

# A STUDY ON PERFORMANCE EVALUATION OF THE “DOGS OF THE DOW” INVESTMENT STRATEGY FOR THE THAI STOCK MARKET

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## ABSTRACT

In stock markets, investors constantly seek ways to make profits or outperform benchmarks. However, this goal is not easy to achieve even for professional fund managers. In this study, we purpose applying the “Dogs of the Dow” investment strategy to the Thai market. With this strategy, we buy the ten highest yielding SET50 (Stock Exchange of Thailand 50) stocks and rebalance the portfolio annually. We conduct a simulation for data from 1995 to 2012. The simulation results show that, on average, the “Dogs of the Dow” strategy outperforms the stock market indices. Even after risk adjustment, the “Dogs of the Dow” strategy is still superior the benchmark.

Keywords: the “Dogs of the Dow” strategy, portfolio selection, sharp ratio, the Stock Exchange of Thailand

## 1. INTRODUCTION

Investors are constantly seeking ways to outperform benchmarks in stock markets. However, it is quite difficult even for professional investors.

In recent years, the “Dogs of the Dow” investment strategy, also known as the Dow 10 strategy, has become widely recognized for its ease of maneuverability and high performance. It is a portfolio selecting strategy devoted to picking the highest dividend stocks from the Dow Jones Industrial Average (DJIA) stocks. The strategy was first proposed by J. Slatter (1988). It involves investing equal amounts in the 10 highest yielding stocks of the DJIA stocks and rebalancing the portfolio every year. The ten stocks are called “dogs”, which means “losers”, because high yields implies that the stocks are not approved by the market. Slatter examined the performance of the strategy for several years and found that it outperformed the DJIA index by 7.6% on an annual basis. Similar results were reported in investment books like (Knowles and Petty 1992) and (O’Higgins and Downes 1991). These books highlighted the “Dogs of the Dow” strategy and prompted its increasing popularity among both institutional and individual investors.

In this paper, we examine the performance of the “Dogs of the Dow” strategy in a different market setting

and during different time periods. In particular, our purpose is to analyze the performance of the “Dogs of the Dow” strategy in the Thai stock market to examine its validity. We implement simulations for data from 1995 to 2011 and compared the performance of the “Dogs of the Dow” strategy with two popular market indices, the SET (Stock Exchange of Thailand) Index and the SET50.

The results of simulations show that the “Dogs of the Dow” strategy outperforms the market indices, though the superiority is not statistically significant, and portfolios with fewer than ten stocks have even better performance than the original ten-stock portfolio.

The remainder of this paper is organized as follows: In the next section, we review the related literature on the “Dogs of the Dow” investment strategy. In Section 3 we briefly introduce the simulation. Section 4 compares performance of the “Dogs of the Dow” with the SET Index. Then, we adjust the risk for the “Dogs of the Dow” investment strategy and make the comparison again (Section 5). Portfolios with other numbers of dogs are described in Section 6. Finally, Section 7 concludes the paper with remarks on the future.

## 2. LITERATURE REVIEW

### 2.1. Study on American Market

The “Dogs of the Dow” investment strategy was originally proposed by John Slater (1988). With this strategy, an investor selects the 10 highest dividend yielding stocks from the DJIA stocks at the end of each calendar year and invests equal amounts to each stock. After 1 year, the portfolio is rebalanced and updated with equally weighted investments in the new highest yielding stocks. It was reported that from 1972 to 1987, the average annual return of such a portfolio outperformed the DJIA by 7.6 percentage points. For longer time horizons, O’Higgins and Downes and Knowles and Petty published books to introduce further information regarding the “Dogs of the Dow” strategy in American market. In (O’Higgins and Downes 1991), the authors reported that the average annual return of the “Dogs of the Dow” is 6.2 points higher than the

DJIA during the period 1973 to 1991. Reference (Knowles and Petty 1992) shows that while the “Dogs of the Dow” portfolio had an average annual return of 14.2%, the DJIA only had an average annual return of 10.4% from 1957 to 1990. They also examined an alternative version of the strategy in which the “Dogs of the Dow” portfolio consists of the five highest dividend yielding stocks. The reported average annual return for this five dog stock strategy is 15.4%.

The idea was that the dividend yield was often an inverse indicator of popularity, and that buying Dow stocks when they were temporarily out of favor was a shrewd way to beat the market. The theoretical basis for the strategy could be traced to the theory of corporate dividend policy. Corporations strive to maintain stable dividend payouts in order to avoid sending undesirable signals to the markets about the company’s future business prospect.

