THAILAND'S CONCENTRATION OF WEALTH AND SPREAD OF POVERTY: EVIDENCE FROM THE STOCK EXCHANGE OF THAILAND

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1. INTRODUCTION

Inequality has become one of the most important global issues today. Famous economists, such as Thomas Piketty[1] and Joseph Stiglitz,[2] have come forward to point out that the "trickle down" economic effect suggested by the famous Kuznets curve[3] may not be achievable in reality.

In the case of Thailand, records from the past show that the inequality situation has been improving, even in the period following the deep 2008/09 financial crisis triggered by the collapse of United States subprime loans, a period often called the "Great Recession" (Figure 1).

Figure 1 shows that the GDP Growth rate on average during the period 2000-2007 was 5.19 percent (dashed line) while GDP growth on average in the period 2008-2016 dropped to 2.98 percent. Gini coefficients declined from 0.52 to 0.45 between 2000 and 2015.

Figure 1 depicts Thailand's annual GDP growth rate between 2000 and 2016 (bar graph). The average GDP growth rate was about 5.19 percent (dashed line) in the sub-period before the start of the 2008/09 financial crisis. However, average GDP growth after the crisis was only 2.98 percent (dashed line), which was much lower than before. On the positive side, Gini coefficients, a measure of the severity of inequality, have consistently declined, from 0.52 in 2000 to 0.45 in 2015 (solid line).

Yet, there is much evidence showing that the current economic recovery may not be broad-based. For example, income data from household surveys indicate that, despite the fact that Thailand's economy in the first half of 2017 was growing by 3.5 percent, the income of the bottom 40 percent of households actually decreased.[4] Also, the recent economic recovery is driven mainly by the export sector, which consists of mostly medium to large-size firms. Therefore, the current economic recovery should be classified as strong on the outside but weak on the inside; in other words, it has been strong for companies whose revenues are from abroad and weak for companies that mainly attract local revenues.[5]

This situation reflects a "concentration of wealth and spread of poverty," which is roughly defined as a situation in which the distribution of economic gains is concentrated in the group that is wealthier and has more political power than the other groups in the market.

This paper is focused on the concentration of wealth and spread of poverty in Thailand's stock market, which is one of the key distributive channels for economic gains. The main hypothesis for this paper is that firms listed on the stock exchange are, on average, relatively larger than other firms outside, and powerful and wealthier individuals can gain access to obtain profits from this market much easier than others. Hence, the concentration of wealth and spread of poverty in the stock market, if it ever happens, would benefit the rich more than others and aggravate the country's inequality problem.

The paper is organized as follows. In section 1, there is an explanation of the motivation for conducting this research. Section 2 briefly covers some basic background and explains the methodologies of the analysis applied in this paper. Next, in section 3, the results of inequality analyses are displayed using data from the stock market of Thailand; it is divided into two parts. One part covers analysis of the return on assets (ROA), and the other covers analysis of the net profit of firms listed on both

[1] *Piketty, T. 2015. The Economics of Inequality. Cambridge: Harvard University Press.*

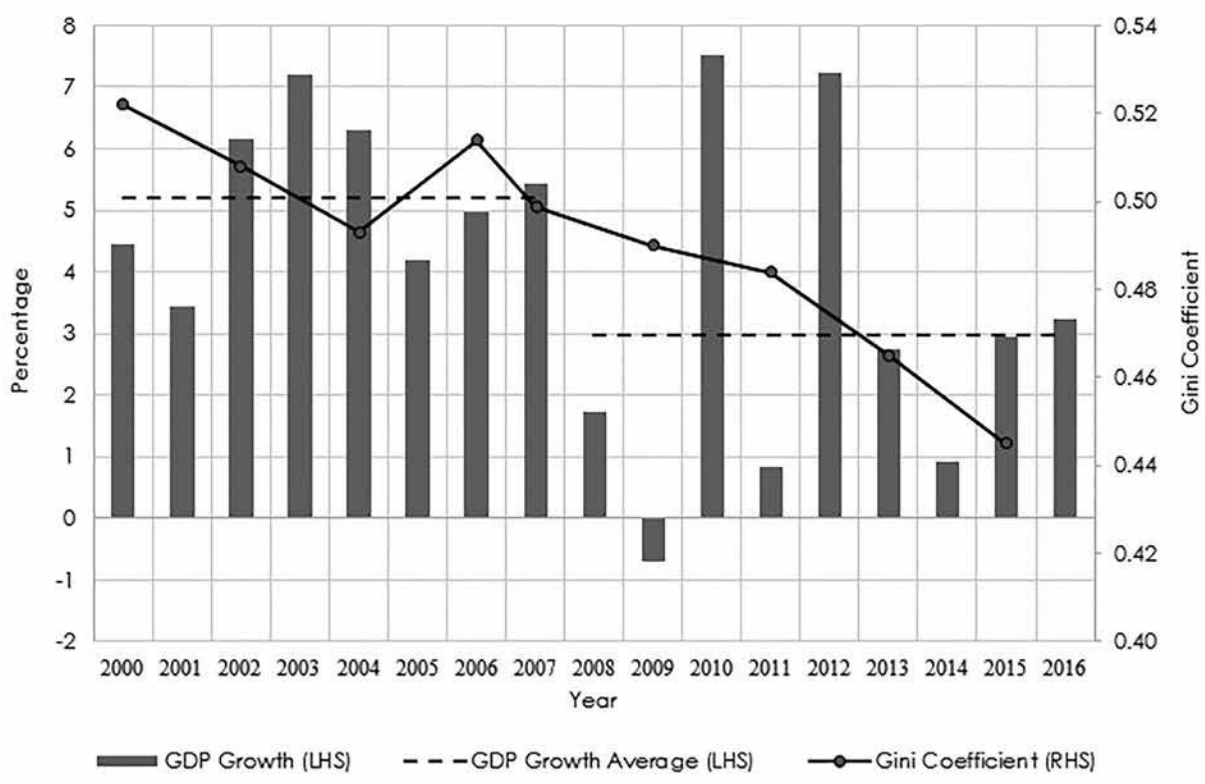
[2] *Stiglitz, J. E. 2012. The Price of Inequality: How Today's Divided Society Endangers Our Future. New York: W.W. Norton & Company.*

