

EVALUATING VALUE OF BROKERS' RECOMMENDATIONS IN THE THAI STOCK MARKET

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EXECUTIVE SUMMARY

This study evaluates the value of stock recommendations provided by brokers and sub-brokers in the Thai stock market. Using weekly survey data from Managers Information Services from 7 March 1994 to 3 March 1997, the study finds a significant price increase for recommended stocks on Monday and Tuesday in the recommendation week. However, the price fell afterward. Investors could benefit from these recommendations if they received them early and held the stocks for a short period. The downward price drift resulted partly from the brokers' loyal choice for high-beta stocks even in a bearish market, thereby indicating their poor market timing ability. Further analyses suggest that the brokers did not demonstrate stock selection ability. However, there is some evidence to suggest that they have industry-identification ability, although this ability could generate little investment value to the investor.

1 INTRODUCTION

In Thailand, investors who wish to trade stocks listed on the Stock Exchange of Thailand must open an account with member brokers (or sub-brokers¹). These brokers are full-service brokers. After accounts have been opened, brokers will provide their investors with information about the economy, market, industries, and/or specific firms as well as recommendations on which stocks to buy or sell. There is no pattern as to what types of information brokers will provide or when they will provide it. However, most brokers recommend winner and/or loser stocks on a regular basis and their lists can be updated as frequently as every three days or every week. There is no direct charge for the information being offered. However, if the investors decide to buy or sell stocks, the system designed by the Stock

¹ Sub-brokers provide brokerage services to investors for fees. Since these sub-brokers are not members of the Stock Exchange of Thailand, they will have to submit buy and sell orders of SET-listed stocks through member brokers for execution.

Exchange of Thailand requires that orders be placed through brokers. The brokers then charge a flat commission fee of 0.5 per cent on the value of stocks being executed.² Thai brokers provide two different services: information services and brokerage services. Therefore, the 0.5 per cent commission paid by the investors can be regarded as being compensation for the two services rendered.

This study evaluates the investment value of the information provided by brokers and sub-brokers. It focuses on the value of buy recommendations and examines the returns the investors may earn if they pay the commission and follow the recommendations. The buy recommendations are examined because it is easy for investors to follow, these recommendations lead to investment action, and all brokers and sub-brokers offer them on a regular basis.

This study makes at least two important contributions to the literature. First, it offers new insights for Thailand as to whether the recommendation value exists and how it is created. Thailand's stock market is one of the most important emerging markets in the Pacific Rim in terms of its growth and size, although its visibility is diminishing due to the country's recent economic difficulties. The Thai market is still young. Hence, the investors, stock analysts as well as brokers tend to be less experienced and less sophisticated than those in more developed markets. This study shows that brokers' recommendations have value, although this value does not result from the brokers' ability to identify good firms.

Second, it utilises a unique data set based on the survey by Managers Information Services (MIS) on brokers' stock recommendations. Each week, MIS ask about 15 brokers and sub-brokers specifically to pick five stocks for a short-term, one-week holding period and five stocks for a medium-term, one-month holding period. Such short- and medium-term investment recommendations are made available to retail investors. Stickle (1995) pointed out that brokers had different reasons underlying different types of recommendations. It is important that the study examined the investment value corresponding to particular types of recommendations separately. Although previous studies examined separate recommendations such as buy and sell (e.g., Stickle 1995), add-to-buy (sell) list and delete-from-buy (sell) list (e.g., Womack 1996), none had examined the buy recommendations for different holding periods. This study will be the first to examine these types of recommendations.

This study employs the data from MIS' weekly survey of stocks recommendations for the short term (one-week holding period) and the medium term (one-month holding period) from 7 March 1994 to 3 March 1997. It finds that recommended stocks exhibited a jump in price only on Monday and Tuesday of the recommendation week. Thereafter, the price reverted. Investors can benefit from the recommendations only if they buy the recommended stocks either on Monday or Tuesday and hold it for a week. Buying the recommended stocks later in the week

² The 0.5 per cent commission fee is applied on retail investors who are the majority in terms of trading value. However, the fee is 0.3 per cent fixed for Thai mutual funds, 0.3 per cent minimum for foreign brokers and 0.5 per cent minimum for foreign investors.

and/or holding them for a longer period can generate a loss. Further investigation reveals that the brokers do not have market-timing or stock-selection ability. However, there is some evidence to suggest that they had industry-identification ability, although this ability could generate little investment value to the investor.

The organisation of the study is as follows. Section 2 provides a brief description of the data and examines common characteristics of the recommended stocks. The research methodology is discussed in Section 3, while Section 4 reports and analyzes the results. Section 5 concludes and discusses policy implications.

2 DATA

2.1 Sources of the Data

The data are weekly surveys of brokers' and sub-brokers' buy recommendations, conducted by Managers Information Services (MIS). Each week from Monday to Wednesday, MIS samples approximately 15 brokers and sub-brokers and then asks them to choose five stocks for a one-week investment period and five stocks for a one-month investment period. The two groups of stocks can overlap. The surveys cover a period from 7 March 1994 to 3 March 1997 (149 weeks with eight missing samples).³ The MIS database is the only database in Thailand which records stock recommendations of brokers and sub-brokers. MIS limits its interest only to buy recommendations. Although it is important to examine the value of sell recommendations, the database does not allow this study to conduct that exercise.

In addition to brokerage services, the brokers and sub-brokers in the sample provided investment-banking and advisory services as well as investment in their proprietary portfolios. As to the brokerage services, they served all types of investors: local retail investors, local institutional investors and foreign institutional investors. Khanthavit (1998) reported that, from 3 January 1995 to 27 October 1997, the average trading value of these investor groups was 66 per cent, 8 per cent and 26 per cent, respectively. Despite their aggregate trading value, the accounts of retail investors were the smallest, while those of foreign institutional investors were the largest. Marketing officers served investors in their assigned investor groups exclusively. The recommendations examined by this study were those from retail officers. Usually, these recommendations were not prepared by the officers themselves, but by stock analysts in the research department.

This study uses Monday to Wednesday during which MIS conducted the survey as the recommendation period. The sample stocks to be considered must have at least 208 daily observations—145 days before the recommendation period, 3 days for the Monday-to-Wednesday recommendation period, and 60 days after

³ MIS employed these survey data to generate stocks for the "Hoon Wong Daeng" column in *Hoon Thai*. The publication is now discontinued. The missing observations are 4 March 96, 25 March 96, 1 April 96, 22 July 96, 29 July 96, 12 August 96, 6 January 97 and 20 January 97.

the recommendation period. This is because the data on days -145 to -26 (120 trading days covering a period of about six calendar months) will be used for parameter estimation, following Copeland and Mayers (1982). The remaining samples are used to test for the investment value of the recommendation.

The returns on recommended stocks will be examined *vis-a-vis* the return on market portfolio and SET sectorial portfolios. All returns are daily and adjusted for dividends and rights, and measured by daily closing prices.⁴ The returns on recommended stocks are reported by the Stock Exchange of Thailand (SET). The return on the market portfolio is the equal-weighted average return of all stocks on the SET and the returns on the SET sectorial portfolios are the equal-weighted average returns of all stocks in the sectors classified by the SET. As some recommended stocks are relatively large with respect to the market and their corresponding sectors, their returns will be highly correlated with the value-weighted average returns on the market and sectorial portfolios. The equal-weighted average returns are used to lessen the influence of large stocks in the market and sectorial portfolios.

