

Investors Attention Properties Regarding Target Prices, PE
Ratios and Their Investment Implications



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An Independent Study Submitted in Partial Fulfillment of the
Requirements

for the Degree of Master of Science in Finance

Department of Banking and Finance

FACULTY OF COMMERCE AND ACCOUNTANCY

Chulalongkorn University

Academic Year 2019

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สาขาวิชาการเงิน ภาควิชาการธนาคารและการเงิน
คณะพาณิชยศาสตร์และการบัญชี จุฬาลงกรณ์มหาวิทยาลัย
ปีการศึกษา 2562
ลิขสิทธิ์ของจุฬาลงกรณ์มหาวิทยาลัย

Independent Study Title Investors Attention Properties Regarding Target
Prices, PE Ratios and Their Investment
Implications
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Accepted by the FACULTY OF COMMERCE AND
ACCOUNTANCY, Chulalongkorn University in Partial Fulfillment of
the Requirement for the Master of Science

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ภูมิพงษ์ จีระพันธุ์ : ราคาเป้าหมาย อัตราส่วนพีอี และคุณสมบัติที่เกี่ยวข้องของการให้ความสำคัญต่อสองสิ่งนี้ของนักลงทุน. (Investors Attention Properties Regarding Target Prices, PE Ratios and Their Investment Implications) อ.ที่ปรึกษาหลัก : ศศ. ดร.รุ่งเกียรติ รัตนบานชื่น

Several studies have studied the return and liquidity characteristics of target price and P/E ratio trading strategy. Many previous literatures found that investors tend to pay attention to stocks with high target price expected return (TPER) and low P/E stocks. This paper tries to study further from those the previous literatures so it will examine whether investors in Thailand exhibit the attention characteristics to target price more than P/E ratio. Moreover, this paper finds investment implication of creating abnormal returns from TPER trading strategy in Thailand stock market.

In this study, several approaches have been applied which are Fama-French (1993) to capture the abnormal stock return, Amihud (2002)'s illiquidity ratio and double sorted portfolios to study stocks' liquidity premium and control for liquidity factor, respectively.

This paper found that using the TPER trading strategy can outperform P/E ratio trading strategy in the first month after the TPER information is released in each year. Moreover, only high TPER stocks have liquidity premium but the liquidity premium is not a factor that make TPER outperform P/E ratio trading strategy. Finally, this paper finds that TPER trading strategy can provide abnormal return for investors even after controlling for size, value and liquidity factor.

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6182090726 : MAJOR FINANCE

KEYWORD

D:

Poomipong Chirabandhu : Investors Attention Properties Regarding Target Prices, PE Ratios and Their Investment Implications. Advisor: Asst. Prof. ROONGKIAT RATANABANCHUEN, Ph.D.

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Field of Study: Finance

Student's Signature

Academic Year: 2019

Advisor's Signature

Year:

.....

ACKNOWLEDGEMENTS

I'd like to thank my advisor, Assistant Professor Roongkiat Ratanabanchuen, Ph.D., for his kind supports advice. Also, I'd like to the committees, Narapong Srivisal, Ph.D., and Tanawait Sae-Sue, Ph.D. for their kind comments and suggestions. Moreover, I'd like to thank my boss, Sunthorn Thongthip for his kind support, encouragement, and understanding. Finally, to my family, loved ones, and my dearest friend, Palat Lertpitchapong.

Poomipong Chirabandhu



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1. INTRODUCTION

Investor attention has implications in the financial markets in many aspects. It can predict market activity, investors trading behavior, and asset returns. The attention effect is associated with higher price, and lower future returns. However, when it comes to the liquidity premium, only the asset that investors pay attention to have the liquidity premium. For asset with no attention, despite their illiquidity, they provide not statistically significance liquidity premium. This is because investors barely trade stocks that they pay no attention to. As a result, their prices remain stable all the time and don't provide liquidity premium. Moreover, attention also have relationship with abnormal returns. That is, the abnormal returns are highest for stocks in the period that attention arise ((Merton 1987, Amihud 2002).

In the US, investors pay attention to price-earnings (P/E) ratios far more than any other measure of fundamental value. As a result of the attention effect, P/E ratio trading strategy provide the implications of all the attention effects (Moore 2019).

However, in Thailand, the stock market has higher proportion of retail investors and Google search volume for target price in Thailand is 1.3 times greater than P/E ratio. This indicates that retail investors may be less sophisticated than the overall US investors. Analyzing P/E ratio might be too difficult for retail investors in Thailand. Moreover, institutional investors in Thailand also trade according to analysts' recommendation, which also derived from the target price (Phornchaicharoenkij, 2017).

Therefore, this paper comes up with the research question that whether investors in Thailand pay more attention to target price more than P/E ratio and what is the investment implication of it. The research objective is to observe the characteristics of returns, and liquidity premium and abnormal returns of two trading strategies: using target price and using P/E ratio.

The contributions of this paper are as following. There are previous studies that compare returns and attention of various value trading strategies (Porta, Lakonishok et al. 1997). On the other hand, there are previous studies that research about the return and performance of trading strategy using target price (Ying, Kong et al. 2015, Welagedara, Deb et al. 2017). This paper is the first paper to compare the attention effect and returns between value trading strategy using P/E ratio and target price. Moreover, future study can be research in other stock markets whether it is the case that when there are more retail investors, they tend to pay attention to easier financial metrics as it is the case for Thailand and determined the investment implication of these findings.

