

2015 Outward Foreign Direct Investment of Thai Listed Firms

Research Department

The Stock Exchange of Thailand

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Executive Summary

The number of Thai listed firms undertaking outward foreign direct investment (OFDI) has continuously increased. At the end of 2015, there are 192 firms investing abroad, up from 173 firms at the end of 2014. These 192 listed firms undertaking OFDI accounts for 37% of the total 517 listed firms on SET.

Out of the 192 firms, 79% of them invested in ASEAN and 60% of them invested in CLMV. Vietnam became the main investment target. As for the industry that had the most number of Thai listed firms undertaking OFDI, the Resources industry retained its number one rank from previous year.

The net value of Thai listed firms' OFDI in 2015 was THB 52 billion, declining from the THB 116 billion amount in 2014. This was partly due to a large divestment transaction of THB 28 billion in 2015 of one company.

Revenue from abroad of Thai listed firms has been continuously growing during the period of 2006 - 2014. However, in 2015, the foreign revenue of 110 firms that had continuously been reporting from 2006 to 2015 dropped 7% YoY, while their domestic revenue fell even more at 9%. The main reasons for their drop in revenue is the dramatic fall in oil prices which directly affected the revenue of the oil firms. Despite of their revenue decline, the ratio of foreign revenue to total revenue of these 110 firms increased to 46% in 2015 from 45% in 2014.

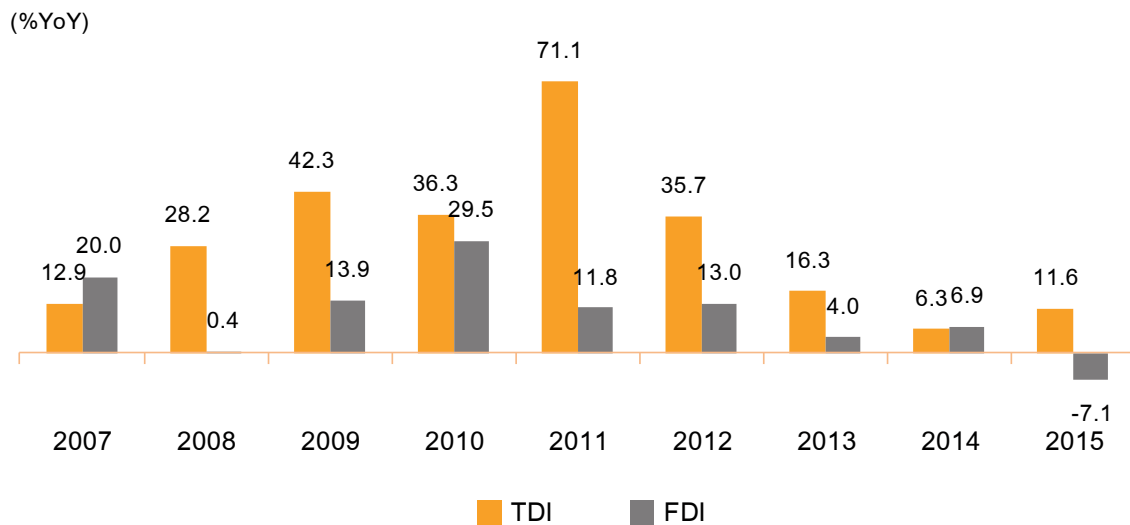
In order to assess the capability enhancement from the internationalization of these firms, the "Economic Exposure Universe" has been created to compile the Thai listed firms undertaking OFDI and/or receiving revenue from abroad. The firms are grouped into 3 regions as: Global, ASEAN and CLMV Economic Exposure Universe. In 2015, The Global Economic Exposure Universe consists of 282 firms, an increase from 262 firms in 2014. The ASEAN Economic Exposure Universe covered 167 firms and the CLMV Economic Exposure Universe had a total of 125 firms.

Preface

The economic development has created interconnection among economic zones globally in trade, investment, production, consumption, transportation, communication, among others. As such, all of us have to adjust ourselves to grasp the opportunities and minimize risks to cope with the changing economic landscape.

Thai businesses have been actively reacting to these changes during the past 10 years (2006-2015) especially in the area of outward foreign direct investment (OFDI). Despite being on the list of countries that predominantly receive foreign investment. The growth rate of cumulative OFDI value of all Thai firms (TDI) is now higher than the growth rate of cumulative inward foreign direct investment value in Thailand (FDI). (Figure 1)

Figure 1 TDI and FDI growth



Source: Bank of Thailand, calculated by The Stock Exchange of Thailand

Many listed firms on The Stock Exchange of Thailand have expanded their investment beyond home boundary for growth. The objectives of investment abroad vary depending on the types of

businesses as well as timing and can be classified into 3 categories that are (1) market expansion, (2) new resource exploration and (3) competitive capabilities enhancement such as search for production efficiency, technology transfer and innovation.