Figure 1 shows the daily movement of the SET index during the sample period. The index had moved upward briefly before it reached its all-time high in September 1994. It then fell and the down trend continued until the end of the sample period. During the full sample period, the average daily return was -0.0889 per cent and the standard deviation was 1.3515 per cent. The average return and standard deviation in the first two thirds of the sample from 7 March 1994 to 26 January 1996 were 0.0030 per cent and 1.2709 per cent respectively. Those in the last one third of the sample from 29 January 1996 to 3 March 1997 were -0.2489 per cent and 1.4700 per cent respectively.

2.2 Common Characteristics of Recommended Stocks

Previous studies, e.g. Barber and Loeffler (1993), Desai and Jain (1995) and Womack (1996), found that recommended stocks in the US shared common characteristics which suggested over- or under-valuation, price momentum or reversal, visibility

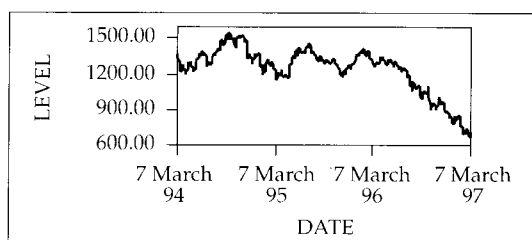


Figure 1 Movement of the SET index from 7 March 1994 to 3 March 1997

⁴ For example, the return on Monday is computed from the closing prices on Monday and Tuesday. This return amounts to the return that the investor would have earned if he bought the stock on Monday and held it for one day.

and growth. If brokers limit their interest to stocks with certain characteristics, they may be less concerned with the risk and return characteristics of stocks even though these two characteristics are the most important. Moreover, this behavior may lead to multiple recommendations of the same stocks.

This study examines whether or not recommended stocks in Thailand share common characteristics. The characteristics being considered are of three groups and are reported in Table 1.

The three groups of characteristics are:

1. Characteristics which indicate under-valuation of stocks such as (1.1) price per share, (1.2) past price change, (1.3) EPS growth, (1.5) P/E ratio, (1.6) price-to-book ratio, (1.7) dividend yield. These characteristics were suggested by Womack (1996).
2. Characteristics which indicate stock visibility such as (2.1) market capitalisation, (2.2) periods of listing, (2.3) number of news stories, (2.4) daily trading value and (2.5) daily trading turnover. These characteristics were suggested by Falkenstein (1996).
3. Characteristics which indicate stock volatility and risk such as (3.1) beta, (3.2) variance and (3.3) past price increase. These characteristics were suggested by Badrinath *et al.* (1995) and Guercio (1996).

All the characteristics are computed using daily data over 120 days prior to the recommendation of Monday and are averaged across the interesting stocks and sample weeks. It is found from the table that the characteristics of recommended stocks are very much different from those of other stocks in the market. The recommended stocks were highly visible, highly liquid, winner stocks of high-growth firms. The brokers chose high-beta stocks even in a bearish market, suggesting their preference of this characteristic.

The average return of the recommended stocks is 0.0238 per cent, as opposed to -0.0772 per cent for that of all stocks. This suggests that the Thai brokers and sub-brokers in the sample focused on winner stocks which have had an increase in price. In the US, Desai and Jain (1995) found that winner stocks were recommended by *Barron's* money manager. However, the winner characteristic was not preferred by US analysts in Womack's 1996 study. Womack found that stocks on the add-to-buy list tended to be under-valued and had a slight increase in price.

Table 1 suggests that the recommended stocks were highly visible and highly liquid. The recommended stocks had an average price almost two times, and market capitalisation greater than five times, those of the average stock. The trading value of the recommended stocks was about five times that of all stocks, while its volume turnover was almost two times. In the US, it is found that highly visible, highly liquid stocks are preferred by institutional investors such as *Barron's* money managers (Desai and Jain (1995)) and mutual funds and other institutional investors (Badrinath *et al.* (1995)).

The number of listing periods and the number of news stories can indicate the visibility of stocks. In the US, these two indicators of recommended stocks were

Table 1
Characteristics of interesting stocks

The table reports the characteristics of interesting stocks, including all the listed stocks, all the recommended stocks, the short-term (one-week holding) stocks, the medium-term (one-month holding) stocks, the stocks which received five or more recommendations, and the stocks which were recommended for both short- and long-term holding periods. All the characteristics are computed using daily data over 120 days prior to the recommendation periods and are averaged across sample stocks and weeks.

Characteristic	Interesting stocks					
	All stocks	Rec. stocks	Short-term holding	Med-term holding	stocks with ≥ 5 recom	Stocks on both lists
Avg Return (per cent)	-0.0772	0.0238	0.0230	0.0444	0.0920	0.0626
Std Dev (per cent)	2.7226	2.7125	2.8281	2.5708	2.4984	2.6513
Beta	0.9657	1.3656	1.4582	1.3023	1.4012	1.4182
Avg price (baht)	103.05	198.65	159.64	231.45	204.85	193.81
Mkt cap (mill baht)	8,063.09	41,126.51	37,629.10	51,488.95	78,724.36	54,513.08
List. period (weeks)	329.31	365.10	353.60	402.95	515.16	411.14
News stories (4-week avg)	147	149	149	147	149	149
Trading val. (thd baht)	14,523.15	74,158.69	80,095.41	84,763.56	139,136.27	105,807.70
Vol turnover (times)	0.001820	0.003477	0.004080	0.003036	0.003538	0.003674
EPS growth (per cent)	19.09	51.51	46.51	66.59	39.40	68.39
P/E ratio (times)	45.09	63.21	67.69	69.66	81.94	82.40
P/B ratio (times)	2.83	4.75	4.41	5.18	4.94	4.97
Dividend yld (per cent per year)	4.16	2.35	2.45	2.21	2.25	2.24

found by Barber and Loeffler (1993) and Badrinath *et al.* (1995) to be larger than those of all stocks. In this study, however, the numbers of listing periods and news stories for the recommended stocks were marginally higher. This is probably because the Thai market is a young, emerging market whose registered stocks had increased in number only in recent years. Moreover, the fact that the numbers of news stories were about the same is probably because they were compiled from the SET's SIMS system. The SIMS system reports official news from listed firms which are mostly reports on the firms' profit and loss.

In the US, Barber and Loeffler (1993) found that analysts preferred the stocks of high-growth firms, which exhibited high P/E ratios and low dividend yields. From the table, high-growth stocks were also preferred by Thai brokers and sub-brokers. The recommended stocks in the sample had an EPS growth almost three times that of all stocks. Their P/E ratio and price/book ratio were also higher by about two times, while their dividend yields were only about a half of those of an average stock.⁵

It is interesting to note that, even when the market was bearish, the brokers still recommended high-beta stocks. The preference for high-beta stocks was also found for the US market, for example, by Barber and Loeffler (1993) and Desai and Jain (1995). This preference did not change with the market conditions. In a study on US stocks, Schlarbaum *et al.* (1978) and Groth *et al.* (1979) found that the betas of recommended stocks were the same in the bullish and bearish markets.