2. LITERATURE REVIEW

Investor Attention: Concept and Theory

The study about investor attention is important because investor attention is related with stock market activity, investors trading behavior, and stock returns (Ang, Hodrick et al. 2006, Ang, Hodrick et al. 2009). The proof of attention can be done by observe that that stocks have higher price, higher trading volume and lower future returns. This is because investors overreact to the stocks that they pay attention to and make an excessively trade and push the price of the stocks up. The excessive trading creates higher trading volume and the higher price form those trades make their future returns lower (Merton 1987).

Investor Attention in US Stock market

In US stock market, investors pay most attention to P/E ratio because investors know that stocks with low P/E ratio is most likely undervalued. The stocks with low P/ E ratio that investors pay attention to exhibit the characteristics as followings:

The return characteristics

1. Low P/E stocks have higher price than low P/B stocks at first and make their future return lower. The methodology used is comparing performance of P/E trading strategy with P/B trading strategy. P/E trading strategy outperform at first and underperform later. This is proven by forming the quintile portfolios of P/E and P/B. Then, the P/E trading strategy is to long stocks in lowest P/E quintile and short stocks in highest P/E quintile. The P/B trading strategy is also to long stocks in the lowest P/B quintile and short stocks in the highest P/B quintile. Then, calculate the cumulative returns of P/E and P/B strategy. The finding shows that P/E strategy outperforms at first, and then underperform later (Moore 2019). This is because investors overreact to low P/E stocks at first. They buy low P/E stocks and push low P/E stock prices up. After that, when the overreaction decrease overtime, low P/E stock prices drop accordingly (Merton 1987, Moore 2019).
2. Abnormal returns of P/E trading strategy are high at first, and then abnormal returns decrease overtime. The methodology used is running an asset pricing model to find abnormal returns of P/E trading strategy, and then observe the trend of abnormal returns that decrease overtime (Da, Engelberg et al. 2011). This is because when investors overreact to low P/E stocks, they excessively buy and create abnormal return. Later, when investors' overreaction decrease overtime, this reduce abnormal return of low P/E stocks.

The volume and liquidity characteristics

1. Low P/E stocks have higher trading volume than high P/E stocks. The methodology used is to compare the change in trading volume overtime of low P/E stocks and high P/E stocks. The finding shows that low P/E stocks have statistically significant higher trading volume. This is because investors pay more attention to low P/E stocks. Therefore, they trade more in the stocks that

they pay attention to (Merton 1987). Moreover, the difference between the change in trading volume of low P/E and high P/E stocks is larger than the difference between the change in trading volume of low P/B and high P/B stocks. This can be concluded that investors search for undervalued stocks by paying attention to P/E ratios rather than P/B ratio (Lo and Wang 2000) (Moore 2019).

2. Only positive P/E stocks that is illiquid earns a liquidity premium. This is consistent with many finance theories that the stocks that is illiquid should earn a liquidity premium. However, the interesting finding is that negative P/E stocks that is illiquid don't earn liquidity premium. This is because the negative P/E stocks have negative earnings. Because investors barely pay attention to stocks with negative earnings, their prices just remain stable all the time. As a result, negative P/E stocks, which gain no attention from investors) don't earn liquidity premium (Merton 1987, Amihud 2002, Moore 2019).

Investor attention in Thai stock market

Thai stock market has higher proportion of retail investor than the US stock market. Generally, retail investors don't have deep financial knowledge and analyzing P/E ratio might be too difficult for them. Google search volume in Thailand shows that investors search for target price 1.3 times more than P/E ratio. Moreover, institutional investors in Thailand also trade by following analyst recommendations, which is derives from target prices (Phornchaicharoenkij, 2017). Therefore, this paper will investigate whether Thai investors really pay more attention to target prices than P/E ratios.

3. HYPOTHESES

1. TPER trading strategy is expected to outperform P/E ratio trading strategy at first and then underperform later. This is because investors overreact to high TPER stocks at first. They excessively buy high TPER stocks and push their prices up. After that, when the overreaction decrease overtime, high

TPER stock prices drop accordingly ((Merton 1987)Merton, 1987). Moreover, target prices information is not expected to be valuable in post-one-month period after the information is released (Klaewtanong, 2010). **Therefore, I hypothesize that TPER trading strategy will outperform P/E trading strategy in the first one-month period after the information is released (which is the date of the portfolio formation in each year in 2010-2019)**

2. I expect that high TPER stocks will provide liquidity premium (the additional return to compensate for the stock's illiquidity for investors while low TPER stocks will not. However, I hypothesize that the return of TPER trading strategy will still outperform P/E ratio trading strategy after controlling the liquidity factor constant, which means that the outperformance of TPER trading strategy is not driven from its liquidity premium.
3. I hypothesize that TPER trading strategy can provide abnormal return for investors, even after controlling for value, size and liquidity factor.

4. DATA

This paper collects data from Bloomberg database. This paper study all the data in the time period of 2010-2019 to cover around one full latest business cycle, excluding the financial crisis in 2008-2009, which might distort the results. The data can be separated into 5 sections: scope of stocks, TPER, P/E ratio, and total return index.

