157.25

Table 22

Investment of IPO Stocks in the Secondary Market by Various Investor Groups at the First Day and the Cumulative Net Investment at the 21-day Trading

The Table shows the volume of shares traded (buy and sell) by each investor group in the secondary market at the first day trading of IPOs and the cumulative net investment at the first month (21 days) trading. Panel A shows the percentage of share traded by each investor group at the first day trading. Panel B shows cumulative investment up to the first month (21 trading days). Both Panels exhibit buying, selling and net buy-sell by each investor group. BB is the percentage of shares bought by broker portfolio. CB is the customer buy, MB is the mutual fund buy and FB is the foreign portfolio buy. BS is the percentage of shares sold by the broker. CS is the customer sell, MS is the mutual fund sell and FS is the foreign sell. B is the net buy-sell of broker portfolio as a percentage of total buy, C is the net buy-sell of customer portfolio, M is the net buy-sell of mutual fund portfolio and F is the net buy-sell of foreign portfolio. Sample is 36 IPOs that are traded in 1996.

Panel A: Trading on First Day

Value	Investor buy				Investor sell				Investor net buy-sell			
	BB(%)	CB(%)	MB(%)	FB(%)	BS(%)	CS(%)	MS(%)	FS(%)	B(%)	C(%)	M(%)	F(%)
mean	8.87	81.81	2.09	7.20	11.24	74.94	4.38	9.44	-2.37	6.87	-2.29	-2.24
median	1.88	92.00	0.00	1.93	4.54	75.95	2.66	5.67	-1.13	11.26	0.00	-.90
Std.dev	20.07	22.88	5.03	11.69	15.25	16.05	5.57	9.93	21.24	27.77	7.66	14.06

Panel B: Trading cumulative to the 21 days

Value	Investor buy				Investor sell				Investor net buy-sell			
	BB(%)	CB(%)	MB(%)	FB(%)	BS(%)	CS(%)	MS(%)	FS(%)	B(%)	C(%)	M(%)	F(%)
mean	5.54	85.77	1.30	7.38	8.21	80.90	3.29	7.62	-2.67	4.87	-1.98	-.24
median	2.55	92.39	0.00	1.95	4.66	83.07	1.72	4.50	-1.65	6.14	-.86	-1.18
Std.dev	12.74	16.58	3.24	10.24	11.35	12.22	3.79	7.03	8.44	14.77	4.89	9.43

Table 23

Abnormal Returns and Changes in Cumulative Net Investment for the Broker Portfolio

The table shows the relationship between changes in the cumulative net investment (CNI) of broker portfolio and the aftermarket performance of IPOs. Positive changes are cases when the difference between 21-day cumulative net investment and the first-day net investment of broker portfolio is greater than 0. Negative cases are cases when the difference is less than 0. M is the event month. N is number of observations.

M	Positive Changes					Negative changes				
	N	AR	t-stat	CAR_t	t-stat	N	AR	t-stat	CAR_t	t-stat
1	25	-1.51	-0.46	-1.51	-2.19	14	-1.53	-0.72	-1.53	-1.11
2	25	1.80	0.83	0.28	0.29	14	-0.05	-0.03	-1.58	-0.75
3	25	4.49	1.37	4.77	4.02	14	3.73	1.27	2.15	0.81
4	25	3.78	1.65	8.55	6.25	14	1.89	0.90	4.04	1.30
5	25	-0.76	-0.32	7.80	5.10	14	1.50	0.49	5.53	1.59
6	25	-0.03	-0.01	7.77	4.64	14	0.87	0.31	6.41	1.67
7	25	2.93	0.79	10.70	5.92	14	-3.51	-1.58	2.89	0.70
8	25	-1.42	-0.51	9.28	4.80	14	-1.01	-0.26	1.88	0.42
9	25	0.85	0.25	10.13	4.94	14	-5.21	-1.01	-3.32	-0.70
10	25	0.49	0.19	10.62	4.92	14	3.12	1.11	-0.20	-0.04
11	25	-0.18	-0.05	10.43	4.61	14	5.25	0.55	5.05	0.96
12	24	1.10	0.39	11.54	4.78	14	-2.98	-0.55	2.07	0.38
13	24	4.61	1.04	16.15	6.43	14	4.42	1.51	6.49	1.14
14	23	2.75	0.48	18.90	7.10	14	-8.25	-1.26	-1.75	-0.30
15	23	11.54	1.30	30.44	11.05	12	-12.69	-2.07	-14.45	-2.18
16	23	0.98	0.24	31.42	11.04	12	-3.71	-0.58	-18.15	-2.65
17	22	3.44	0.26	34.86	11.63	12	-10.82	-1.36	-28.98	-4.10
18	22	-5.00	-0.69	29.86	9.68	12	2.04	0.22	-26.94	-3.70