The first academic study on the “Dogs of the Dow” strategy in American stock market was performed by McQueen, Shields and Thorley (1997), whose study of the phenomenon produced mixed results. They found that the “Dow 10” strategy outperformed the “Dow 30” strategy over a period of 50 years from 1946 to 1995 by approximately 3 percentage points. Breaking the sample into five 10-year periods, the authors found that the strategy was successful in each period, however, they argued that the strategy would lose effectiveness after adjustment for risk (in terms of company - specific risk from inadequate diversification), transaction costs, and tax treatment. After they incorporated these factors, the Dow 10 strategy’s premium over the Dow 30 shrank to 0.95 percentage points.

## 2.2. Studies on Other Market

The “Dogs of the Dow” investment strategy has been examined in many other stock markets.

Reference Visscher and Filbeck (1997) examined the “Dogs of the Dow” strategy in the British stock market. The authors simulated UK data from 1985 to 1994 and applied the “Dogs of the Dow” strategy to stocks included in the FTSE100 (Financial Times Stock Exchange 100) index. The “Dogs of the Dow” portfolio was documented to outperform the market index on a risk adjusted basis in only 4 years out of the 10, thereby indicating that the “Dogs of the Dow” strategy was not particularly effective in the UK.

The effectiveness of the “Dogs of the Dow” strategy in the Canadian stock market was focused on the Toronto35 index from 1987-1997 and reported an average annual excess return of 6.6% for the “Dogs of the Dow” portfolio. More importantly, the study showed that the “Dogs of the Dow” strategy produced significantly higher risk adjusted return than the Toronto35 and TSE300 (Toronto Stock Exchange 300) indices and the reported excess returns were also high enough to compensate for the higher taxes and transaction costs (Visscher and Filbeck 2003).

Andre and Silva studied its performance in Latin American stock markets from 1994 to 1999. They found

that the “Dogs of the Dow” slightly outperformed the market indices in Argentina, Chile, Colombia, Mexico, Peru and Venezuela, while the strategy seemed to underperform relative to market index in Brazil. Moreover, they conclude that the result lacks statistical significance, probably because of the short test period (Andre and Silva 2001).

Furthermore, Brzeszczynski and Gajdka (2008) focused on the Polish stock market from 1997 to 2007. The study showed that there were important implications for investors’ regarding their investment horizon choices. Portfolios were proven to be a profitable investment during the entire sample period even though their returns varied considerably in shorter periods. Thus, the new empirical evidence from Poland, confirms the findings from some other markets that investors should view this type of a trading strategy as a long term, rather than a short term investment.

In Japan, Song and Hagio (2007) proposed to apply the “Dogs of the Dow” strategy to the Tokyo Stock Price Index 30 (TOPIX30) and NIKKEI 225. They showed that for data from 2002 to 2006, the “Dogs of the Dow” strategy is only slightly superior to the benchmark when applied to the TOPIX30, while the performance is much better when applied to the NIKKEI 225. Therefore they concluded that the strategy should be applied to the NIKKEI 225 in the Japanese market. For a longer period (1981 – 2010), Qiu, Song and Hasama investigated the strategy, and showed that it outperformed the NIKKEI 225 and the result is statistically significant.

In Finland, Rinne and Vahamaa (2011) summarized the performance of the “Dogs of the Dow” investment strategy in Aktiebolaget Optionsmäklarna / Helsinki Stock Exchange (OMX25) index from 1998 to 2008. They indicated that the strategy can be successfully replicated in different types of markets and in different market conditions. Their result reported an annual abnormal return of 4.5% and the outperformance of the strategy appeared particularly pronounced during a stock market downturn.

Qiu, Yan and Song (2012) focused on the Hong Kong stock market from 2001 to 2011. Based on the result of the simulation, they found that the “Dogs of the Dow” strategy outperformed the Hang Seng Index. However, the result was not statistically significant. They also found that the portfolios with fewer than 10 dogs outperformed the benchmark. Thus, they concluded that the “Dogs of the Dow” strategy was effective in the Hong Kong stock market.

## 3. APPLICATION TO THE THAI STOCK MARKET

### 3.1. Market Indices in the Thai Stock Market

In this paper, we propose applying the “Dogs of the Dow” investment strategy to the Stock Exchange of Thailand (SET), which is the only stock exchange in the country. As of 31 December 2012, the SET had about 600 listed securities.