To better understand the brokers' recommendations of stocks, Table 1 compares the characteristics of short- and medium-term holding stocks. It is very interesting to find that the brokers tended to recommend highly successful, highly visible, growth stocks for medium-term holding. These stocks had a high average return and average price. They were of larger firms and were more liquid than those for short-term holding. They also had a longer period of listing. The EPS growth, P/E ratio, price/book ratio and dividend yield suggest that the growth rate of medium-term holding stocks was higher than that of short-term holding stocks. The reason why the brokers showed preference for these medium-term holding stocks was probably that the recommendations for a medium-term holding period were subject to greater uncertainties. These characteristics of the stocks would help the brokers to justify the recommendations to their customers if they turned out to be poor performers. Moreover, as pointed out by Shleifer and Vishny (1995, p. 13), this preference might stem from the brokers' need to impress their investors with "good-looking" stocks.

Table 1 also examines the characteristics of stocks which received five or more recommendations and those which were recommended for both short- and medium-term holding periods in the same week. The results from the table suggest that these stocks were outstanding stocks which possessed unique characteristics.

⁵ From Table 1, the average dividend yield is larger than the inverse of the average P/E ratio. This cannot be interpreted as reflecting the fact that Thai firms pay dividends more than they earn for the year. However, it reflects the fact that there is a large dispersion of dividend pay-out ratios among these firms.

They were real winners which were extremely highly visible. They had a very large price increase, very high market capitalisation, and very high trading value.

3 METHODOLOGY

3.1 Theoretical Foundation

3.1.1 Return-generating process

This study employs the event-study approach to uncover investment value of brokers' recommendations. First, it follows previous studies, e.g., Copeland and Mayers (1982), in assuming that the return on stock j , \tilde{r}_{jt} , is a random variable generated by the following market model:

$$\tilde{r}_{jt} = \alpha_j + \beta_j \tilde{r}_{Mt} + \tilde{\varepsilon}_{jt}. \quad (1)$$

α_j and β_j are the intercept and slope coefficient respectively. \tilde{r}_{Mt} is the random return on the market portfolio and $\tilde{\varepsilon}_{jt}$ is the regression error. By construction, $\tilde{\varepsilon}_{jt}$ is uncorrelated with \tilde{r}_{Mt} and its unconditioned expectation $E[\tilde{\varepsilon}_{jt}]$ is zero. E is the unconditioned expectations operator.

The market model relates the return \tilde{r}_{jt} on stock j linearly with the market return \tilde{r}_{Mt} . As $E[\tilde{\varepsilon}_{jt}]$ is zero, holding stock j will give a return $E[\tilde{r}_{jt}] = \alpha_j + \beta_j E[\tilde{r}_{Mt}]$ in the long run. However, in the short run, there can be deviations. The deviation is represented by $\tilde{\varepsilon}_{jt}$ which this study will use to infer the value of brokers' and sub-brokers' recommendations of stocks.

3.1.2 Industry identification and stock selection

\tilde{r}_{jt} in equation (1) can be decomposed into the component that is related to the market's movement, $\alpha_j + \beta_j \tilde{r}_{Mt}$, and the component that is specific to the stock's movement, $\tilde{\varepsilon}_{jt}$, independent of \tilde{r}_{Mt} . Equation (1) implies that the realisation of $\tilde{\varepsilon}_{jt}(\varepsilon_{jt})$ is the difference between the realisation of $\tilde{r}_{jt}(r_{jt})$ and the realisation of $\alpha_j + \beta_j \tilde{r}_{Mt}(\alpha_j + \beta_j r_{Mt})$. That is,

$$\varepsilon_j = r_{jt} - \alpha_j - \beta_j r_{Mt}. \quad (2)$$

Since $E[\tilde{\varepsilon}_{jt}]$ is zero and ε_{jt} cannot be explained by the movement of the market, the investor can earn ε_{jt} only if he has ability to select stock j for investment in period t . Fama (1972) interpreted ε_j as indicating *selection ability* of the investor.

Suppose stock j is in sector s where $s=1, 2, \dots, S$, this study will decompose $\tilde{\varepsilon}_{jt}$ into the components $\gamma_j^s \tilde{\xi}_t^s$ and $\tilde{\xi}_{jt}$ that can and cannot be explained by the return movement in sector s , respectively. That is,

$$\tilde{\varepsilon}_{jt} = \gamma_j^s \tilde{\xi}_t^s + \tilde{\xi}_{jt} \quad (3)$$

From equation (1), $\tilde{\xi}_t^s$ and $\tilde{\xi}_{jt}$ are uncorrelated with \tilde{r}_{Mt} and $E[\tilde{\xi}_t^s] = E[\tilde{\xi}_{jt}] = 0$. γ_j^s is the slope coefficient which indicates the sensitivity of stock j with the return movement in sector s . By construction, $\tilde{\xi}_t^s$ is uncorrelated with $\tilde{\xi}_{jt}$. $\tilde{\xi}_t^s$ can be described by the market model as in equation (1).

$$\tilde{r}_{st} = \alpha_s + \beta_s \tilde{r}_{Mt} + \tilde{\xi}_t^s \quad (4)$$

The structure of $\tilde{\varepsilon}_{jt}$ in equation (3) is similar to the return decomposition by the factor approach in Admati *et al.* (1986). But the difference is that in equation (3), $\tilde{\xi}_t^s$ for different sectors can be correlated while factors in Admati *et al.* must be uncorrelated.

$\tilde{\varepsilon}_{jt}$ is decomposed as in equation (3) because Womack (1996) noted that ε_{jt} could be explained by *industry identification ability* and *stock selection ability*. $\gamma_j^s \tilde{\xi}_t^s$ and $\tilde{\xi}_{jt}$ can be interpreted as indicating the ability accordingly. To understand this interpretation, consider the realisation of variables in equation (3).

$$\varepsilon_{jt} = \gamma_j^s \xi_t^s + \xi_{jt} \quad (5)$$

Note that, for the investor to earn from stock j at time t , he must be able to identify the return movement in sector s and understand how $\tilde{\varepsilon}_{jt}$ moves with $\tilde{\xi}_t^s$. So, the industry identification ability should be reflected in the realised $\gamma_j^s \xi_t^s$. From equations (1) and (3), since $\tilde{\xi}_{jt}$ cannot be explained by the return movements in the market or in sector s , the investor must have information uncorrelated with \tilde{r}_{Mt} and $\tilde{\xi}_t^s$ to select stock j and earn ξ_{jt} . So, the stock selection ability should be reflected in the realised ξ_{jt} . Next, define Ω_t to be analysts' information and I_{jt} and S_{jt} to be the returns associated with the industry identification and stock selection ability conditioned on Ω_t , respectively. That is,

$$I_{jt} = E[\gamma_j^s \tilde{\xi}_t^s | \Omega_t] \quad (6)$$

$$S_{jt} = E[\tilde{\xi}_{jt} | \Omega_t]. \quad (7)$$

where $E[\cdot | \Omega_t]$ is the expectations operator conditioned on the information set Ω_t . Admati *et al.* (1986) argued that superior ability of analysts was due to superior information. Relying on this argument, therefore, the quantities I_{jt} and S_{jt} must be strictly greater than zero if analysts have industry identification and stock selection ability.