Table 24

Abnormal Returns and Changes in Cumulative Net Investment for the Customer Portfolio

The table shows the relationship between changes in the cumulative net investment (CNI) of customer portfolio and the aftermarket performance of IPOs. Positive changes are cases when the difference between 21-day cumulative net investment and the first-day net investment of customer portfolio is greater than 0. Negative cases are cases when the difference is less than 0. M is the trading month. N is the number of IPO firms. M is the event month (21 trading days). N is the number of observations.

M	Positive Changes					Negative changes				
	N	AR	t-stat	CAR$_t$	t-stat	N	AR	t-stat	CAR$_t$	t-stat
1	11	0.78	0.29	0.78	0.46	28	-2.42	-0.83	-2.42	-5.18
2	11	0.37	0.09	1.15	0.42	28	1.44	0.92	-0.99	-1.75
3	11	5.01	0.99	6.16	1.79	28	3.90	1.49	2.91	4.49
4	11	5.46	1.15	11.62	2.87	28	2.18	1.59	5.09	7.04
5	11	2.91	0.93	14.53	3.18	28	-1.07	-0.47	4.02	5.09
6	11	-1.72	-0.46	12.82	2.54	28	1.08	0.54	5.10	6.00
7	11	-2.02	-1.06	10.80	1.98	28	1.65	0.48	6.75	7.43
8	11	-2.86	-0.74	7.94	1.35	28	-0.65	-0.23	6.11	6.35
9	11	-2.56	-0.49	5.38	0.86	28	-0.84	-0.24	5.27	5.20
10	11	4.20	1.20	9.58	1.45	28	0.35	0.15	5.61	5.28
11	11	-4.39	-0.89	5.19	0.75	28	4.19	0.78	9.80	8.84
12	10	6.85	2.50	12.04	1.59	28	-2.99	-0.90	6.81	5.90
13	10	2.96	0.78	15.00	1.90	28	5.11	1.34	11.92	9.96
14	10	-10.47	-1.64	4.53	0.55	27	1.95	0.36	13.86	10.99
15	9	-2.65	-0.45	1.88	0.21	26	5.27	0.62	19.13	14.41
16	9	-4.79	-0.73	-2.91	-0.31	26	0.82	0.20	19.95	14.59
17	9	-14.48	-2.07	-17.38	-1.82	25	3.04	0.26	22.99	16.02
18	9	-5.76	-0.88	-23.14	-2.35	25	-1.35	-0.18	21.64	14.68

Table 25

Abnormal Returns and Change in Cumulative Net Investment for the Mutual Fund Portfolio

The table shows the relationship between changes in the cumulative net investment (CNI) of mutual fund portfolio and the aftermarket performance of IPOs. Positive changes are cases when the different between 21-day cumulative net investment and the first-day net investment of mutual fund portfolio is greater than 0. Negative cases are cases when the difference is less than 0. M is the event month (21 trading days). N is the number of observations.

M	Positive Changes					Negative changes				
	N	AR	t-stat	CAR$_t$	t-stat	N	AR	t-stat	CAR$_t$	t-stat
1	23	-3.01	-0.91	-3.01	-4.05	16	0.62	0.23	0.62	0.47
2	23	0.74	0.38	-2.26	-2.78	16	1.70	0.66	2.32	1.82
3	23	5.96	2.01	3.69	4.18	16	1.71	0.45	4.03	3.24
4	23	2.89	1.88	6.58	6.96	16	3.41	1.00	7.44	6.14
5	23	1.42	0.65	7.99	7.97	16	-1.91	-0.58	5.54	4.69
6	23	-0.27	-0.12	7.73	7.30	16	1.10	0.39	6.63	5.79
7	23	-0.15	-0.04	7.58	6.82	16	1.72	0.90	8.35	7.52
8	23	-0.11	-0.04	7.46	6.43	16	-2.93	-0.83	5.42	5.04
9	23	-1.71	-0.42	5.75	4.76	16	-0.77	-0.19	4.65	4.48
10	23	0.03	0.01	5.78	4.60	16	3.46	1.08	8.11	8.11
11	23	0.30	0.05	6.07	4.67	16	3.88	1.02	11.99	12.49
12	23	-1.58	-0.44	4.50	3.35	15	1.40	0.36	13.40	14.13
13	23	3.59	0.87	8.08	5.84	15	6.01	1.41	19.40	21.49
14	22	-0.18	-0.03	7.90	5.42	15	-3.22	-0.55	16.19	18.92
15	20	1.49	0.18	9.39	5.98	15	5.56	0.53	21.75	27.00
16	20	7.06	1.49	16.45	10.20	15	-10.87	-3.02	10.88	14.47
17	19	-8.42	-1.37	8.03	4.74	15	7.05	0.37	17.93	25.83
18	19	5.36	0.81	13.38	7.71	15	-12.49	-1.32	5.43	8.61