The most popular market index for the Thai stock market is the SET Index, which is calculated from the prices of all common stocks (including unit trusts of property funds) on the main board of the SET, except for stocks that have been suspended for more than one year. The index is a market capitalization-weighted price index, which compares the current market value of all listed common shares with its value on the base date of April 30, 1975, when the SET Index was established and set at 100 points. In addition to the SET Index, the SET also provides other indices to investors which include the Market for Alternative Investment index (mai index), industry group and sectorial indices, SET50 index and SET100 index.

Here we apply the “Dogs of the Dow” strategy to the SET50 index, which is “calculated from the stock prices of the top 50 listed companies on the SET in terms of large market capitalization, high liquidity and compliance with requirements regarding the distribution of shares to minor shareholders”(The Stock Exchange of Thailand 2013). It is also a capitalization-weighted index, and was calculated from August 1995 with a base value of 1000 points. The component stocks in the SET50 Index are reviewed every six months in order to adjust for any changes that may have occurred in the stock market, such as new listings or public offerings.

### 3.2. Simulation

We implemented the simulation of the “Dogs of the Dow” strategy in the following steps.

**Step 1.** Collect data on all of the 50 companies of the SET50 on 30 September, and then select the 10 highest dividend yielding stocks, invest in the 10 stocks with equal amounts on 1st October.

**Step 2.** Hold these stocks for 1 year, and then sell them out on 30th September of the following year. After updating the list of the SET 50, invest in the new top 10 stocks equally.

**Step 3.** Repeat the above process every year.

In this study, we conducted a simulation for the data for the years 1995–2011. We searched for the price of the stocks from the Internet and obtained the dividend data from the SET. October 1st was chosen as the investment date because it is the beginning of the fiscal year for most Thai companies.

## 4. COMPARISON OF PERFORMANCE

In this section, we compare the performance of the “Dogs of the Dow” strategy with the SET Index from various points of view.

### 4.1. Difference between Annual Returns

Figure 1 plots the difference in annual return between the “Dogs of the Dow” strategy and the SET Index portfolios for each of the 17 years. A positive difference indicates that the “Dogs of the Dow” strategy outperformed the SET Index portfolio.

From Figure 1, we can see that the “Dogs of the Dow” strategy portfolio outperformed the SET Index

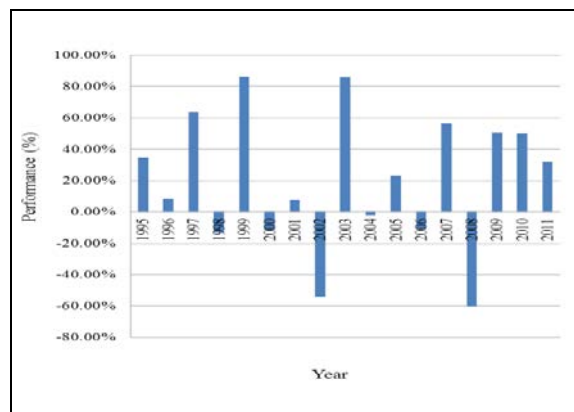


Figure 1: Annual Difference in Return between the “Dogs of the Dow” strategy and the SET Index

11 times from 1995 to 2011. In particular, in 1999, the “Dogs of the Dow” strategy was 86.15 percentage points greater than the SET Index. In 2003, the “Dogs of the Dow” strategy was 85.87 percentage points greater than the SET Index. However, the performance of the “Dogs of the Dow” strategy was also poor in several years. The worst performance was in 2008, when the difference between the two strategies was - 60.19 percentage points.

### 4.2. Average Return

Table 1 shows the average return and deviation of the “Dogs of the Dow” strategy and the SET Index. We can see that the “Dogs of the Dow” strategy had an average return of 23.68% and a standard deviation of 35.45%, while the SET Index portfolio had a lower mean return and deviation of 3.32% and 33.03%, respectively. Table 1 also shows data on the difference between the two portfolios. The “Dogs of the Dow” strategy had an average 20.36 percentage points higher return, and the difference of the standard deviation was 2.42 percentage points.

From the result, we can see that the “Dogs of the Dow” strategy outperformed the SET Index during the 17 years on average. To check the statistical significance of the result, we conducted a T-test at a 5% significance level, and the result was  $p = 0.10258084 > 0.05$ . Therefore the difference of 20.36 percentage points is not statistically significant.