3.1.3 Market timing

Let $E[\tilde{r}_{Mt}]$ be the unconditioned expected rate of return on the market portfolio. From equation (1), the return component $(\alpha_j + \beta_j \tilde{r}_{Mt})$ of \tilde{r}_{jt} which is attributed to the market's movement can be decomposed into an expected part $(\alpha_j + \beta_j E[\tilde{r}_{Mt}])$ and an unexpected part $\beta_j \tilde{\xi}_t^M$. That is,

$$\alpha_j + \beta_j \tilde{r}_{Mt} = (\alpha_j + \beta_j E[\tilde{r}_{Mt}]) + \beta_j \tilde{\xi}_t^M \quad (8)$$

where $\tilde{\xi}_t^M = (\tilde{r}_{Mt} - E[\tilde{r}_{Mt}])$ and by iterative expectations $E[\tilde{\xi}_t^M] = 0$. The realisation of $(\alpha_j + \beta_j \tilde{r}_{Mt})$ from equation (8) is:

$$\alpha_j + \beta_j r_{jt}^M = (\alpha_j + \beta_j E[\tilde{r}_{Mt}]) + \beta_j \xi_t^M \quad (9)$$

where $\xi_t^M = (r_{jt}^M - E[\tilde{r}_{Mt}])$. Since $E[\tilde{\xi}_t^M] = 0$, it follows that $\beta_j E[\tilde{\xi}_t^M] = 0$. Furthermore, from equation (1), β_j summarises the sensitivity of \tilde{r}_{jt} with \tilde{r}_{Mt} . So, being able to realise the return $\beta_j \xi_t^M$ indicates the fact that the investor understands the co-varying nature of \tilde{r}_{jt} with \tilde{r}_{Mt} and is able to time when r_{Mt} deviates from $E[\tilde{r}_{Mt}]$. Fama (1972) proposed $\beta_j \xi_t^M$ to be the indication of analysts' market timing ability. Next, let M_{jt} be the expectation of $\beta_j \tilde{\xi}_t^M$ conditioned on Ω_t , $\beta_j E[\tilde{\xi}_t^M | \Omega_t]$. It must be that M_{jt} is strictly greater than zero if analysts have market timing ability.

3.1.4 Measuring investment value

The analysis in the preceding section suggests that, by following analysts' recommendations, an investor can earn abnormal returns of M_{jt} , I_{jt} , and S_{jt} resulting from analysts' market timing, industry identification and stock selection ability respectively. Let V_{jt} be the investment value of analysts' recommendation. V_{jt} is the sum of abnormal returns M_{jt} , I_{jt} , and S_{jt} generated by analysts' ability. That is,

$$V_{jt} = M_{jt} + I_{jt} + S_{jt}. \quad (10)$$

If the analysts' recommendations on stock j at time t have investment value, then V_{jt} must be strictly greater than zero.

3.2 Estimation and Test

Since expectations are not observed, this study will have to infer analysts' ability from the realisation of return on stock j . With respect to the MIS survey, the investors could obtain the recommendations and make their investment on Monday, Tuesday or Wednesday.

V_{jt} is the recommendation value on day t of stock j , conditioned on analysts' ability. From the relationship in equation (10) and the definitions of M_{jt} , I_{jt} , and S_{jt} , the recommendation value (V), unconditioned on stocks or time, is the average of $\beta_j \xi_M + \gamma_j \xi_s + \xi_j$ across all recommended stocks and survey weeks. In a similar way, the market timing, industry identification and stock selection ability can be inferred from M , I , and S , respectively, unconditioned on stocks and survey weeks.

In computing M , I , S , and V and testing for their significance, two problems arise. First, the parameters which govern stock returns are not known to the study. So, they must be estimated from the data. Second, as Thompson (1985) noted, ξ_{jt} will be correlated among stocks recommended and ξ_{st} will be correlated among industries in the same week, even though they and ξ_{Mt} are not serially correlated under the market model.

This study solves the first problem by setting a period covering Monday to Wednesday as the recommendation period and using the returns on days -145 to -26 (120 daily observations) relative to the recommendation of Monday to estimate the parameters. The mean return on the market portfolio is assumed to be constant and equal to μ_M . μ_M is computed from the sample market returns by:

$$\mu_M = \frac{1}{120} \sum_{t=-145}^{-26} r_{Mt}. \quad (11)$$

ξ_{Mt} and its standard deviation σ_{ξ_M} are computed by:

$$\xi_{Mt} = r_{Mt} - \mu_M \quad (12)$$

$$\sigma_{\xi_M} = \sqrt{\frac{\sum_{t=-145}^{-26} \xi_{Mt}^2}{120}}. \quad (13)$$

This study computes ξ_s , ξ_j and γ_j , using a three-step procedure. First, ξ_s is set to the residual of an OLS regression of r_s on r_M and ξ_j is set to the residual of an OLS regression of r_j on r_M . The regressions employ the data from days -145 to -26 . Second, γ_j is the slope coefficient in the regression of ξ_j on ξ_s and, finally, ξ_j is set to the residual of this regression. The covariance matrices Σ_s of ξ_s and Σ_j of ξ_j can be computed by:

$$\Sigma_s = \frac{\sum_{t=-145}^{-26} \zeta_{st} \zeta_{st}'}{120} \quad (14)$$

$$\Sigma_j = \frac{\sum_{t=-145}^{-26} \zeta_{jt} \zeta_{jt}'}{120} \quad (15)$$

where ζ_{st}' and ζ_{jt}' are matrices of ξ_s and ξ_j of the recommended stocks.

This study relies on the statistical properties of ξ_M , ξ_s and ξ_j to solve the second problem. Note that these variables are distributed normally. Hence, the following statistics M^* , I^* , S^* and V^* , corresponding to M , I , S and V , will be asymptotically distributed as standard normal variables under the null hypotheses. The statistics are computed with respect to Thompson (1985).

$$V_t^* = \frac{M_t^* + I_t^* + S_t^*}{\sqrt{3}} \quad (16)$$

$$M_t^* = \frac{\sum_{\tau=1}^T \frac{\sum_{j=1}^{n_\tau} \beta_j \xi_{Mt}}{\sigma_{\xi M} \sqrt{\sum_{j=1}^{n_\tau} \beta_j^2}}}{\sqrt{N}} \quad (17)$$

$$I_t^* = \frac{\sum_{\tau=1}^T \frac{\sum_{j=1}^{n_\tau} \gamma_j^s \xi_{st}}{\sqrt{\Gamma' \Sigma_s \Gamma}}}{\sqrt{N}} \quad (18)$$

$$S_t^* = \frac{\sum_{\tau=1}^T \frac{\sum_{j=1}^{n_\tau} \xi_{jt}}{\sqrt{t' \Sigma_j t}}}{\sqrt{N}} \quad (19)$$

where Γ and ι are $(n_t \times 1)$ vector of γ_s 's and 1 's respectively. n_t is the number of recommended stocks in week τ . $N (= n_1 + n_2 + \dots + n_t)$ and T are the numbers of all recommended stocks and recommendation weeks in the sample respectively. Once the statistics M^* , I^* , S^* and V^* are obtained, it is straightforward to test for the brokers' ability.