[3] *Kuznets, S. 1955. "Economic growth and income inequality." American Economic Review Vol. 45 No. 1 (March).*

[4] *Sukkumnert, D. 2017. "Deep down Thai economy: Hard and soft side." GM Live. (in Thai)*

[5] *Jawala, A. 2017. "Why does the Thai economy concentrate wealth and spread poverty?" Thairath. (in Thai)*

Figure 1: Thailand's GDP growth rate and Gini coefficients from 2000 to 2016



Source: World Bank, with authors' calculations.

the Stock Exchange of Thailand and the Market for Alternative Investment. Finally, the last section provides a brief summary.

2. SOME BASIC BACKGROUND AND METHODOLOGY

It is useful to lay out some of the basic background on Thailand's stock market. The stock market of Thailand serves as an intermediary for fundraising on behalf of its member companies. The market is divided into two major markets: the Stock Exchange of Thailand (SET), a market for member companies with more than 300 million baht in paid-up capital, and the Market for Alternative Investment (MAI), a market for small and medium-sized enterprises, having more than 20 million baht in paid-up capital. Using stock price movement, liquidity and current market value as indicators, member companies in the SET are generally classified into three groups: Top 50 (SET50), Top 100 (SET100), and Others (Non-SET100), in which the top firms are the ones that enjoy solid price movement with high liquidity and high current market value.

To examine the concentration of wealth and spread of poverty in Thailand's stock market, this paper applies two approaches, including analysis of ROA statistics, and of net profit distribution of the member firms in both SET and MAI.

The first approach involves analysis of

ROA statistics. ROA is an indicator measuring how profitable a company is relative to its total assets. A company with a higher ROA ratio is relatively more efficient in using its assets to generate earnings and has better growth prospects than those with a lower ROA. Technically, ROA is calculated as the ratio of:

$$ROA = \frac{Net\ income}{Total\ assets}$$

Alternatively, one may ignore the cost of financial debt and/or may use the average of total assets from different periods to calculate ROA as:

$$ROA = \frac{Revenue - Operating\ expenses}{Average\ total\ assets}$$ [6]

In this paper, the formula in the second definition is employed for the analysis; it is also commonly used by SET.

The second approach analyzes the net profit of firms in both SET and MAI. In this paper, three comparisons are used to examine the current inequality status of the firms in the stock market: (a) comparison of each firm's profitability; (b) comparison of profit-sharing among SET and MAI firms; and (c) comparison of each firm's performance, by industry.

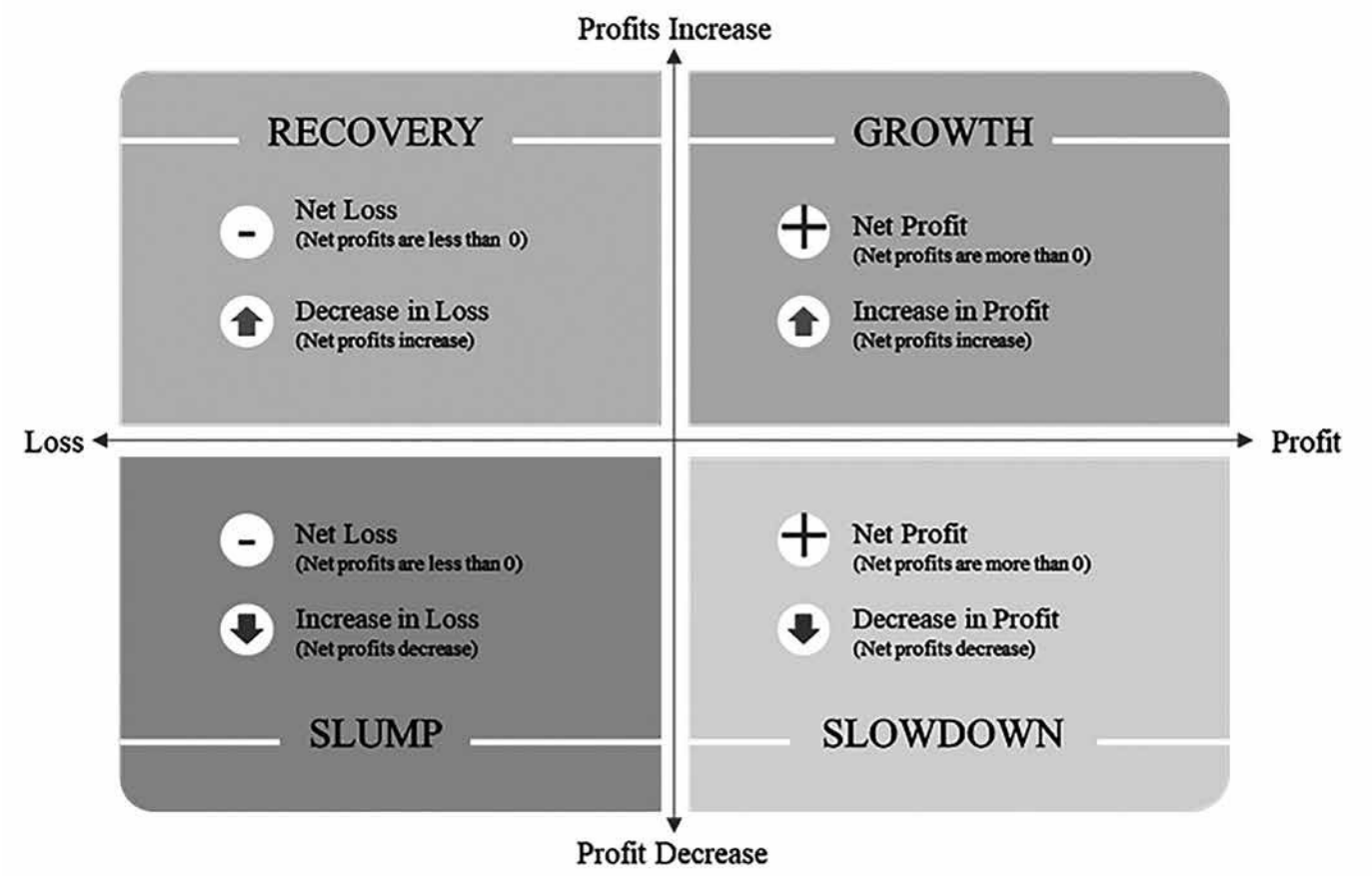
The first comparison is aimed at providing an overview of the overall profitability of all firms in the stock market. Both SET and MAI firms are classified into four groups based on net profit (positive or negative) and change in net profit (positive and negative): (a) Growth (positive in both net profit and change in net profit); (b) Slowdown (positive net profit and negative change in net profit); (c) Recovery (negative net profit and positive change in net profit); and (d) Slump (negative in both net profit and change in net profit). Each group represents the current status of the firm's profitability. A positive net profit signifies that the firm is making a profit, and a positive change in net profit implies that the firm is doing better than previously (Figure 2). Lastly, the firm's profitability is compared among three different broad groups (SET100, Non-SET100, and MAI) by counting the number of firms for each profitability status (Figure 2) for each firm's broad group. It is important to point out that the three