Table 26

Abnormal Returns and Change in Cumulative Net Investment for the Foreign Investors Portfolio

The table shows the relationship between changes in the cumulative net investment (CNI) of foreign portfolio and the aftermarket performance of IPOs. Positive changes are cases when the difference between 21-day cumulative net investment and the first-day net investment of foreign portfolio is greager than 0. Negative cases are cases when the difference is less than 0. M is the event month (21 trading days). N is the number of observations.

M	Positive Changes					Negative changes				
	N	AR	t-stat	CAR$_t$	t-stat	N	AR	t-stat	CAR$_t$	t-stat
1	24	-0.18	-0.06	-0.18	-0.32	15	-3.66	-1.17	-3.66	-2.95
2	24	0.51	0.24	0.33	0.33	15	2.13	0.95	-1.53	-0.76
3	24	4.45	1.52	4.77	3.76	15	3.85	0.97	2.32	0.91
4	24	4.21	2.46	8.99	5.97	15	1.32	0.40	3.64	1.22
5	24	0.09	0.04	9.08	5.32	15	-0.01	0.00	3.63	1.08
6	24	1.87	0.79	10.95	5.80	15	-2.23	-0.88	1.40	0.38
7	24	3.49	0.91	14.44	7.04	15	-3.98	-1.89	-2.58	-0.64
8	24	0.30	0.11	14.74	6.68	15	-3.78	-0.97	-6.36	-1.46
9	24	0.60	0.15	15.34	6.53	15	-4.40	-1.07	-10.76	-2.33
10	24	0.21	0.08	15.55	6.26	15	3.39	1.15	-7.37	-1.51
11	24	3.95	0.61	19.50	7.47	15	-1.72	-0.64	-9.10	-1.78
12	24	-2.20	-0.61	17.30	6.34	14	2.68	0.76	-6.42	-1.16
13	24	4.80	1.14	22.10	7.76	14	4.10	1.08	-2.32	-0.40
14	23	-1.02	-0.17	21.08	6.97	14	-2.05	-0.31	-4.37	-0.73
15	22	7.78	0.79	28.86	9.01	13	-4.46	-0.87	-8.83	-1.37
16	22	-0.91	-0.21	27.94	8.44	13	-0.13	-0.02	-8.96	-1.34
17	22	5.86	0.45	33.80	9.89	12	-15.26	-2.15	-24.23	-3.38
18	22	0.56	0.10	34.37	9.77	12	-8.17	-0.64	-32.39	-4.39

Table 27

**Correlation Coefficients between Cumulative Net Investment and
Contemporaneous Cumulative Market-Adjusted Returns**

The table shows the correlation coefficients between the daily cumulative adjusted returns (CARs) using SET index as benchmark and the daily cumulative net investment of broker portfolio, customer portfolio, mutual fund portfolio and the foreign portfolio. Daily data of 39 IPOs are pooled together which in total there are 4,939 observations in the sample.

variables	CAR	broker	customer	Mutual fund	foreign
CAR	1.000				
Broker	-.307**	1.000			
Customer	-.093**	-.231**	1.000		
Mutual fund	.151**	.120**	-.681**	1.000	
Foreign	.207**	-.185**	-.857**	.356**	1.000

** Correlation is significant at the 0.01 level

Table 28

Regression Results of the Monthly Cumulative Adjusted Returns and Monthly Cumulative Net Investment