Scope of stocks

In Thailand, most of the small-cap stocks have very small number of analyst coverage. The small number of analyst coverage can cause the problem to TPER. If the number of analyst coverage is small, TPER, which is derived from the average target price of all analyst coverage, can be distorted by the outlier's problem. Therefore, the scope of stocks in this paper is 50 stocks in the SET50 index. SET50 index contains 50 stocks with largest market

capitalization. The stocks in SET50 index will have many analysts cover them and can avoid the outlier's problem when calculating TPER.

TPER

TPER is the expected return derived from target price. TPER is the expected return derived from target price. TPER can be used as a proxy of target price because the higher the target price, the higher TPER (holding stock price constant). Therefore, if investors do pay attention to target price, they should make their trading decision according to TPER. TPER of stock i at day t can be calculated as:

$$TPER_{i,t} = \frac{TP_{i,t}}{PRC_{i,t}} - 1 \quad (1)$$

Where $TP_{i,t}$ is the consensus target price (the mean of all target prices of stock i given by analysts) of stock i at day t , and $PRC_{i,t}$ is the closing price of the stock i at day t (Huang, Mian and Sankaraguruswamy, 2009).

The unit of TPER is in percentage. For positive TPER, it is the percentage of the expected upside of the stocks. For negative TPER, it is the percentage of the expected downside of the stocks. Therefore, if investors trade following the TPER, they should conduct their trades as follows:

- For stocks with high positive TPER, investors should buy these stocks because they have large expected upside.
- For stocks with TPER close to zero, investors should do nothing with these stocks because they have very small expected upside or downside.
- For stocks with low negative TPER, investors should sell these stocks because they have large expected downside.

Therefore, at the time of portfolio formation, stocks will be subsampled into positive TPER subsample and negative TPER subsample. This is because I

expect the result of the two subsamples to be similar, but in the opposite direction. That is, in the positive TPER subsample, investors should not pay attention to close to zero TPER stocks and pay attention to high TPER stocks. Also, in the negative TPER subsample, investors should not pay attention to close to zero TPER stocks and pay attention to low TPER stocks.

P/E ratio

This paper use trailing-four-quarters P/E ratios, which is the valuation metrics that US investors pay most attention to (Moore, 2019). P/E ratio of stock i at day t is calculated as:

$$4QPE_{i,t} = \frac{PRC_{i,t}}{4QEPS_{i,t}} \quad (2)$$

Where $PRC_{i,t}$ is the closing price of the stock i at day t , and $4QEPS_{i,t}$ is the trailing-four-quarter's earnings per share of stock i at day t . The reason why I calculate P/E ratio like this is because I want to proof that in Thailand, investors pay more attention to TPER more than trailing-four-quarters P/E ratio, which US investors pay most attention to.

Total return index

This paper calculates portfolio returns using the total return index (TRI) of each stock. The rationale for using TRI to calculate portfolio returns is that TRI is the dividend-adjusted stock prices. TRI can help solving the problem for stocks that their prices drop when they pay dividend (Campbell and Beranek, 1995; Bali and Hite, 1998; Michaely, 1991).

Trading volume

This paper use trading volume of stocks in the unit of number of shares. This is because it is the best proxy for trading activity (Lo and Wang 2000). I

need the proxy for investors trading activity because if the trading activity increase, it means that investors' attention is also arising.

5. METHODOLOGY

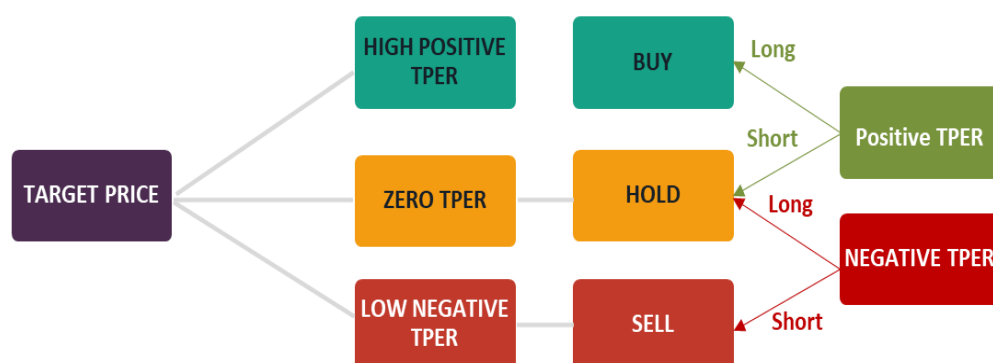
This paper starts by forming two trading strategies, which are TPER trading strategy and P/E ratio trading strategy. The details of each trading strategy are as follows:

TPER trading strategy

TPER trading strategy is constructed for two TPER subsamples: stocks with positive TPER and stocks with negative TPER (Huang, Mian and Sankaraguruswamy, 2009). This rationale is that I'd like to compare each of them with P/E trading strategy whether their results is similar but in the opposite direction (as discussed in the **TPER** subsection in the **4.DATA** section).

To create a TPER trading strategy, I collect the target prices and daily closing prices data from Bloomberg database. However, the target prices of each stock are revised at a different time throughout the year. Therefore, this paper scopes the study only to the year-end target prices, which is released after the year-end financial statements are released. In each beginning year of 2010-2019, I use the start date as all the target prices of stocks in SET50 is revised.