4 THE RESULTS

4.1 Recommendation Value for Various Holding Periods

Panel 2.1 in Table 2 reports the investment value of recommended stocks for the full sample period. MIS surveyed stock recommendations from Monday to Wednesday each week. The recommendations were either for a one-week holding period or for a one-month holding period. So, the investors could receive the recommendations on Monday, Tuesday or Wednesday and bought the recommended stocks on that day. Thereafter, they held the stocks for the holding periods being recommended. This study computes the recommendation value for recommended holding periods, assuming that the investors invest in the stocks based on the recommendations made. The one-week recommendation value is a five-day cumulative value and the one-month recommendation value is a 25-day cumulative value, starting from the recommendation of Monday, Tuesday and Wednesday. Their *t*-statistics are presented in parentheses⁶ and the number of sample stocks in each group is shown in column one of Table 2.

For all the recommended stocks, the recommendation value was significant at 1.181 (0.983) per cent for a one-week holding period if the investors made the investment on Monday (Tuesday). However, the recommendation value was insignificant if the investors invested in the stocks later on Wednesday. The table also examines the recommendation value for a one-month holding period. It is interesting to find that the one-month recommendation value was negative regardless of the day the investment was made. Moreover, if the investment were made on Tuesday or Wednesday, the negative return was large and significant.

It should be noted that the stocks might be recommended for a short-term, one-week holding period or a medium-term, one-month holding period. For these stocks, only one-week and one-month recommendation values are relevant respectively. It is found that the short-term holding stocks performed according to the recommendations. They gave a high recommendation value of 1.626 (1.352) per cent if the investment was made on Monday (Tuesday). This recommendation value was enough to cover a one per cent round-trip brokerage fee. However, the recommendation value of 0.076 per cent was positive but small and insignificant, if the investment was made on Wednesday.

The medium-term holding stocks performed poorly. Their one-month recommendation value was significantly negative. So, the investors incurred a large loss from a falling stock price plus the brokerage fee if they believed the analysts' recommendations and invested accordingly for one month. It is interesting to find that the medium-term stocks gave a significant recommendation value if they were bought on Monday and held only for one week. Yet, their recommendation value was 0.854 per cent and much smaller than that of the short-term holding stocks.

⁶ The *t*-statistics are computed by noting that the variance of the D-day cumulative return is the sum of variances of individual returns in that D-day period.

Table 2
Recommendation value for holding periods

The table reports holding-period returns on the recommended stocks. Each week from Monday to Wednesday, MIS sampled approximately 15 brokers and sub-brokers and asked them to recommend five stocks for a short-term, one-week holding period and five stocks for a medium-term, one-month holding period. The one-week (one-month) return is the sum of recommendation value (V) for five (twenty five) days starting from a certain recommendation day. *t*-statistics are in parentheses. The number of stocks being considered in each group is in column one. The 0.01, 0.05 and 0.10 levels of significance are denoted by ***, ** and * respectively.

Panel 2.1 Full sample from 7 March 1994 to 3 March 1997

Stocks	One-week recommendation value			One-month recommendation value		
	Starting from			Starting from		
	Monday	Tuesday	Wednesday	Monday	Tuesday	Wednesday
Rec. stocks 7025	0.01181*** (3.36639)	0.00983** (2.47588)	0.00011 (0.21241)	-0.00795* (-1.68073)	-0.01280** (-2.51451)	-0.02211*** (-3.69547)
Short-term 4675	0.01626*** (4.22226)	0.01352*** (3.09943)	0.00076 (0.03204)	-0.00433 (-1.19677)	-0.01040** (-2.16399)	-0.02264*** (-3.51534)
Med-term 4851	0.00854** (2.51562)	0.00749** (1.95799)	-0.00023 (-0.32571)	-0.00970* (-1.87332)	-0.01383** (-2.61245)	-0.02174*** (-3.70032)
≥ 5 recom. 1280	0.01526** (3.64226)	0.01330** (3.02030)	0.00123 (0.09441)	-0.00676 (-1.49807)	-0.01415** (-2.50619)	-0.02484*** (-3.67036)
Both lists 2520	0.01274*** (3.36096)	0.01139*** (2.62979)	0.00014 (0.20747)	-0.00731 (-1.53802)	-0.01272** (-2.43082)	-0.02403*** (-3.72227)

Panel 2.2 First sub-sample from 7 March 1994 to 22 January 1996

Stocks	One-week recommendation value			One-month recommendation value		
	Starting from			Starting from		
	Monday	Tuesday	Wednesday	Monday	Tuesday	Wednesday
Rec. stocks 4933	0.01108*** (2.65440)	0.01126** (2.52189)	0.00093 (0.22811)	-0.00113 (-0.06086)	-0.00424 (-0.22852)	-0.01231 (-0.66613)
Short-term 3256	0.01635*** (3.19066)	0.01615*** (3.00527)	0.00295 (0.59152)	0.00515 (0.41680)	0.00079 (0.06442)	-0.00993 (-0.81479)
Med-term 3409	0.00749* (1.79861)	0.00806* (1.84327)	-0.00024 (-0.06062)	-0.00341 (-0.34674)	-0.00600 (-0.61406)	-0.01271 (-1.32011)
≥ 5 recom. 901	0.01711*** (3.09120)	0.01600*** (2.85168)	0.00345 (0.66475)	0.00500 (0.48764)	-0.00132 (-0.12948)	-0.01143 (-1.15303)
Both lists 1751	0.01306*** (2.69730)	0.01334*** (2.63614)	0.00186 (0.40135)	0.00324 (0.31537)	-0.00092 (-0.09013)	-0.01048 (-1.04812)

Panel 2.3 Second sub-sample from 29 January 1996 to 3 March 1997

Stocks	One-week recommendation value			One-month recommendation value		
	Starting from			Starting from		
	Monday	Tuesday	Wednesday	Monday	Tuesday	Wednesday
Rec. stocks 2092	0.01306** (2.27880)	0.00632 (1.02248)	-0.00209 (-0.25715)	-0.02134 (-1.31654)	-0.02969* (-1.84121)	-0.04163*** (-2.57785)
Short-term 1419	0.01578 (1.62789)	0.00750 (0.76414)	-0.00428 (-0.39130)	-0.02309 (-1.11450)	-0.03265 (-1.58257)	-0.04797** (-2.32234)
Med-term 1442	0.01030** (2.01060)	0.00585 (0.87153)	-0.00060 (-0.07667)	-0.02147 (-1.34567)	-0.02863* (-1.80082)	-0.03926** (-2.47016)
≥ 5 recom. 379	0.01149*** (2.75334)	0.00715 (1.60167)	-0.00391 (-0.95420)	-0.02969 (-1.59781)	-0.03923** (-2.11388)	-0.05145*** (-2.78384)
Both lists 769	0.01207 (0.96473)	0.00694 (0.56494)	-0.00377 (-0.30214)	-0.02762 (-1.12229)	-0.03562 (-1.44973)	-0.05067** (-2.06487)

The stocks with multiple recommendations are interesting. There are at least two reasons to suggest that they could generate a high recommendation value in a short run. The first reason is a price pressure effect. Scholes (1972) pointed out that the supply of stocks was highly inelastic in the short run. So, large buying or selling orders might pressure stock prices to deviate from their true values. However, as the trading interval was lengthened and more stocks could fulfill the orders, the stock prices would revert to their true values. If there was extra price pressure, the stocks with multiple recommendations should have a high recommendation value in the short term.