Dependent variable is the monthly cumulative market adjusted returns for IPO firm i (CAR_i). In Panel A, $BROK_i$, $CUST_i$ and $MUFU_i$ are used as explanatory variables. In Panel B, $BROK_i$, $FRGN_i$ and $MUFU_i$ are used as explanatory variables. $BROK_i$ is the monthly cumulative net investment by broker portfolio of firm i. $FRGN_i$ is the monthly cumulative net investment by the foreign investor's portfolio and $MUFU_i$ represents the mutual fund portfolio. $SIZE$ is the log of market value of IPO firm i. BV/MV is the log of book to market value of firm i. Sample is IPOs in the year 1996. Total numbers of IPOs in the sample are 38 firms. M is the event month. Equation used to estimate the relationship is

Panel A

$$CAR_i = \alpha_0 + \alpha_1 BROK_i + \alpha_2 CUST_i + \alpha_3 MUFU_i + \alpha_4 SIZE_i + \alpha_5 BV/MV_i + \varepsilon_i$$

M	α_0	α_1	α_2	α_3	α_4	α_5
01	-19.763	-2.291	.376	-2.771	9.225**	-1.369
02	-13.504	-1.384	1.457	-1.027	7.519	2.435
03	-13.623	-.746	.587	1.155	6.961	-5.770
04	-8.658	.397	1.458	3.267	2.069	-11.453
05	1.576	-.942	.389	2.213	-2.681	-10.354
06	-12.615	-.582	.491	1.835	2.986	-17.917
07	-17.308	-.259	.508	1.507	5.321	-11.875
08	-23.958	-.643	.366	1.855	5.919	-22.440
09	-19.630	-.536	.081	.849	7.043	-19.223
10	-1.997	-.381	.186	1.470	3.171	-.444
11	2.314	-.938	.081	1.885	-5.783	-21.533
12	7.526	-1.342	-.328	.059	-17.659	-13.587

Table 28 - continued

Panel B

$$CAR_i = \alpha_0 + \alpha_1 BROK_i + \alpha_2 FRGN_i + \alpha_3 MUFU_i + \alpha_4 SIZE_i + \alpha_5 BV/MV_i + \varepsilon_i$$

M	α_0	α_1	α_2	α_3	α_4	α_5
01	-19.763	-2.667*	-.376*	-.3.148	9.255**	-1.369
02	-13.504	-2.841*	-1.457	-2.485	7.519*	2.435
03	-13.623	-1.333	-.537	.568	6.961	-5.770
04	-8.658	-1.061	-1.458	1.809	2.069	-11.453
05	1.576	-1.331	-.389	1.824	-2.681	-10.354
06	-12.615	-1.073	-.491	1.344	2.986	-17.917
07	-17.308	-.767	-.508	.998	5.321	-11.875
08	-23.958	-1.009	-.366	1.488	5.919	-22.440
09	-19.630	-.617	-.081	.768	7.043	-19.223
10	-1.997	-.567	-.186	1.283	3.171	-.444
11	2.314	-1.020	-.083	1.084	-5.873	-21.533
12	7.526	-1.015	.328	.387	-17.659	-13.587