[6] *The formula to calculate average total assets in a period (t) is*

$$Average\ total\ assets = \frac{Total\ assets_{t-1} + Total\ assets_{t}}{2}$$

Where t stands for the current target period of the study (i.e. the second quarter of 2017 for the present paper) and t-1 indicates the period before the current time (i.e. the first quarter of 2017).

Figure 2: Classification of SET and MAI firms



Source: Authors' classification.

broad groups represent relatively large, medium, and small firms respectively in that order.

In the second comparison, profit-sharing among firm groups is examined by calculating the total net profit, total change in net profit, the average of net profit, and the average of change in net profit by three broad groups: firms in SET100, firms in Non-SET100, and firms in MAI. Then, the profitability of the three groups is considered using the cumulative summation of net profit and change in net profit by firm size. The cumulative summation is calculated by sorting the net profit from the highest to the lowest for each group, and cumulatively summing the net profit from the first firm in the first group (SET100) to the last firm in the last group (MAI). The resulting cumulative curve shows to what extent profits are concentrated in the top firms.

The third comparison is focused on industry comparison. Some industries may have gained more profits than others during the current economic recovery. The analysis also categorizes industries into four groups in the same way as in the first comparison. In this paper, industry is broadly disaggregated into 30 sub-industries (Table 1), which is consistent with the classification system used by the stock market authority.

Table 1: Sub-industries and sector symbol

Sub-industries	Sector symbol
Agribusiness	AGRI
Food & beverage	FOOD
Fashion	FASHION
Home & office products	HOME
Personal products & pharmaceuticals	PERSON
Banking	BANK
Finance & securities	FIN
Insurance	INSUR
Automotive	AUTO
Industrial materials & machinery	IMM
Packaging	PKG
Paper & printing materials	PAPER
Petrochemicals & chemicals	PETRO
Steel	STEEL
Construction materials	CONMAT
Construction services	CONS
Property development	PROP
Property fund & real estate investment trusts	PF&REIT
Energy & utilities	ENERG
Mining	MINE
Commerce	COMM
Health-care services	HELTH
Media & publishing	MEDIA
Professional services	PROF
Tourism & leisure	TOURISM
Transportation & logistics	TRANS
Technology	TECH
Electronic components	ETRON
Information & communication technology	ICT
Others	OTHER

Source: Stock Exchange of Thailand.

The analyses cover 648 companies in both SET and MAI, excluding only those companies delisted in the first half of 2017. The analysis of ROA employs data from the first quarter of 2014 to the second quarter of 2017, and the analyses of the net profit distribution compares the first-half statistics between 2016 and 2017.