Table 1: Annual Return Summary Statistics (1995 to 2011)

Portfolio	Average annual return	Standard deviation
“Dogs of the Dow”	23.68%	35.45%
SET Index	3.32%	33.03%
Difference	20.36%	2.42%

### 4.3. Accumulated Performance

Figure 2 shows the accumulated performance of the “Dogs of the Dow” strategy, the SET Index and the SET50. From 1995 through 2011, the “Dogs of the Dow” strategy always had a higher accumulated return than both the SET Index and the SET50. In contrast, the

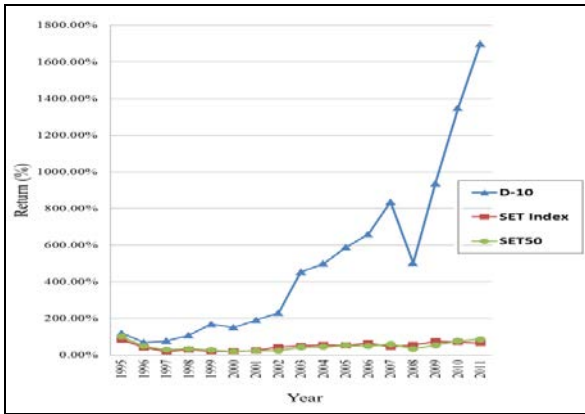


Figure 2: Accumulated Performances

SET Index and the SET lines in the lower part of the graph show a steady trend.

In 2011, the “Dogs of the Dow” strategy had an accumulated value of 1698.60%, which is about 17 times the value in 1995. In contrast, the value of the SET Index in 2011 was only 94.28%, which is at about the same level with the data of 1995, and the accumulated value of the SET50 Index was quite similar to that of the SET Index.

Therefore, we conclude that in the long term, the “Dogs of the Dow” strategy is very powerful for making profit and beating the benchmarks.

#### 4.4. Subperiod Analysis

Table 2 reports a 5-year subperiod analysis regarding the mean return and nominal difference between the “Dogs of the Dow” strategy and the SET Index. From table 2 we can conclude that the “Dogs of the Dow” strategy outperformed the SET Index in all of the 5 year subperiods. From 1995-1999, the “Dogs of the Dow” strategy had a very large difference from that of the SET Index, the difference being 35.99 percent. During the periods 2000-2004, 2005-2009, and 1995-2011, the differences were 5.15, 11.73, and 20.36 percentage points, respectively. As a result, the “Dogs of the Dow” strategy is useful in making profit in the medium term. However, the standard deviation of the “Dogs of the Dow” strategy was greater than the SET Index.

#### 5. RISK ADJUSTMENT

Table 2 shows that the “Dogs of the Dow” strategy has a higher mean return than the SET Index. It also shows

that in most periods, the “Dogs of the Dow” strategy had higher standard deviations than the SET Index. With only 10 stocks in the portfolio, there were some unsystematic risks that led to the higher standard deviations. Therefore, we need to adjust the risk of the “Dogs of the Dow” strategy to judge the performances of different strategies more precisely.

The Sharpe Ratio tells us whether a portfolio's returns are due to smart investment decisions or the result of excess risk. This measurement is very useful because although one portfolio or fund can reap higher returns than its peers, it is only a good investment if those higher returns do not come with too much additional risk. The greater a portfolio's Sharpe ratio, the better its risk-adjusted performance has been. A negative Sharpe ratio indicates that a risk-less asset would perform better than the security being analyzed (Sharp 1966). By assuming that the investor allocates part of his portfolio to some riskless assets, the Sharpe Ratio eliminates the risk premium from the portfolio, thus enabling the comparison of two different risk degree portfolios.

In this paper, we use Thai government bonds as the risk-free asset. Then the adjustment for the entire 17 years period is the same to invest 93 percent ( $33.03\% / 35.45\% = 93.17\%$ ) of the wealth in the “Dogs of the Dow” strategy and the remaining 93 percent ( $1 - 93\%$ ) in government bonds. With this 93% investment in the national debt, we can adjust the higher risk of the “Dogs of the Dow” strategy to have nearly the same standard deviation as that of the SET Index. After that, using the government bonds mean annual return of 2.68%, the return of the “Dogs of the Dow” strategy can be transformed to 22.25% (i.e.,  $(23.68\% - 2.68\%) (33.03\% / 35.45\%) + 2.68\%$ ). Apparently, the Dogs of the Dow strategy outperformed the SET Index even after the adjustment, although the difference between average return now shrinks to 18.93 percentage points (Table 3).