* significant at 10% level
** significant at 5% level

Figure 3

Cumulative Adjusted Returns of the IPOs

The figure illustrates the cumulative adjusted returns of the IPOs (CARs). Event month is defined as the 21-consecutive day subsequent to listing date. Five benchmarks are used and shown in the figure. The matching firm benchmark is the firm listed at least three years before the IPOs, closest in size and is in the same industry of IPOs. SET index is CARs using market index return benchmark. Industry index is the cumulative abnormal returns adjusted by the industry index returns in industry of which the IPOs exist. EW and VW are the equally weight size match portfolio and value weight size match portfolio benchmark respectively. The constructed portfolios are created by ranking the listed firms by market value and dividing them into five quintiles. The quintile in which the market value covers the market value of IPOs is used to computed the equally weight and value weight returns for the corresponding return period of IPOs.
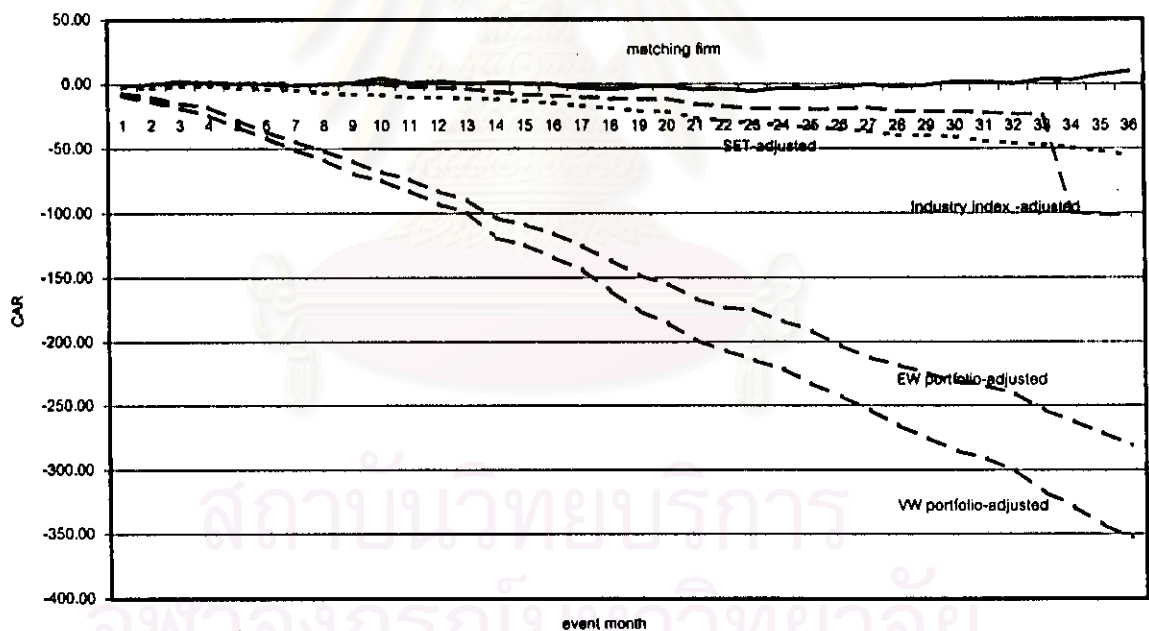
Table 29

Mean Forecast of EPS and Actual EPS of IPO Firms during 1988-1996

The Table summarizes the mean forecast of earning per share (EPS) using the forecasted information from I/B/E/S database. Sample are IPOs firms during 1988-1996 whose data is available in the I/B/E/S database. 1-year forecast is defined as the period where number of days from issuing date to forecast end date is between 180 to 540 days and having been recorded in the database as one-year forecast. 2-year forecast is defined as the period where number of days from issuing date to forecast end date is between 541 to 900 days and having been recorded in the database as two-year forecast. 3-year forecast is defined as the period where number of days from issuing date to forecast end date is between 900 to 1200 days and having been recorded in the database as three-year forecast. Absolute forecast is defined as $FE_{jt} = |(A_{jt} - F_{jt})/A_{jt}|$ and Signed forecast is defined as $FE_{jt} = (A_{jt} - F_{jt})/|A_{jt}|$ where FE_{jt} is the forecast error, A_{jt} is the actual EPS and F_{jt} is the forecasted of EPS. Number in the parenthesis are the t value.

Panel A: Total forecast

Forecast windows	length Of forecast (days)	Number of IPOs	Forecasted EPS	Actual EPS	Absolute forecast	Signed forecast
1- year	356.90	222	4.84	4.40	0.61	-0.51
2- year	724.13	215	6.30	2.92	1.99	-1.85
3- year	1054.41	135	6.79	2.98	4.28	-4.09

Panel B: Foreign analyst forecast

Forecast windows	length Of forecast (days)	Number of IPOs	Forecasted EPS	Actual EPS	Absolute forecast	Signed forecast
1-year	358.35	179	5.06	4.60	0.67	-0.55
2-year	721.83	180	6.019	3.00	1.90	-1.76
3-year	1053.81	108	7.23	3.28	4.88	-4.81

Panel C: Thai analyst forecast

Forecast windows	length Of forecast (days)	Number of IPOs	Forecasted EPS	Actual EPS	Absolute forecast	Signed forecast
1-year	358.44	172	4.87	4.61	0.48	-0.34
2-year	726.68	157	5.92	2.77	1.99	-1.80
3-year	1056.95	89	7.21	2.91	2.21	-1.90