3. RESULTS OF THE INEQUALITY ANALYSES

3.1 Analysis of the return on assets statistics

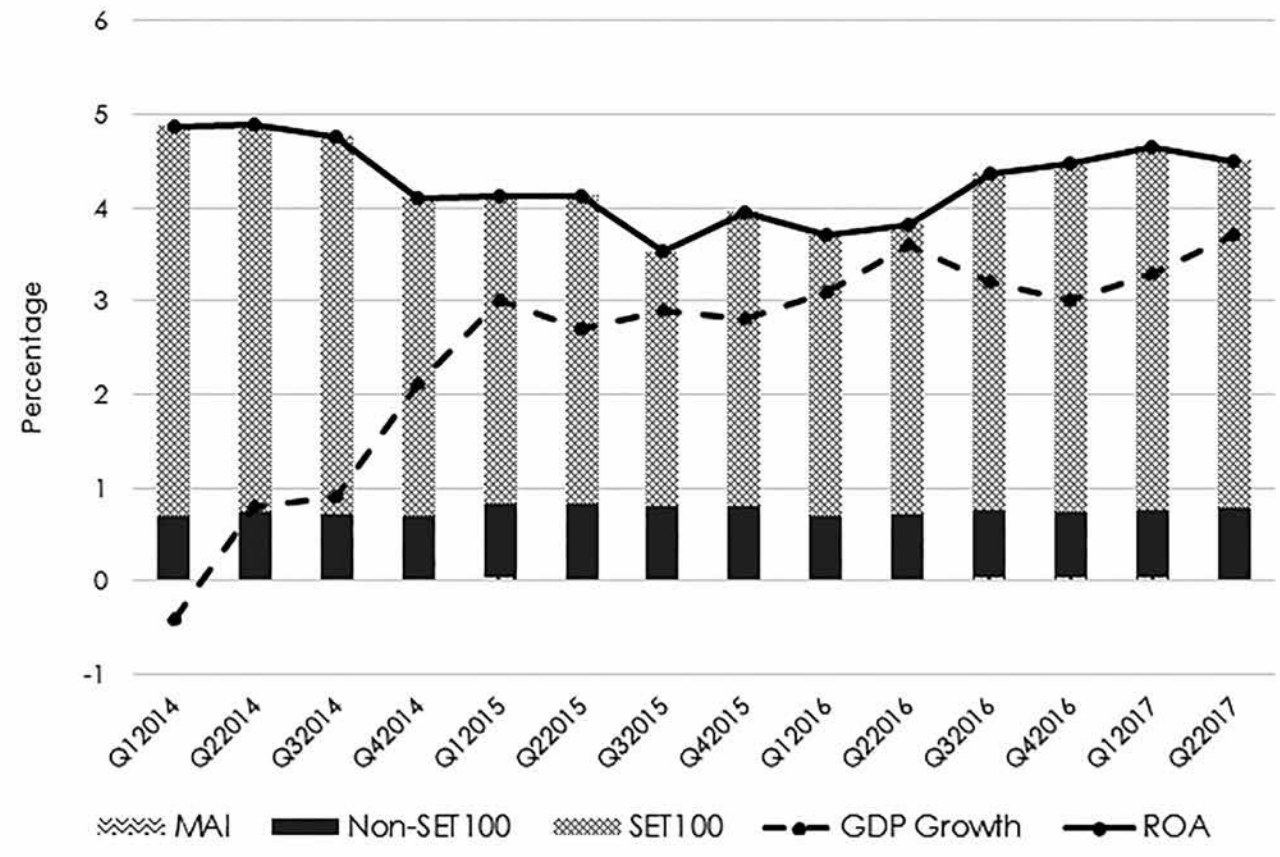
The results of the analysis of the ROA statistics are presented in this section. In this paper, the ROA statistics are compared with the GDP growth rate as a measure of inequality between firms in the stock market and firms not in the stock market. Because the GDP growth rate is the average of all activities in the economy, if the ROA statistics are larger than the GDP growth rate, then firms in the stock market are making more profits than those outside the stock market. On the contrary, if the ROA statistics are smaller than the GDP growth rate, then the opposite is true.

In the analysis it is found that, between the first quarter of 2014 and the second quarter of 2017, the ROA statistics (solid line) are always higher than the respective GDP growth rate (dashed line) (Figure 3). The differences between the two are an average of 1.8 percent. These two facts imply that firms in the stock market are getting more benefits from the ongoing economic recovery while the other firms in the country outside the stock market are at a disadvantage.

The ROA statistics can further be disaggregated by the sources of return for different firm size groups. In Figure 3, the total value of ROA (bar graph) is shown as the sum of profits from three firm size groups (SET100, Non-SET100, and MAI). Remarkably, the share of profits from SET100 is the largest and contributes up to 82.2 percent of all returns. On the contrary, the share of profits from MAI, barely seen on the graph, is only 0.6 percent. The difference in the contribution of profits from different size firms leads to a further examination to determine whether there is an inequality issue among firms in the stock market, which is the main subject of the subsequent sections.

Figure 3 shows comparison between the GDP growth rate (dashed line) and ROA statistics (solid line) from the first quarter of 2014 to the second quarter of 2017. The GDP growth rate of Thailand gradually recovered from negative GDP

Figure 3: GDP growth rates and return on assets



Source: World Bank, with authors' calculations.

growth (-0.4 percent) in the first quarter of 2014 to a growth rate of 3.7 percent in the second quarter of 2017. In contrast, ROA statistics fluctuated between 3.5 and 5 percent for the entire period. In addition, Figure 3 also depicts the net contributors to ROA by firms in three broad groups (SET100, Non-SET100, and MAI), which are shown by three different layouts in the bar graph.

3.2 Analysis of the net profit of firms in the Stock Exchange of Thailand and Market for Alternative Investment

In this section, the inequality situation among firms in the stock exchange market is examined using three different methods. Each subsection provides deeper understanding of the inequality in different aspects.

3.2.1 Comparison of firms' profitability

The results of the analysis of firms' profitability (Table 2) revealed that larger firms (SET100, Non-SET100), in general, are more profitable than smaller firms (Non-SET100, MAI), which is shown by the higher percentage of firms in the Growth group and by the lower percentage of firms in the Slump group. Interestingly, the large number of firms in the Slowdown and Recovery groups imply that some firms in their respective groups are weaker than their peers.

In addition, despite the fact that the econo-

Table 2: Overall profitability status of firms in different broad groups

		Growth	Slowdown	Recovery	Slump	Total
First half 2016-2017	SET100	59 (59.0%)	35 (35.0%)	0 (0.0%)	6 (6.0%)	**100** (100%)
	Non-SET100	179 (43.8%)	141 (34.5%)	26 (6.7%)	63 (15.4%)	**409** (100%)
	MAI	53 (38.7%)	36 (26.3%)	11 (8.0%)	37 (27.0%)	**137** (100%)
	Total	**291** (45.0%)	**212** (32.8%)	**37** (5.7%)	**106** (16.4%)	**646** (100%)
First half 2015-2016	SET100	64 (66.0%)	29 (29.9%)	2 (2.1%)	2 (2.1%)	**97** (100%)
	Non-SET100	195 (49.1%)	111 (28.0%)	18 (4.5%)	73 (18.4%)	**397** (100%)
	MAI	69 (55.6%)	21 (16.9%)	10 (8.1%)	24 (19.4%)	**124** (100%)
	Total	**328** (53.1%)	**161** (26.1%)	**30** (4.69%)	**99** (16.0%)	**618** (100%)

Source: Bank of Thailand and the Stock Exchange of Thailand, with authors' calculations.

my was improving between the two periods, the number of firms in the Growth group declined between the first half of 2016 and the first half of 2017. The number of firms in the Slowdown and Slump groups also increased during the same period, which happened in most of the cases (SET100, Non-SET100, MAI, Total), except for the number of firms in the Slump group for Non-SET100, which decreased from 73 to 63 firms.