The second column in Table 3 is the risk-adjusted average returns of the “Dogs of the Dow” strategy, and the fourth column is the difference between the return of the risk-adjusted “Dogs of the Dow” strategy and those of the SET Index. Before the adjustment, the “Dogs of the Dow” strategy performed better than SET Index for all three subperiods, and the results remained

Table 2: Subperiod Analysis

5 years Subperiod	Mean Return		The Standard Deviations		Nominal Difference
	“Dogs of the Dow”	SET Index	“Dogs of the Dow”	SET Index	
1995-1999	17.13%	-18.86%	33.72%	38.81%	35.99%
2000-2004	28.70%	23.54%	36.70%	26.26%	5.15%
2005-2009	20.71%	8.97%	40.35%	23.39%	11.73%
1995-2011	23.68%	3.32%	35.45%	33.03%	20.36%

Table 3: The Difference between the Risk-Adjusted “Dogs of the Dow” and SET Index

5 years Subperiod	Return of Risk Adjusted “Dogs of the Dow”	Return of SET Index	Risk - Adjusted Difference
1995–1999	16.31%	-18.86%	38.17%
2000–2004	21.29%	23.54%	-2.25%
2005–2009	13.13%	8.97%	4.16%
1995–2011	22.25%	3.32%	18.93%

the same even after the adjustment. In particular, in the 2000 - 2004 subperiod, the returns of SET Index becomes greater than the return of the risk adjusted “Dogs of the Dow”. Consequently, we can see that the “Dogs of the Dow” strategy remains superior to the SET Index even after eliminating risk factors.

### 6. PORTFOLIOS WITH OTHER NUMBERS OF DOGS

In this section, we test other portfolios with fewer stocks and compared the performance of each portfolio using the “Dogs of the Dow” strategy with the SET Index and SET50. We named the portfolio with the top N stocks as Dow N strategy. The simulation of this strategy was conducted in a manner similar to that of the “Dogs of the Dow” strategy but by using the top N stocks instead of the top-10 stocks.

From Figure 3, we can conclude that all portfolios of the “Dogs of the Dow” investment strategy outperformed the SET which is the original “Dogs of the Dow” strategy, had the ninth highest average return, with a value of 23.68% during the 1995–2011 periods. The Dow 3 portfolio had the highest average annual return. The Dow 10 strategy, SET Index and SET50, however, were as low as 3.32% and 4.93%, respectively.

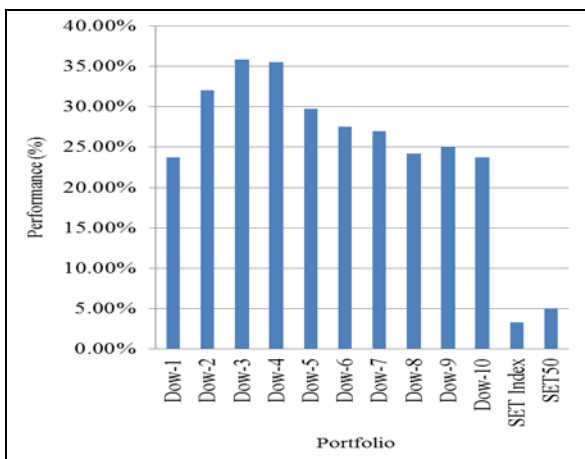


Figure 3: Average Annual Returns of other Numbers of Dogs, SET Index and SET 50

### 7. CONCLUSION

In this study, we proposed applying the “Dogs of the Dow” investment strategy for the Thai stock market and compared the performance of the “Dogs of the Dow” strategy with benchmarks over several years. On average, the strategy outperformed the SET Index and the SET50 Index in the Thai stock market. However, the result is not statistically significant. We found that the portfolios with fewer than ten “dogs” also outperformed the SET Index. Therefore, we can conclude that in the long term, the “Dogs of the Dow” strategy is effective in Thai stock market to make profits and outperform the benchmarks.

### ACKNOWLEDGMENTS

We would like to express our deepest appreciation to those people who helped in even the smallest way in making the completion of this paper possible. In particular, we would like to express our sincere gratitude and appreciation to Ms. Nattaporn Yuenyongpisit for providing the basic data regarding the SET 50 stocks.

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