Figure 1: illustration of TPER trading strategy



Stocks with positive TPER

For positive TPER subsample, the trading strategy is to long stocks in the highest TPER quintile (the quintile that include stocks with the largest expected upside) and short stocks in the lowest TPER quintile (the quintile that include stocks with the smallest expected upside). This is because if investors really pay attention to TPER, they will buy stocks with the large expected upside and pushes their prices up more than stocks with small upside (which is the lowest TPER quintile in this positive TPER subsample).

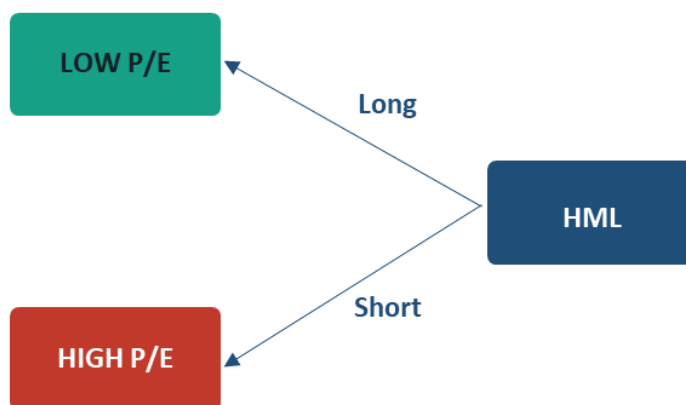
The highest TPER stocks will be assigned to quintile 1 (quintile 1 will be called TPER portfolio 1 afterwards) and the lowest TPER stocks will be assigned to quintile 5 (quintile 5 will be called TPER portfolio 5 afterwards).

Stocks with negative TPER

For negative TPER subsample, the trading strategy is to long stocks in the highest TPER quintile (the quintile that include stocks with the smallest expected downside) and short stocks in the lowest TPER quintile (the quintile that include stocks with the largest expected downside). This is because if investors really pay attention to TPER, they will sell stocks with the large expected downside and pushes their prices down more than stocks with small downside (which is the highest TPER quintile in this negative TPER subsample).

However, there are only 2 stocks in our dataset that have negative TPER. This could be due to the incentives of analysts that tend to issue buy recommendation (positive TPER) more than sell recommendation (negative TPER) (Da, Engelberg et al. 2011, Welagedara, Deb et al. 2017). Therefore, this paper decides to exclude the negative TPER out of the dataset to avoid the outlier's problem.

Figure 2: illustration of P/E trading strategy



P/E ratio trading strategy

P/E trading strategy is constructed by long stocks in the lowest P/E quintile and short stocks in the highest P/E quintile. This is because low P/E stocks are considered value stocks and high P/E stocks are considered growth stocks. On average, value stocks outperform growth stocks (Fama and Fench, 1993). The rationale of creating this trading strategy is because this is the value trading strategy that most investors in the US pay attention to (Moore 2019). Therefore, this paper compares P/E ratio trading strategy with TPER trading strategy to prove that TPER has more investors' attention in Thailand.

Portfolio rebalancing and weighting methodology

Every portfolio (both TPER and PE portfolios) is formed every beginning of the year from 2010-2019 (i.e. annually rebalance). This is because this paper wants to study the year-end result of analyst's target price. Analysts typically revise their key assumptions and give new target prices every beginning of the year when they get the company's full year-end financial statements. However, there are some lag time after the year end to the time that the company release the financial statements and to the time that the analysts update that information into their target prices and upload it into Bloomberg database. Therefore, in beginning of each year, this paper uses the start date at the date which the analysts have updated all the stocks' target prices. The TPER portfolios are then

rebalanced after the target prices have been updated for the next year, and so on for the next year. Note that every portfolio is market capitalization weight in order to be consistent with the SET index, which is the market return that will be used to compare with our portfolios' return to find abnormal returns in our last objective of this paper.

The next step is to form models and equations needed for each of this paper's hypotheses. The details of models and equations, written in the same order of the hypotheses (see section **3. HYPOTHESES**), are as follows:

1. As mentioned in the hypothesis section, when investors pay attention to the largest positive TPER stocks they excessively buy them and pushes their prices up too high and make their future returns lower (versus low P/E stocks). Therefore, this paper plots the cumulative daily return of TPER and P/E ratio trading strategy in 2010-2019. Then, this paper does the one-sided t-test whether the magnitude of the outperformance return is statistically significant or not. The null and alternative hypothesis are constructed as follow:

$$H_0: R_{TPER} - R_{\frac{P}{E}} \leq 0$$

$$H_1: R_{TPER} - R_{\frac{P}{E}} > 0$$

Where R_{TPER} is the daily return of TPER trading strategy, $R_{\frac{P}{E}}$ is the daily return of P/E ratio trading strategy. I expect that we can reject the null hypothesis in days of the first calendar month since the portfolio formation in each year. This is because Klaewtanong (2010) found that the TPER information is not valuable in post-one-month period.

2. This paper used the following methodology to test for liquidity premium across TPER quintile. At every beginning period of TPER portfolio formation, I independently assign stocks to quintile portfolios based on the (Amihud 2002) illiquidity ratio to create the double-sorted portfolio (using TPER and illiquidity ratio as the sorting variables). The (Amihud 2002)

illiquidity ratio is defined as the average daily absolute return scaled by dollar volume. I calculate ILLIQ from days in the last 12 calendar months to observe the illiquidity in the last 12 months period:

$$ILLIQ_{i,t} = \sum_k \frac{|RR_{i,t-k}|}{PRC_{i,t-k} \times SHVOL_{i,t-k}} \quad (10)$$

Where $RR_{i,t-k}$ is the raw return of stock i at time $t-k$, k is number of trading days in that particular year (e.g. in 2010 there are 243 trading days, therefore k in year 2010 is 243 days), $PRC_{i,t-k}$ is closing price of stock i at time $t-k$, and $SHVOL_{i,t-k}$ is the trading volume (measure in the unit of shares per day) of stock i at time $t-k$.