To sum up, the comparison of firms' profitability shows that there are two types of inequality in the stock market. One is the inequality between firms of different size (between broad firm groups); the other is the inequality between firms of the same size (within each broad group). All of these findings imply that profits are unequally distributed among firms in the stock market.

Table 2 shows the overall profitability status of firms in different broad groups. SET and MAI firms are classified into four profitability categories based on net profit and change in net profit and are sorted into three broad groups (SET100, Non-SET100, and MAI).[7] In general, about 45-53 percent of firms are in the Growth group and about 26-32 percent of firms are in the Slowdown group. The percentage of firms in the Recovery and Slump groups is about 4-5 percent and 16 percent respectively. In considering each broad firm group, it can be seen that the majority of firms in the SET100 and Non-SET100 groups fall into the Growth and Slowdown groups. However, the majority of firms

[7] *For more details, see section 2.*

Table 3: Net profit in SET, by size of firms, in the first half of 2017

	Net profit (2016)	Net profit (2017)	Change in profit (2016-2017)	Net profit per firm (2016)	Net profit per firm (2017)	Change in profit per firm (2016-2017)
SET100	368,734	401,811	33,077	3,801	4,018	330
Non-SET100	75,081	84,890	9,809	189	207	24
MAI	3,545	1,944	-1,600	29	14	-11
Total	**447,360**	**488,646**	**41,287**	**724**	**756**	**64**

Source: Stock Exchange of Thailand, with authors' calculations.

in the MAI group fall into the Growth, Slowdown and Slump groups.

3.2.2 Comparison of profit sharing among SET and MAI firms

The results of the analysis of profit sharing among the SET and MAI firms are shown in Table 3. In that table, it may be observed that the total net profit of all firms increased by 41,287 million baht between the first half of 2016 and the first half of 2017, from 447,360 million baht in the first half of 2016 to 488,646 million baht in the first half of 2017. On average, the net profit of all firms increased from 724 million baht per firm to 756 million baht per firm, which is equivalent to an increase of 64 million baht per firm when taking into account the change in the total number of firms between the two periods.

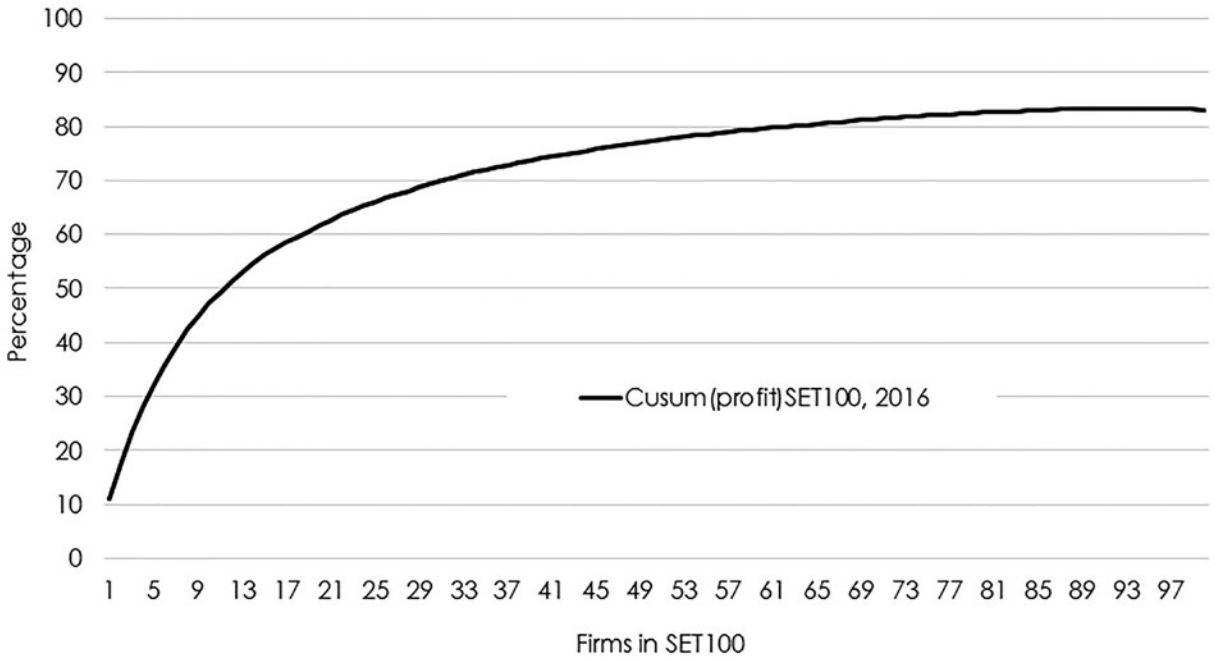
In comparing the three broad firm groups between the two periods, firms in the SET100 have the highest net profit gains, both in total value (an increase of 33,007 million baht) and in average value (an increase of 330 million baht, on average, per firm). Non-SET100 firms also gained a good share of profits, with a gain of 9,809 million baht in total net value, or an average of 24 million baht per firm. Unfortunately, MAI firms experienced a negative return of 1,600 million baht in the value of total losses, or an average of 11 million baht per firm. This comparison affirms the inequality situation observed in the previous subsection, with additional information that not only are large firms gaining more profits but also firms at the bottom (MAI firms) are worse off following the recent economic recovery.