The second reason is the increased speed of information dissemination. Multiple recommendations can improve the speed of information dissemination if they are based on the correct information and lead to stock trading (Lakonishok *et al.* 1992). Brennan *et al.* (1993) proposed that the speed of price adjustment to new information was increasing with the number of stock analysts. This proposition was tested and could not be rejected by the US data from January 1977 to December 1988. So, if the prices adjusted more quickly with respect to multiple recommendations, a short-term holding return could be high.

This study examines two cases in which stocks received multiple recommendations. The first case considers stocks which received recommendations from five or more brokers. The second case considers stocks which were recommended for both short- and medium-term holding periods. From Panel 2.1, it is found that the results for the stocks in the two groups are similar to those of the average recommended stocks. Hence, concentrating investment in the popular stocks with multiple recommendations cannot give higher returns than the average recommended stocks.

4.2 Explaining Recommendation Value

The results in Panel 2.1 of Table 2 lead to two important questions. The first relates to how the significant recommendation value was created for the short-term holding period. The second is why the value was negative if the investors held the recommended stocks for longer periods such as one month. This result remains consistent even when those stocks were recommended for a one-month holding period.

Table 3 reports the recommendation value (V) and its components: market timing ability (M), industry identification ability (I) and stock selection ability (S) for all the recommended stocks.⁷ Figures 2.1 to 2.4 plot the corresponding cumulative values. The analysis covers days -1 to -25 before Monday of the recommendation week, Monday to Wednesday during which the recommendations were surveyed, and days 1 to 60 after Wednesday. Even though the one-month holding period is 25 days after the recommendation of Wednesday, the analysis of a longer, 60-day period will help to detect evidence of brokers' ability.

We first consider the question of why the one-month holding value was negative. The plot of the SET index in Figure 1 suggests that the market was bearish during the sample period. When the market was bearish, the deviation of the market return from its average during days -120 to -26 tended to be negative. From Table 1, the recommended stocks have betas much greater than 1. Since M is beta times the deviation, M has to be negative as in column three. From Figure 2.2, over time the cumulative M grew larger in a negative direction. On days subsequent to the recommendation of Wednesday, it could dominate the other two components and determine the direction of the recommendation value. The fact that the brokers and sub-brokers recommended high-beta stocks especially for a one-month holding period in a bearish market leads this study to conclude that they did not understand the nature of their stocks and that they did not possess market timing ability.

We now consider the question as to how a short-term recommendation value was created. From column two, it is found that the recommendation value was positive, large and significant on Monday and Tuesday, but fluctuated around zero on Wednesday and days 1 to 5. So, it is the significant V 's on Monday and Tuesday that explain the significant short-term holding recommendation value.

Further investigation reveals that the significant recommendation value was due to the S component. Its values were 0.253 per cent, 0.399 per cent and 0.192 per cent on Monday, Tuesday, and Wednesday respectively. From Table 3 and Figure 2.4, the positive S followed a series of positive S s on the days before the recommendation period. However, S tended to be negative after Wednesday. The downward trend never reversed.

An upward trend of the cumulative S before the recommendation Monday suggests that the brokers might have followed a trend-chasing strategy. It is consistent with the result in Table 1 in that the recommended stocks had a higher

⁷ Since the results are very similar in all the cases, this study reports those for all the recommended stocks only. Readers may obtain the results for the other cases from the author.

Table 3
Decomposition of recommendation value for all the recommended stocks

The table reports value of brokers' recommendations. Each week from Monday to Wednesday, MIS sampled approximately 15 brokers and sub-brokers and asked them to recommend five stocks for a short-term, one-week holding period and five stocks for a medium-term, one-month holding period. The recommendation period covers Monday, Tuesday and Wednesday during which MIS conducted its survey. The recommendation value is measured by the return deviation from its average from days -145 to -26. This study considers the recommendation value (V) as being explained by brokers' market timing ability (M), industry identification ability (I) and stock selection ability (S). *t*-statistics are in parentheses. The 0.01, 0.05 and 0.10 levels of significance are denoted by ***, ** and * respectively.

Day	V	M	I	S
-25	-0.00188 (-1.02384)	-0.00242 (-1.61632)	-0.00011 (-1.01789)	0.00065 (1.51438)
-20	-0.00124 (-0.84542)	-0.00233 (-1.62451)	-0.00011 (-1.62647)	0.00120** (2.21394)
-15	-0.00115 (-0.84696)	-0.00224 (-1.71987)	-0.00019** (-2.01916)	0.00128** (2.39328)
-10	0.00130 (0.65044)	0.00021 (0.00061)	-0.00004 (-0.23112)	0.00113** (2.00622)
-5	0.00057 (0.28699)	-0.00082 (-0.95866)	0.00005 (0.97951)	0.00134*** (2.75495)
-4	0.00181 (0.70108)	-0.00016 (-0.47817)	0.00011 (1.35740)	0.00186*** (3.76270)
-3	-0.00024 (-0.14914)	-0.00168 (-1.27518)	0.00006 (0.72938)	0.00139*** (2.99127)
-2	0.00220* (1.64803)	0.00133 (1.12401)	0.00010* (1.80418)	0.00078 (1.60387)
-1	-0.00459*** (-2.92362)	-0.00461*** (-3.24031)	-0.00024*** (-3.14561)	0.00026 (0.17741)
Monday	0.00367** (2.82167)	0.00104 (0.64823)	0.00011 (1.59759)	0.00253*** (4.40663)
Tuesday	0.00623*** (3.62055)	0.00207 (1.13608)	0.00017* (1.77061)	0.00399*** (6.15937)
Wednesday	-0.00015 (-0.27857)	-0.00211* (-1.85329)	0.00003 (0.06378)	0.00192*** (3.82066)
+1	0.00139 (0.68719)	0.00174 (1.05199)	0.00013* (1.93548)	-0.00048 (-1.08397)

Table 3 (continued)