The reason why this paper use (Amihud 2002) to measure the illiquidity of stocks is because (Amihud 2002) illiquidity ratio (ILLIQ), defined as the average daily absolute return scaled by dollar volume. That is, if the stock is illiquid, it will have large price movement, which is captured by raw return ($RR_{i,t-k}$) in the numerator, compares to their dollar volume in the denominator ($PRC_{i,t-k} \times SHVOL_{i,t-k}$).

Then, the liquidity premium of each TPER portfolios is calculated by the average excess returns of the most illiquid quintile minus the most liquid quintile (Figure 4). For example, **stocks in TPER 1 quintile** (column HIGH TPER 1 in Figure 4) are sorted by their ILLIQ ratio into 5 ILLIQ decile (row ILLIQ 1 to ILLIQ 5 in figure 4). As a result, the most illiquid stocks are assigned to the decile called ILLIQ 1 and the most liquid stocks will be assigned to the decile called ILLIQ 5. Then, in each ILLIQ decile, I calculate the daily return of stocks in that ILLIQ decile, weighted by their market capitalization, and put that number in to that particular ILLIQ cell in the table. Then, the liquidity premium is for **stocks in TPER 1 quintile** calculated by the daily return of ILLIQ 1 minus ILLIQ 5 (Amihud 2002) and Moore, 2019) and this number is put in row ILLIQ 1-5 of the column HIGH TPER 1 in Figure 4. Then I move

on into the next TPER quintile, which is TPER quintile 2 and so on to TPER quintile 5 to calculate the liquidity premium of each TPER quintile. Note that the liquidity premium of TPER quintile 1 is expected to be statistically significant and liquidity premium of TPER quintile 5 is not expected to be statistically significant, as shown in the green and red circles in Figure 3.

Figure 3: illustration of the double sorted portfolios for TPER

		HIGH TPER			LOW TPER		
		DECILE	1	2	3	4	5
ILLIQUID	ILLIQ 1						
	ILLIQ 2						
	ILLIQ 3						
	ILLIQ 4						
LIQUID	ILLIQ 5	SIGNIFICANT					
LIQUIDITY PREMIUM	ILLIQ 1-5						NOT SIGNIFICANT

Moreover, to prove that the return of TPER trading strategy will still outperform P/E ratio trading strategy after controlling the liquidity factor constant (which means that the outperformance of TPER trading strategy is not driven from its liquidity premium), this paper do the one-sided t-test again to test whether the magnitude of the outperformance return is statistically significant or not in each liquidity decile. Note that to control the liquidity factor for P/E trading strategy, this paper also follows (Amihud 2002)'s double sorted methodology in the same way that we did for TPER as stated above. For each P/E decile, the most liquid stocks will be placed in decile 'ILLIQ 5' and the most illiquid stocks will be placed in decile 'ILLIQ 1' (see Figure 4).

Figure 4: illustration of the double sorted portfolios for P/E ratio

		LOW P/E			HIGH P/E		
		DECILE	1	2	3	4	5
ILLIQUID	ILLIQ 1						
	ILLIQ 2						
	ILLIQ 3						
	ILLIQ 4						
LIQUID	ILLIQ 5						

After that, the null and alternative hypothesis are constructed as follow:

$$H_0: R_{TPER} - R_{\frac{P}{E}} \leq 0$$

$$H_1: R_{TPER} - R_{\frac{P}{E}} > 0$$

Where R_{TPER} is the daily return of TPER trading strategy, $R_{\frac{P}{E}}$ P/E is the daily return of P/E ratio trading strategy. I expect that we can reject the null hypothesis in days of the first calendar month since the portfolio formation in each year. Note that this is the same methodology as the objective 1's but this time we control the liquidity factor constant (by doing the double sorted portfolio) to make sure that the outperformance of TPER trading strategy is not driven from its liquidity premium.

- To find abnormal returns of TPER trading strategy, this paper uses the Fama-French 3 factors model to control for size and value factor (Fama and Fench, 1993). The Fama-French 3 factors model is defined as:

$$R_{i,t} = \alpha_{i,t} + \beta_{i,t}(R_{m,t} - R_{f,t}) + \beta_{i,t}(R_{smb,t}) + \beta_{i,t}(R_{hml,t}) + \varepsilon_{i,t} \quad (11)$$

Where $R_{i,t}$ is the daily return for TPER portfolio i on day t and, α_i is abnormal return for portfolio i on day t . In the model, $R_{m,t}$ is the return for total market index on day t . α_i is abnormal return for portfolio i on day t . $R_{f,t}$ is the risk-free rate (10-year treasury yield) on day t . $R_{smb,t}$ is the

return for size premium portfolio on day t . $R_{hml,t}$ is the return for size premium portfolio on day t .

In this paper, I calculate daily returns for the TPER portfolios (long TPER decile 1 and short TPER decile 5; weighted by market capitalization) and run the regression as equation 11 to find their daily abnormal return and see whether this trading strategy's abnormal return is statistically significant or not.