Next, the cumulative curves in Figures 4, 5, and 6 depict the degree of profits concentrated in the top firms.

Figure 4 depicts a cumulative curve representing the profit-sharing situation in the SET100 firms in the first half of 2017. The higher cumulative sum line would imply that few firms had a higher profit share of all net profits in the stock market; hence, this would indicate a higher degree of profit concentration.

The current inequality situation in the Stock Exchange of Thailand, insinuated by the cumulative curve, is that the top 20 firms have a shared profit of 63.27 percent of all net profits in the stock market, and all 100 firms in the SET100 have 82.81 percent of such profits.

Figure 4: Cumulative curve of SET100 firms in the first half of 2017



Source: Bank of Thailand and The Stock Exchange of Thailand, with authors' calculations.

In Figure 5, the cumulative curve in Figure 4 has been disaggregated into two components: the cumulative net profit curve of the first half of 2016 and the cumulative change in the profit curve between the first half of the 2016 and the first half of 2017. If the former curve is below (above) the latter curve, firms at the top will have a higher (lower) share of profits between the two periods than in the first half of the 2016; hence, net profit would be more (less) concentrated in the top firms in the first half of 2017 than in the first half of 2016 when the cumulative curve of the first half of 2017 was higher (lower).

As shown in Figure 5, the cumulative net profit curve of the first half of 2016 (solid line), being well below the cumulative change in the net profit curve between the first half of 2016 and the first half of 2017 (dashed line), indicates that net profits were more concentrated in the top firms in the first half of 2017.

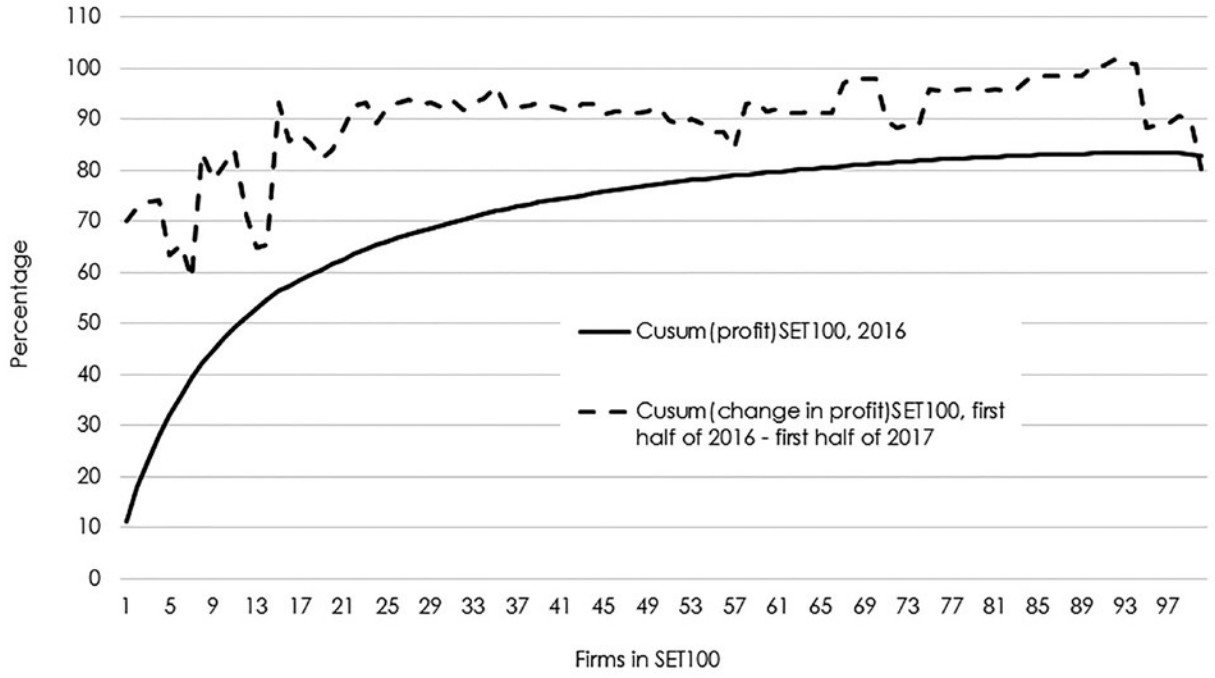
Finally, the analysis is extended to cover not only the SET100 firms but also Non-SET100 and MAI firms (Figure 6). The results are shown in Figure 6.

Surprisingly, for Non-SET100 firms, which are shown in the previous section as having an inequality issue within the group, the inequality situation improved in the first half of 2017, which implies that profit sharing of firms in the group became more even.

For MAI firms, the result is mixed. The top 17.5 percent of MAI firms appear to have gained relatively more profits, while 8.0 percent of the bottom firms had relatively more equal profits.