Day	V	M	I	S
+2	0.00067 (0.67663)	0.00000 (-0.03750)	0.00004 (0.51042)	0.00062 (1.02906)
+3	0.00169 (0.83044)	0.00110 (0.62414)	0.00009 (1.04243)	0.00051 (0.68419)
+4	-0.00348** (-2.39066)	-0.00263* (-1.83581)	0.00001 (0.72350)	-0.00086 (-1.35643)
+5	0.00140 (0.58310)	0.00204 (1.35592)	0.00008 (1.01431)	-0.00072* (-1.93213)
+10	0.00041 (0.04902)	0.00091 (0.60084)	0.00006 (0.36243)	-0.00056 (-1.13555)
+15	-0.00006 (-0.14614)	0.00028 (0.12980)	0.00003 (0.40262)	-0.00037 (-0.78360)
+20	-0.00145 (-1.02776)	-0.00071 (-0.51555)	0.00005 (0.45804)	-0.00079 (-1.59820)
+25	-0.00128 (-0.94297)	-0.00170 (-1.25347)	-0.00006 (-0.85522)	0.00048 (0.74322)
+30	-0.00058 (-0.12086)	-0.00017 (0.28499)	0.00011 (0.98885)	-0.00053 (-0.93462)
+45	-0.00129 (-0.94347)	-0.00122 (-0.88564)	-0.00007 (-0.47534)	0.00000 (-0.01790)
+60	-0.00115 (-0.93030)	-0.00052 (-0.49315)	-0.00003 (-0.03606)	-0.00060 (-1.29405)

average return than that of other stocks. S jumped during the three-day recommendation period, but fell afterward. After Wednesday, the cumulative S converged toward zero. So, the rising cumulative S before the recommendation week cannot be interpreted as reflecting good news about the recommended stocks being released gradually to the market. Nor can the jump in S during the recommendation period be interpreted as reflecting an increasing speed of information dissemination induced by the recommendations. The downward price drift after the recommendation period is similar to what was found for the US market by Desai and Jain (1995) and Stickle (1995).

4.3 Existence of Industry Identification Ability

The fact that brokers recommended high-beta stocks for a medium-term holding period in a bearish market suggests that they had no market timing ability. Although the recommended stocks gave a significant S value on Monday to

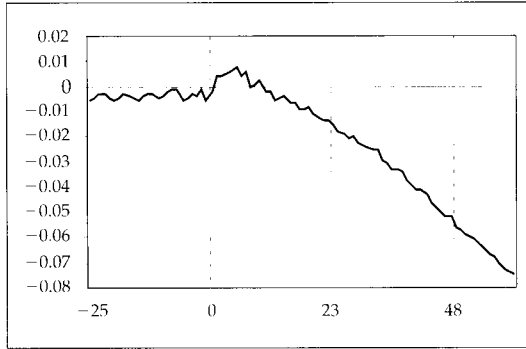


Figure 2.1 Recommendation value

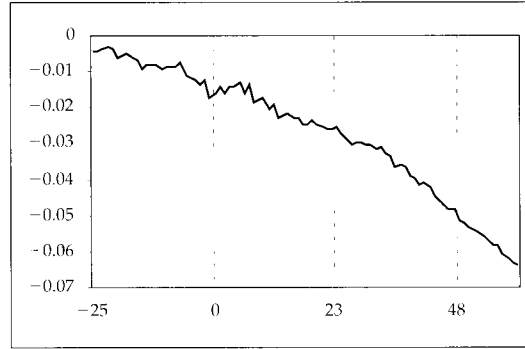


Figure 2.2 Market timing ability

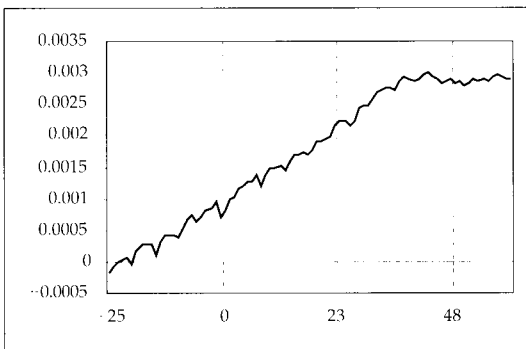


Figure 2.3 Industry identification ability

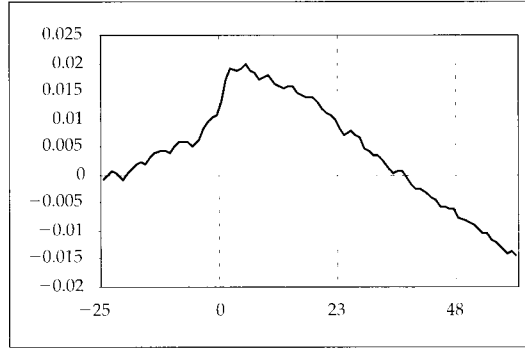


Figure 2.4 Stock selection ability

Figure 2 Cumulative returns on all the recommended stocks

The figures plots cumulative stock returns attributable to recommendation value (Figure 2.1), market timing ability (Figure 2.2), industry identification ability (Figure 2.3) and stock selection ability (Figure 2.4). Brokers' recommendations were surveyed from Monday to Wednesday of the week. Day 0 represents Monday on which the recommendations were made. Day $-j$ is relative to Monday while day $+k$ is relative to Wednesday. $J = -1, -2, \dots, -25$ and $k = +1, +2, \dots, +60$.

Wednesday of the recommendation week, the fact that the S value was not permanent suggested that the brokers could not identify good stocks, hence showing no stock selection ability. The question is whether the stock recommendations contained any correct information at all.

The results from column four of Table 3 and Figure 2.3 suggest that the recommended stocks were from superior performing industries. Despite its small size, the cumulative I gradually increased from day -25 before the recommendation of Monday. The upward trend continued until day 50 before it was stable and

fluctuated around 0.28 per cent. The permanent I value of the recommended stocks implies that the brokers have industry identification ability. In Thailand, stock analysts concentrate their interest on a few stocks in a certain industry. This practice is common in the US as well. As Womack (1996) pointed out, these analysts were industry specialists rather than stock market generalists. The industry specialists should possess industry identification ability and know the opportune time to invest in their industries.

Groth *et al.* (1979) pointed out that brokers' recommendations could improve the speed of information dissemination, while Dimson and Marsh (1984) suggested that the information in the recommendation was impounded into the prices by the buy and sell of recommended stocks. For Thailand, the permanent I value implies that the analysts made the correct recommendations about the corresponding industries. However, it took the market about 50 days to fully absorb all the information. This fact points to inefficiency of the market.

4.4 Reasons for Recommending Short-Term and Medium-Term Holding Stocks

Stickle (1995) pointed out that brokers had different reasons for different types of recommendations. Although previous studies separated recommendations into specific types such as buy and sell (e.g., Stickle 1995), add-to-buy (sell) list and delete-from-buy (sell) list (e.g., Womack 1996), none had examined the buy recommendations for different holding periods. This study will be the first to examine these recommendations.

Brokers and sub-brokers are expected to give recommendations that benefit their customers. The reason for recommending a short-term holding period for certain stocks must be based on their belief that those stocks would generate a high return over that one-week period. Similarly, they recommended a medium-term holding period for some other stocks because they believed that these stocks would take more time to reveal their good performance. If these reasons are correct, the short-term holding stocks should perform better than the medium-term holding stocks in a short run, but the medium-term holding stocks should perform better in a longer run.

From Panel 2.1 in Table 2, we found that the one-week recommendation value of the short-term holding stocks was almost two times that of the medium-term holding stocks. This finding supports the fact that brokers recommended short-term holding stocks because of their better short-term performance. Furthermore, from Table 3 and Figure 3.1, the better performance could be attributed to a stronger response of the S component of the recommendations.