Moreover, to control for the liquidity factor, I use the same double-sorted portfolio in objective 2. Therefore, there will be 5 TPER portfolios across our 5 liquidity deciles, and we will observe their daily abnormal returns in the first month since the date of portfolio formation in 2010-2019.

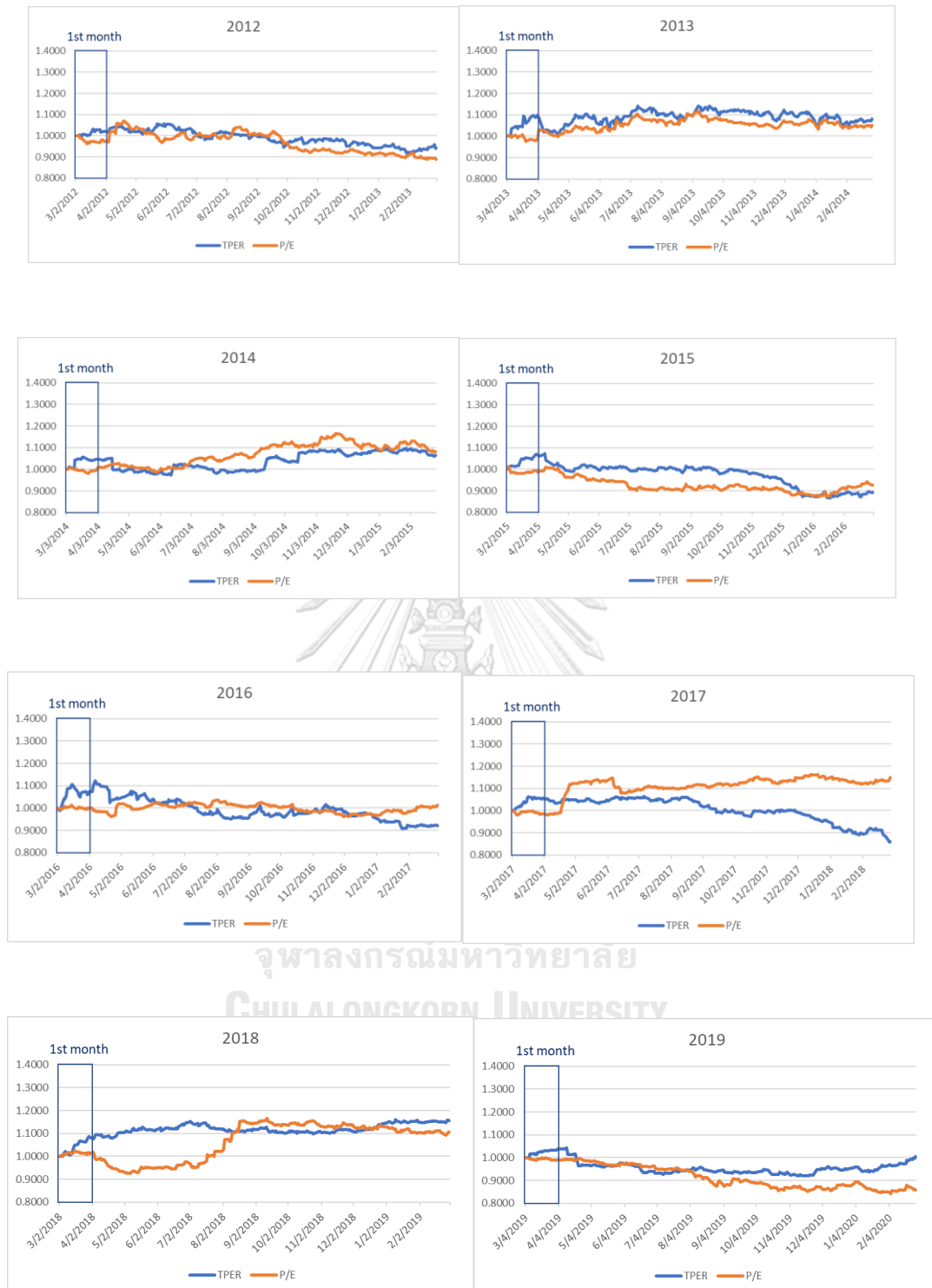
6. RESULTS AND DISCUSSION

The details of results and discussion, written in the same order of the hypotheses and methodologies (see section **3. HYPOTHESES**, and section **4. METHODOLOGIES**), are as follows:

1. In the period of 2010-2019, I plot the graph of cumulative daily return of TPER trading strategy and P/E ratio trading strategy as shown in Figure 5 below.

Figure 5: Cumulative returns of TPER and P/E trading strategy in 2010-2019 (beginning from 1.0000 Baht in each beginning date of portfolio formation in each year)





I found that in the first month since the beginning date of portfolio formation in each year, TPER portfolio always outperform P/E ratio trading strategy. This is consistent with Klaewtanong (2010) that found that target price information is not valuable in post-one-month period after the information is released. Therefore, I decide to investigate further that whether the magnitude of outperformed return of TPER over P/E ratio

trading strategy is statistically significant or not. The result of the test is shown in Table 1 below.