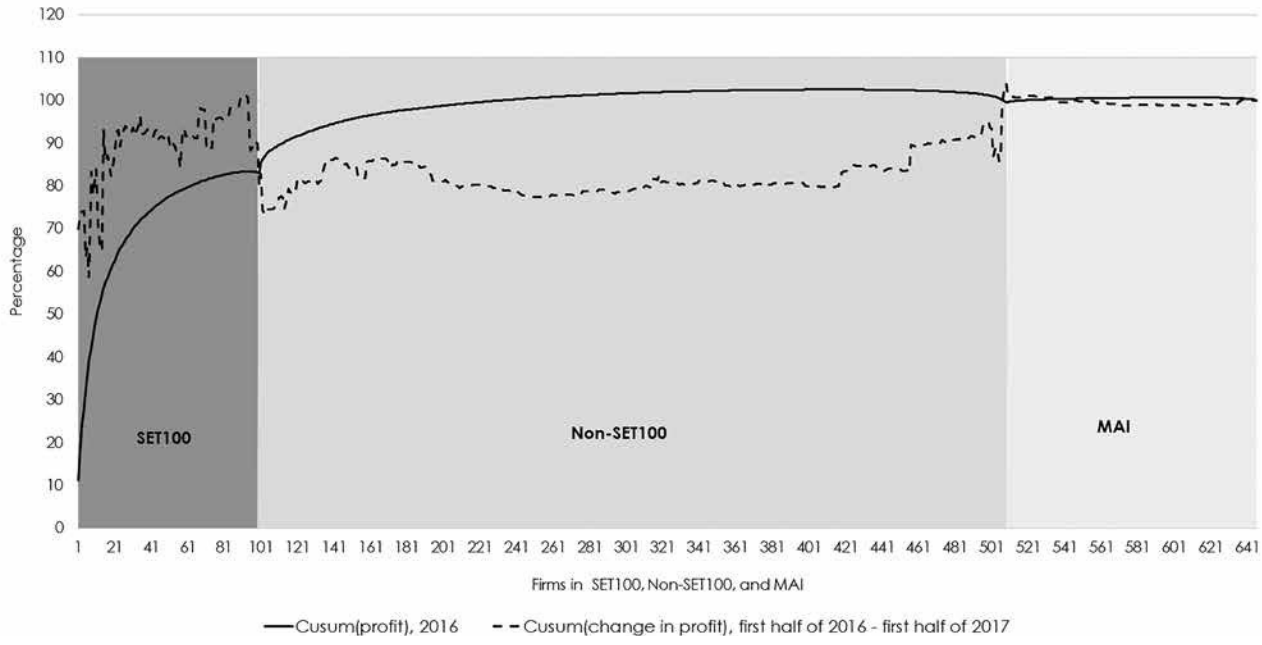
In this section, a close look is taken into the inequality issue of profit sharing among firms in the stock market. The cumulative curves show that inequalities may be observed within and between all three broad firm sizes. However, the inequality

Figure 5: Cumulative net profit curve of the first half of 2016 and the cumulative change in net profit curve between the first half of 2016 and the first half of 2017 (Only SET100 firms)

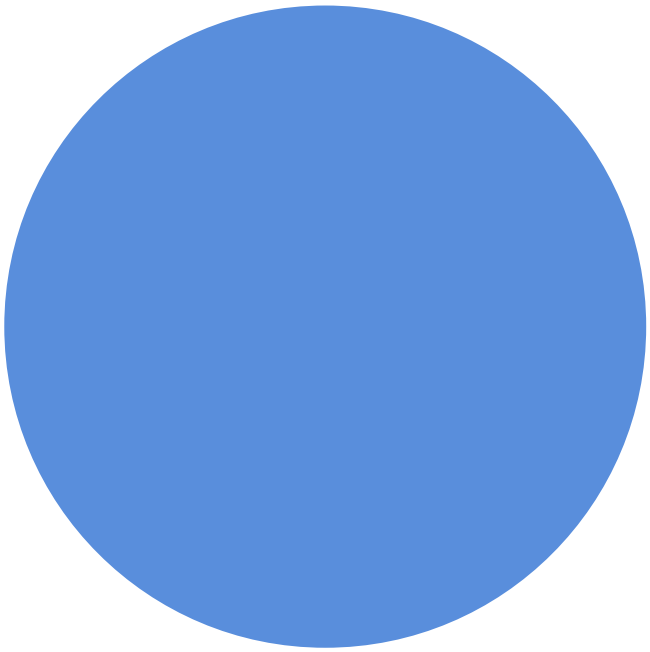


Source: Bank of Thailand and Stock Exchange of Thailand and the author's calculations.

Figure 6: Cumulative net profit curve of the first half of 2016 and the cumulative change in net profit curve between the first half of 2016 and the first half of 2017 (All three broad groups)



Source: Bank of Thailand and Stock Exchange of Thailand, with authors' calculations.



situation worsened in the SET100 and top firms in the MAI groups and lessened in the Non-SET100 and bottom firms in the MAI groups. Thus, profits were found to be concentrated in the top firms (in both the SET and MAI markets), with poverty spread among the laggard firms.

3.2.3 Comparison of firms' performance by industry

In Figure 7, firms' performance is depicted using a two-dimensional graph. The horizontal axis shows industries' net profit in the first half of 2017, and the vertical axis displays industries' change in profits between the first half of 2016 and the first half of 2017.

Using the net profit as a main benchmark, industry performance can be classified into three groups: one group having superior net profits includes only one industry (ENERG); the second group having moderate net profits comprises FIN, HELTH, TRANS, COMM, FOOD, PETRO, TECH, PROP, ICT, CONMAT and BANK; and the last group, which had very low net profits is constituted by the remaining industries: ETRON, INSUR, FASHION, AUTO, PKG, MEDIA, TOURISM, IMM, MINE, PERSON, PROF, HOME, REHABCO, PAPER, AGRI, STEEL, CONS, OTHER.[8]

In comparison, the ENERG industry outperformed other industries in both net profits and change in net profits. Its profit was at 31.37 percent of all net profits and 105.91 percent of all changes in net profits. In the second group, the BANK industry led the group in terms of net profits, but its profits were somewhat the same (unchanged from the previous year). For other industries in the second group, six of them showed a positive change in net profits, while four of them had a negative change in net profits. The net profits of all of these industries seem to stay somewhere in this region, except for the ICT industry, which experienced a strong negative change in net profits. Finally, the last group seems to be on a declining trend, with only six industries having recorded a positive change in net profits.