Table 30

Regression Results between CARs and Forecast Error

Crossectional regreesion between CARs at different time and the corresponding period forecast error are shown. The dependent variables are the 1-month CAR, 6-months,12-month, 24-months and 36-months CARs. Sample is IPOs during 1988 to 1996, which have data available in the I/B/E/S database. *IR* is the market-adjusted initial returns. *SIZE* is the gross proceeds of the new issues, *AGE* is the age of firms since establishment to the date of offerings, *BV/MV* is the book value per share of IPO divided by market price at the end of the first month's trading. *FE* is the CARs sign forecast error of EPS for the corresponding period of CARs. It is computed as (Actual EPS − Forecast EPS)/absolute value of the actual EPS. The equation that uses to verify the hypothesis is

$$CAR_i = \beta_0 + \beta_1 IR_i + \beta_2 \log SIZE_i + \beta_3 \log AGE_i + \beta_4 \log BV/MV_i + \beta_5 FE_i$$

Independent variable	CARs				
	(1) 1-month	(2) 6-month	(3) 12-month	(4) 24-month	(5) 36-month
Intercept	-12.92	-2.47	-49.73	-52.44	-49.89
	(-.907)	(-.095)	(-1.204)	(-.846)	(-.438)
IR	-.0033	-.05	-.005	.001	.06
	(-.111)	(-.964)	(-.576)	(.014)	(.410)
LogSIZE	4.785	-.90	.86	-2.69	2.48
	(4.421)	(-.146)	(0.088)	(-.212)	(.108)
Log AGE	-1.24	6.25	33.00*	35.24	11.63
	(-.209)	(.585)	(1.983)	(1.44)	(.264)
Log BV/MV	5.96	4.03	4.47	17.14	24.97
	(.835)	(.316)	(.215)	(.686)	(.593)
FE	1.265	1.94	.31	.109	5.15
	(1.72)	(1.501)	(.162)	(.213)	(2.24)**
Adjusted R^2	.002	.001	.005	.011	.043
F-value	1.084	1.030	1.132	.812	1.41
Number of sample	186	175	144	90	47

* significant at the 10 % level
** significant at the 5% level

Table 31

Analyst forecasts Revision and the Aftermarket Performance of IPOs

Panel A of this table provides the descriptive statistics of the analyst forecast revision data. The analyst forecast data are obtained from the I/B/E/S database. Analyst forecast revision is defined as the difference between the last EPS forecast observed in the first year subsequent to trading and the first EPS forecast during the first year. The number is deflated by the market price at the first forecasts. N is the number of firms in the sample. Positive revision is the case where the average of last EPS last in the first year forecast is greater than the average of first EPS forecast. It is the case which analysts forecast upward. Negative revision is cases which analyst forecast downward. Time length is the difference between the last forecast in the first year and the first forecast. Panel B shows the regression results when dependent variables are the 12-month CARs in column A, 24- month CARs in column B and 36- month CARs in column C. Sample is IPOs during 1988 to 1996 which have data available in the I/B/E/S database. IR is the market-adjusted initial returns. SIZE is the gross proceeds of the new issues, AGE is the age of firms since establishment to the date of offerings, BV/MV is the book value per share of IPO divided by market price at the end of the first month's trading. REV is the analyst forecast revision within one year.

Panel A

Data	N	Mean	Std. deviation
Total Revision	113	-.00791	.0524
Positive Revision	55	.00956	.02256
Negative Revision	58	-.0245	.0660
Time length	143	126.40	134.7182

Panel B

$$CAR_i = \beta_0 + \beta_1 IR_i + \beta_2 \log SIZE_i + \beta_3 \log AGE_i + \beta_4 \log BV/MV_i + \beta_5 REV_i$$

Dependent variable	(A) 12 months CARs	(B) 24 month CARs	(C) 36 months CARs
Intercept	-32.44	-128.22	-251.99
	(-.652)	(-1.420)	(-1.58)
IR	-.02	-.02	-.08
	(-.184)	(-.119)	(-.334)
Log SIZE	5.62	11.83	29.79
	(.442)	(.544)	(.819)
Log AGE	27.75	50.92	48.66
	(1.36)	(1.505)	(.774)
Log BV/MV	37.94	9.56	-38.52
	(1.59)	(.263)	(-.563)
REV	696.204	1235.93	1249.94
	(2.555)**	(2.045)**	(1.348)
Adjusted R^2	.061	.029	-.049
F-statistics	2.046	1.255	.730
n	81	43	30

**significant at 5% level