The performance of medium-term holding stocks was not better than that of short-term holding stocks. However, the analysis in Section 4.3 suggests that stock analysts were industry specialists and that the market took a long time to incorporate good news of the recommended industries. Hence, brokers may recommend medium-term holding stocks because of the superior performance of their industries. If this explanation is correct, then the cumulative I of the medium-term holding stocks must be higher than that of the short-term holding stocks.



Figure 3.1 Stock selection ability

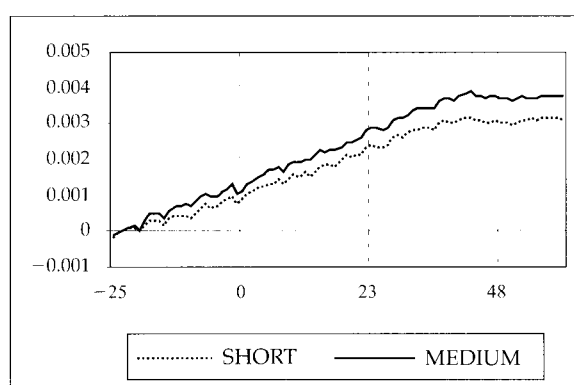


Figure 3.2 Industry identification ability

Figure 3 Comparison of cumulative returns on short-term and medium-term holding stocks

Figure 3.2 plots the cumulative I s of short- and medium-term holding stocks. From days -25 to $+60$, the cumulative I of the medium-term holding stocks is always higher than that of the short-term holding stocks. Conditioned on a Monday investment, the one-month I returns (t -statistics) of the short- and medium-term stocks are 0.164 per cent (3.680) and 0.183 per cent (3.113) respectively. These findings support the fact that brokers recommended medium-term holding stocks because of their better industry performance.

4.5 Did Recommendations Reach Institutional Investors First?

Despite their large aggregate trading value, retail investors have smaller accounts than local and foreign institutional investors. This means that retail investors were less important to brokers than institutional investors. Since the recommendations

could not reach all investors at the same time, did brokers offer the recommendations to institutional investors first? This issue was also raised by Khanthavit (1998) who observed that the portfolio adjustment of retail investors lagged that of institutional investors by one day.

The results in column two of Table 3 suggest that it is unlikely. The recommendation value V of -0.459 per cent on day -1 was significantly negative. On days -2 to -5 , it was small and not significant. Even if the brokers' recommendations were ready for dissemination before Monday, these recommendations would have hurt the investors who received them early and invested accordingly. The finding leads this study to conclude that brokers did not reserve their recommendations for institutional investors first.

If brokers did not reserve their recommendations for institutional investors first, how could institutional investors make an early adjustment of their portfolios? An explanation could be that there were far more retail investors than institutional investors. Even though marketing officers started at the same time to telephone the investors in both groups to offer the recommendations, it would have taken more time for the recommendations to reach all the retail investors. As a result, their aggregate portfolio showed lagged adjustment to information.

4.6 Is Recommendation Value Driven by the Day-of-the-Week Effect?

For Thailand, Chan, Khanthavit and Thomas (1996) reported that the market exhibited the day-of-the-week effect for returns during May 1975 to December 1991. In that period, the market had significantly positive returns on Thursday and Friday, while the returns on Monday to Wednesday were not different from zero. Due to the nature of the MIS survey, this study only examines the recommendation value on Monday, Tuesday and Wednesday of the recommendation week. Since the recommendation value is in effect the average Monday, Tuesday and Wednesday returns of the recommended stocks, it is important to ensure that these higher returns are not due to the day-of-the week effect.

Table 4 reports the average return on the SET index portfolio on days of the week from 7 March 1994 to 3 March 1997. The SET index portfolio is a value-weighted portfolio of all stocks listed on the Stock Exchange of Thailand. t -statistics are in parentheses. There is evidence to suggest that the day-of-the-week effect existed in the sample period. The average Wednesday and Friday returns were significantly negative, but the Monday, Tuesday and Thursday returns were not different from zero. The day-of-the-week effect could explain the low recommendation value V on Friday and the poor cumulative value if the investment had been made on Wednesday. However, because the Monday and Tuesday returns were not different from zero, this study concludes that the significant recommendation values on Monday and Tuesday were not caused by the day-of-the-week effect.

Table 4
Returns on days of week

The table reports the average returns on days of week from 7 March 1994 to 3 March 1997 (734 days). *t*-statistics are in parentheses. The 0.01 and 0.05 levels of significance are denoted by *** and ** respectively.

Day of week	Average return	Number of observations
Monday	-0.00075 (-0.97863)	148
Tuesday	-0.00052 (-0.51333)	149
Wednesday	-0.00217** (-2.48447)	150
Thursday	-0.00053 (-0.60971)	148
Friday	-0.00491*** (-4.39923)	139

4.7 The Subperiod Results

Figure 1 showed that the Thai stock market was more stable during the first two-thirds of the sample period. However, it declined in the latter one-third of the period. In order to ensure that the results are not biased against the brokers' recommendation because of the falling market in the later subperiod, this study analyzes the recommendation value for various holding periods, over two subperiods. The first subperiod covers two thirds of the period from 7 March 1994 to 22 January 1996 (100 recommendation weeks) during which the market was more stable. The second subperiod from 29 January 1996 to 3 March 1997 (49 recommendation weeks) covers the period of a falling market. The results are reported in Panels 2.2 and 2.3 of Table 2 respectively.

From the table, the results in the two subperiods are very similar to those of the full period, indicating that the results for the full period are not biased. The one-week recommendation values were positive and significant for the Monday and Tuesday investment, but they were not different from zero for the Wednesday investment. The one-month values were negative for the two subperiods, although they were significant only in the later subperiod.

5 CONCLUSIONS

The study examined the price behavior of stocks recommended by Thai stock analysts. It found that there was a positive abnormal return on recommended stocks

on Monday and Tuesday in the recommendation week but not on the following days. If the investors had followed the recommendations, they would have benefited only if they had received the recommendation early on Monday or Tuesday and invested in the stocks only for a week. Holding the stocks for a longer period would generate a loss. A closer examination revealed that the brokers and sub-brokers did not exhibit market timing or stock selection ability. Nonetheless, there was evidence to suggest that these brokers and sub-brokers were industry specialists who had industry identification ability.

This study has important policy implications. First, discount brokers should be introduced as an alternative to full-service brokers. The study found that stock recommendations had value only when investors received them early. There are a large number of retail investors in the market. As brokers have to telephone them in turn to offer the recommendations, some investors will receive the recommendations late. Hence, they could not benefit from the recommendations, but they have to pay the same brokerage fees as those investors, especially institutional investors, who received the recommendations earlier. For those investors who have a limited chance to receive the recommendations early or those who choose not to use the recommendations, discount brokers are their preferred choice.

Second, profitable trading strategies can be devised with respect to the recommendations. If the investors are certain that they receive the recommendation early on Monday or Tuesday, they should take a long position on the recommended stocks. However, regardless of the recommended investment horizon, the investors should unwind their position within a week to take profit.

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