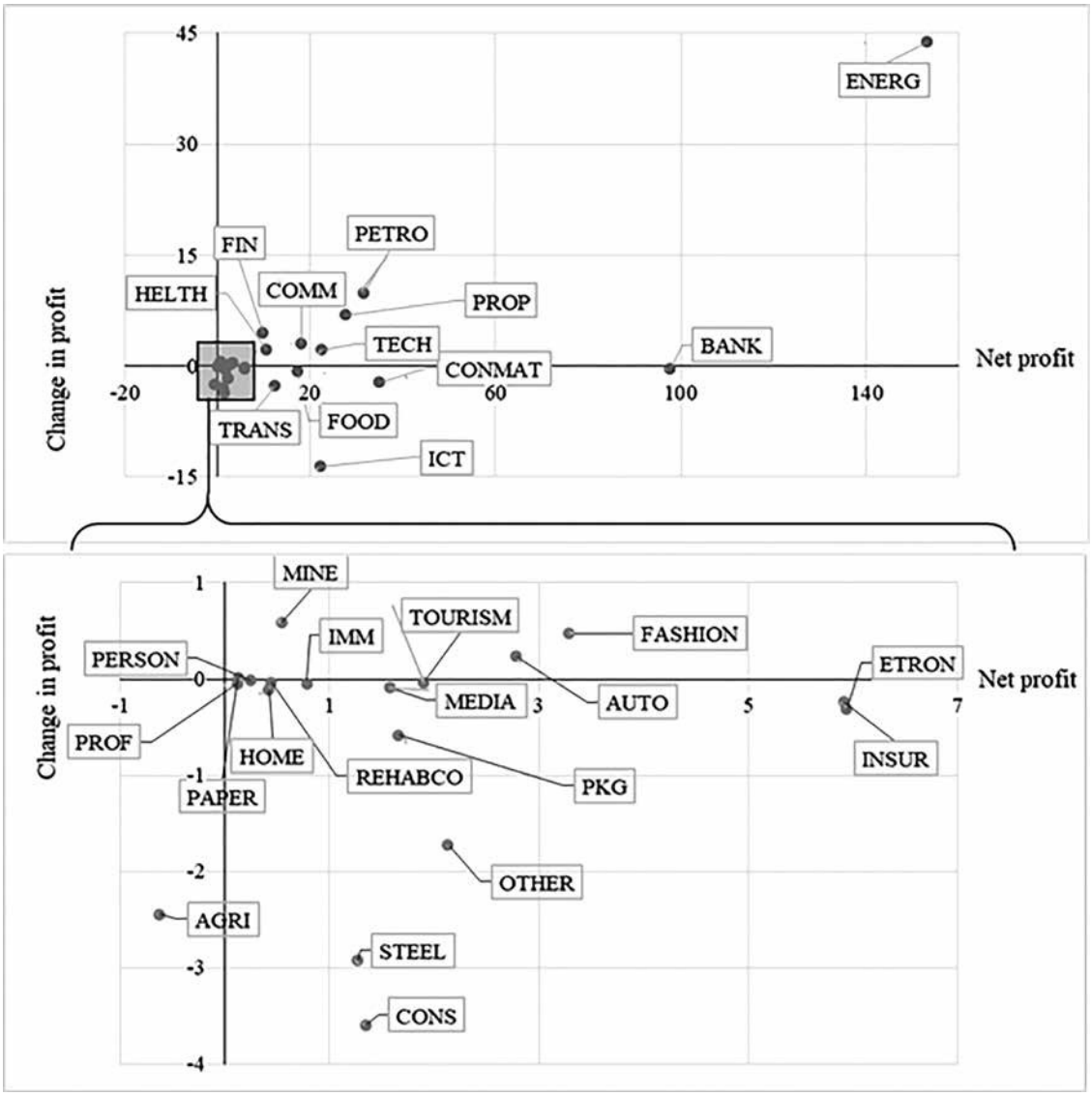
Thus, while the ENERG industry is stronger, other industries seem to remain with their peer group, or perform worse, as in the case of the ICT industry. These findings show that Thailand also faces an inequality issue with regard to the concentration of wealth and spread of poverty in terms of industry.

4. CONCLUSION

In general, Thailand is one of the countries that has had a good experience with taming the inequality problem. Even with a slower GDP growth after the 2008/09 financial crisis, inequality status, measured by a standard inequality measure, has

[8] See definition of industry in section 2.

Figure 7: Firms' performance by industry (Millions of baht)



Source: Stock Exchange of Thailand, with authors' calculations.

been consistently improving over time. However, many experts have shown recently a concern that the inequality issue for Thailand may be worsening. In the recent economy recovery, the benefits may accrue only to those who have more power, and profits may be concentrated at the top of the pyramid, in a situation best described as the concentration of wealth and spread of poverty.

This paper partially addresses the issue by examining data on the stock market of Thailand. By performing analyses on ROA and net profit statistics, it was found that firms in the stock market gained more from the recent economic recovery than firms outside the market. In addition, within the stock market, profit sharing among the firms was also found to be largely different. Relatively

large firms have made a greater share of profits, while medium-sized firms gained a moderate share of profits. Firms at the bottom (MAI firms), on average, posted a negative net profit.

An inequality issue was also observed within broad groups of firms of similar size. However, the analyses show that firms at the top (SET100 and top firms in MAI) gained larger and larger shares of the profits, while the net profits of firms at the bottom (Non-SET100 and bottom firms in MAI) became more and more level (showing less inequality).

A closer look at the industry level would indicate that the energy industry outperforms other industries by comparison, and the gap seems to widen with other industries remaining with their own peer groups. For Thailand, it seems that the concentration of wealth and the spread of poverty can be observed in all three aspects: between firms in/out of the stock market, between firms of different sizes, and between leading and other lagging industries.

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