Table 1: The t-test result of return for TPER trading strategy over the return of P/E ratio trading strategy (i.e. $R_{TPER} - R_{\frac{P}{E}}$)

Data descriptive	$R_{TPER} - R_{\frac{P}{E}}$
mean	0.24%
s.d.	0.10%
No. of observation	208
t-stats	2.40
p-value	0.01***

***p<0.01, **p<0.05, *p<0.1

Remark: No. of observation of 208 comes from 208 trading days (and therefore 208 daily returns in the first calendar month since the date of portfolio formation in 2010-2019)

The result shows that TPER trading strategy statistically outperforms P/E ratio trading strategy in 2010-2019 at 1% significant level. Moreover, the result guides us that we should focus on the first one calendar month period after the portfolio formation date in each year (from 2010-2019) for the holding period of our TPER trading strategy.

For the result discussion, the outstanding return in the post-one-month period after the TPER information is released (which is the date of our portfolio formation in each year) is consistent with Klaewtanong (2010), who found that the target price information is not valuable in post-one-month period.

2. After I investigate further into the liquidity premium of high and low TPER stocks, I find that high TPER have significant liquidity premium. However, low TPER stocks do not have statistically significant liquidity premium. The results are as follows.

Table 2: Mean of daily liquidity premium of each TPER quintile in the first calendar month since the date of portfolio formation in 2010-2019

Year	Highest TPER	Medium TPER		Lowest TPER	
	Quintile 1	Quintile 2	Quintile 3	Quintile 4	
2010	1.21%	0.42%	2.30%	3.20%	-2.09%
2011	8.00%	1.92%	-5.40%	-7.48%	2.59%
2012	8.99%	3.48%	-9.78%	-10.84%	1.40%
2013	5.49%	4.08%	-9.10%	0.20%	-5.46%
2014	9.50%	7.91%	-8.60%	-0.33%	0.63%
2015	7.78%	-3.99%	1.23%	-7.74%	-0.40%
2016	2.76%	5.03%	-24.29%	0.73%	-11.69%
2017	11.18%	10.33%	-4.77%	5.77%	1.18%
2018	5.16%	2.79%	0.98%	-9.02%	-10.57%
2019	2.48%	3.39%	-5.82%	1.58%	3.49%
mean	6.26%	3.54%	-6.33%	-2.39%	-2.09%
s.d.	3.36%	3.91%	7.72%	5.81%	5.39%
No. of observations	208	208	208	208	208
t-stat	1.86	0.91	-0.82	-0.41	-0.39
p-value	0.06*	0.37	0.41	0.68	0.70

***p<0.01, **p<0.05, *p<0.1

Remark: Number of observations is calculated obtained from the daily returns of the first calendar month since the date of portfolio formation in 2010-2019

The significant liquidity premium in only highest TPER decile (mean of 6.26%; significant at 10% level of significance) emphasize the fact that the outperformance of TPER trading strategy over the P/E ratio trading strategy in objective 1 could come from the liquidity premium (since we long the decile 1 in our TPER trading strategy). As a result, we must make sure that the outperformance of TPER over P/E ratio trading strategy does not come from this liquidity premium. The result of that proof is as shown below.

Table 3: The t-test result of return for TPER trading strategy over the return of P/E ratio trading strategy (i.e. $R_{TPER} - R_{\frac{P}{E}}$) after controlling for liquidity factor

Liquidity Decile	mean	s.d.	No. of observation	t-stat	p-value
ILLIQ 1	0.18%	0.08%	208	2.20	0.01**
ILLIQ 2	0.14%	0.06%	208	2.39	0.01***
ILLIQ 3	0.19%	0.08%	208	2.50	0.01**
ILLIQ 4	0.17%	0.08%	208	2.20	0.01**
ILLIQ 5	0.22%	0.11%	208	2.11	0.02**

***p<0.01, **p<0.05, *p<0.1

Remark: Number of observations is calculated obtained from the daily returns of the first calendar month since the date of portfolio formation in 2010-2019

The result shows that even after controlling for liquidity factor, TPER trading strategy can still provide statistically significant outperformance return over the P/E ratio trading strategy (at 5% significant level for liquidity decile 1,3,4 and 5 and at 1% significant level for liquidity decile 5). Therefore, we can conclude that the outperformance of TPER trading strategy does not come from the liquidity factor. For the discussion, the result is consistent with (Amihud 2002) which found that investors tend to trade stocks with high TPER and hence create the liquidity premium. However, the return from TPER still has investment value for investors (Soni, 2010).

3. I use Fama-French 3 factor model (Fama and French, 1993) to find daily abnormal return of TPER trading strategy in the first calendar month in 2010-2019, TPER trading strategy have statistically significant abnormal returns. The results are as follows.

Table 4: Abnormal daily returns of TPER trading strategy

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	0.3%	0.1%	2.63	0.01
rm-rf	-2.6%	15.2%	-0.17	0.86
smb	-0.2%	0.0%	-5.10	0.00
hml	0.1%	0.4%	0.18	0.86
R-squared	0.0078			
No. of observation	208			

***p<0.01, **p<0.05, *p<0.1

Remark: Number of observations is 208, calculated obtained from the daily returns of the first calendar month since the date of portfolio

TPER trading strategy shows significant abnormal return (see row 'intercept' of Table 7) at 5% significant level. This proves that investors should get abnormal returns after controlling for size and value factor in 2010-2019. The result is consistent with (Da, Engelberg et al. 2011, Goddard, Kita et al. 2015), Kahneman, D. (1973), which states that investors pays attention to target prices information and this could create abnormal returns for investors.

Moreover, after controlling for liquidity factor, I also find statistically significant daily abnormal returns as shown in Table 5-9 below. Note that the number of observations is 208, calculated obtained from the daily returns of the first calendar month since the date of portfolio formation in 2010-2019.

Table 5: Abnormal daily returns of TPER trading strategy for liquidity decile 1

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	0.2%	0.1%	2.03	0.04
rm-rf	-2.7%	14.7%	-0.18	0.86
smb	-0.1%	0.9%	-0.08	0.93
hml	0.1%	0.2%	0.52	0.60
R-squared	0.0079			
No. of observation	208			

***p<0.01, **p<0.05, *p<0.1

Table 6: Abnormal daily returns of TPER trading strategy for liquidity decile 2

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	0.3%	0.1%	2.32	0.02
rm-rf	-2.6%	14.7%	-0.18	0.86
smb	-0.2%	0.2%	-0.72	0.47
hml	0.1%	0.3%	0.26	0.79
R-squared	0.0080			
No. of observation	208			

***p<0.01, **p<0.05, *p<0.1

Table 7: Abnormal daily returns of TPER trading strategy for liquidity decile 3

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	0.3%	0.1%	1.89	0.06
rm-rf	-2.7%	14.4%	-0.18	0.85
smb	-0.1%	0.3%	-0.46	0.64
hml	0.1%	0.2%	0.34	0.74
R-squared	0.0081			
No. of observation	208			

***p<0.01, **p<0.05, *p<0.1

Table 8: Abnormal daily returns of TPER trading strategy for liquidity decile 4

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	0.2%	0.1%	2.01	0.05
rm-rf	-2.7%	14.9%	-0.18	0.86
smb	-0.2%	0.6%	-0.27	0.79
hml	0.1%	0.7%	0.11	0.91
R-squared	0.0083			
No. of observation	208			

***p<0.01, **p<0.05, *p<0.1

Table 9: Abnormal daily returns of TPER trading strategy for liquidity decile 5

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	0.2%	0.1%	1.92	0.06
rm-rf	-2.6%	15.0%	-0.17	0.86
smb	-0.1%	0.8%	-0.17	0.87
hml	0.1%	0.2%	0.33	0.74
R-squared	0.0084			
No. of observation	208			

***p<0.01, **p<0.05, *p<0.1

After controlling for liquidity factor in every liquidity decile, TPER trading strategy still provide abnormal returns at 5% significant level, which means that the abnormal return from TPER trading strategy does not come from stocks' liquidity premium. The result is consistent with Soni (2010) who finds abnormal returns and investment value of analyst's target prices.

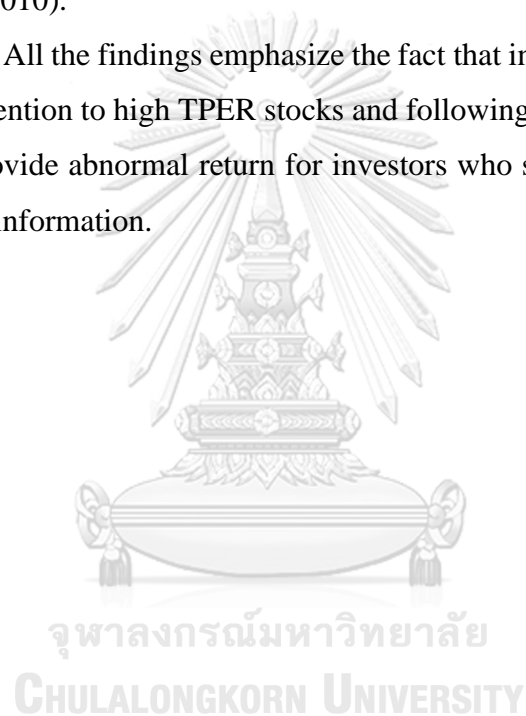
7. CONCLUSION

The purpose of this paper is to study about attention properties of target price and P/E ratio and try to find the investment implication of target price expected return (TPER) trading strategy. The data are collected from Stock Exchange of Thailand (SET) and study the stocks in the SET50 index using Bloomberg database in the period of 2010-2019.

There are several approaches which are applied to each objectives of this paper. First, this paper test whether the magnitude of the outperformance of TPER trading strategy over P/E ratio trading strategy daily return is statistically significant or not in the period of first month since the date of portfolio formation in each year. The result shows that TPER trading strategy statistically outperforms P/E ratio trading strategy in 2010-2019 at 1% significant level and guides us that we should focus on the first one calendar month period after TPER information is released in each year. Second, this paper investigates further into the liquidity premium of TPER trading strategy in that period. High TPER have significant liquidity premium. However, low TPER stocks do not have statistically significant

liquidity premium. The result is consistent with (Amihud 2002). (Amihud 2002) finds that only stocks with high TPER, which investors tend to pay attention to, provide liquidity premium. Also, this paper found that TPER trading strategy still outperform P/E ratio trading strategy after controlling for liquidity factor. Third, this paper finds statistically significant abnormal returns of TPER trading strategy, even control for size, value and liquidity factor. This provide implications for investors who seek abnormal return by using target prices. This finding is consistent with Klaewtanong (2010) and Soni (2010).

All the findings emphasize the fact that investors in Thailand tend to pay attention to high TPER stocks and following the TPER trading strategy can provide abnormal return for investors who seek active investing using TPER information.



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