Market expansion and resource exploration are necessary for some large firms because the scale of the Thai economy is not big enough to support their further growth. Moreover, growth boosted by overseas expansion of large firms can benefit both the shareholders and all stakeholders together with supply chain that are based in Thailand.

As a result, this study on the current status and nature of OFDI of Thai listed firms will be useful in formulating policies for the further outward investment to meet the change in economic environment and provide the sustainable growth opportunity for Thai businesses.

Chapter 1: Database Construction and Definition

Outward foreign direct investment (OFDI) database of listed firms in The Stock Exchange of Thailand has been created to study the current direct overseas investment activities as well as revenue from abroad of Thai listed companies. The published research paper covers all listed firms in The Stock Exchange of Thailand (SET) except those in rehabilitation. The number of firms used for compiling the database was as of the end of each year during the period of 2006-2015.

1.1 Data Sources

OFDI and foreign revenue data were obtained from the firms' publicly disclosed official reports such as notes of financial statement, 56-1 reports, annual reports and other corporate presentations.

1.2 Important Definitions

“Outward foreign direct investment (OFDI)” refers to investment in shares of firms abroad by investors (Thai listed firms). The investors must have controlling stakes whereby the investees can be subsidiaries, associated companies, joint ventures as well as investment assets such as factories built by the investors themselves. In addition, objectives of investment stated by listed firms have to be clearly identified. However, investment to set up an investment company or a holding firm is excluded. Portfolio investment is also excluded.

“Revenue from abroad” is the revenue derived from operation overseas and exports revenue from factories based in Thailand. Nevertheless, some firms usually classify revenue from overseas based on geographical locations of customers without indicating whether the amount is derived from operation overseas or exports. All foreign revenue that fall under these criteria will be classified as ‘revenue from abroad’.

This analysis, firms will be grouped into 2 classifications: 1. based on the **industry**, and 2. based on the **size** by using market capitalization value.

According to SET's categorization, there are 8 different industries and 28 sectors. Each **industry** consists of various **sectors** as shown in Table 1.

Table 1 Industry and Sector on SET

| Industry | Sector |
|----------------------------|--|
| 1. Agro & Food Industry | 1.1 Agricultural Business 1.2 Food and Beverage |
| 2. Consumer Products | 2.1 Fashion 2.2 Home & Office Products 2.3 Personal Products & Pharmaceuticals |
| 3. Financials | 3.1 Banking 3.2 Finance & Securities 3.3 Insurance |
| 4. Industrials | 4.1 Automotive 4.2 Industrial Materials & Machinery 4.3 Paper & Printing Materials 4.4 Petrochemicals & Chemicals 4.5 Packaging 4.6 Steel |
| 5. Property & Construction | 5.1 Construction Materials 5.2 Construction Services 5.3 Property Fund & REITs 5.4 Property Development |
| 6. Resources | 6.1 Energy and Utilities 6.2 Mining |
| 7. Services | 7.1 Commerce 7.2 Health Care Services 7.3 Media & Publishing 7.4 Professional Services 7.5 Tourism & Leisure 7.6 Transportation & Logistics |

| Industry | Sector |
|---------------|---|
| 8. Technology | 8.1 Electronic Components 8.2 Information & Communication Technology |

Also, the firms are grouped according to the market capitalization as shown below:

- 1) Listed firms ranked 1-50 in terms of market capitalization are in SET50 group
- 2) Listed firms ranked 51-100 in terms of market capitalization are in SET51-100 group
- 3) Listed firms ranked 101-200 in terms of market capitalization are in SET101-200 group
- 4) Listed firms ranked 201-300 in terms of market capitalization are in SET201-300 group
- 5) Listed firms ranked 301 onward in terms of market capitalization are in SET301+ group

Amounts of revenue vary according to the sizes of market capitalization. The groups with larger market capitalization generally post higher average earnings and vice versa (Table 2).

Table 2 Average revenue and range of revenue of firms categorized by market capitalization in 2015

| Groups | Average Revenue (THB million) | Highest Revenue (THB million) | Lowest Revenue (THB million) |
|------------|----------------------------------|----------------------------------|---------------------------------|
| SET50 | 144,450 | 2,063,727 | 3,777 |
| SET51-100 | 17,185 | 192,723 | 1,768 |
| SET101-200 | 17,802 | 179,605 | 409 |
| SET201-300 | 4,945 | 21,671 | 60 |
| SET301+ | 2,424 | 33,914 | 10 |

1.3 Limitations of database

Since there are neither regulations nor standards on OFDI and revenue from abroad reporting system, listed firms may or may not report such information. As such, their database may not fully reflect all the information.

To increase efficiency and accuracy of database of OFDI and revenue from abroad, it is beneficial for the understanding possibly and implication of the future policy of the Thai listed companies in the future. If the information on these foreign investment and revenue of each company be disclosed and recorded automatically and regularly in the centralized database that will be useful for analysis.

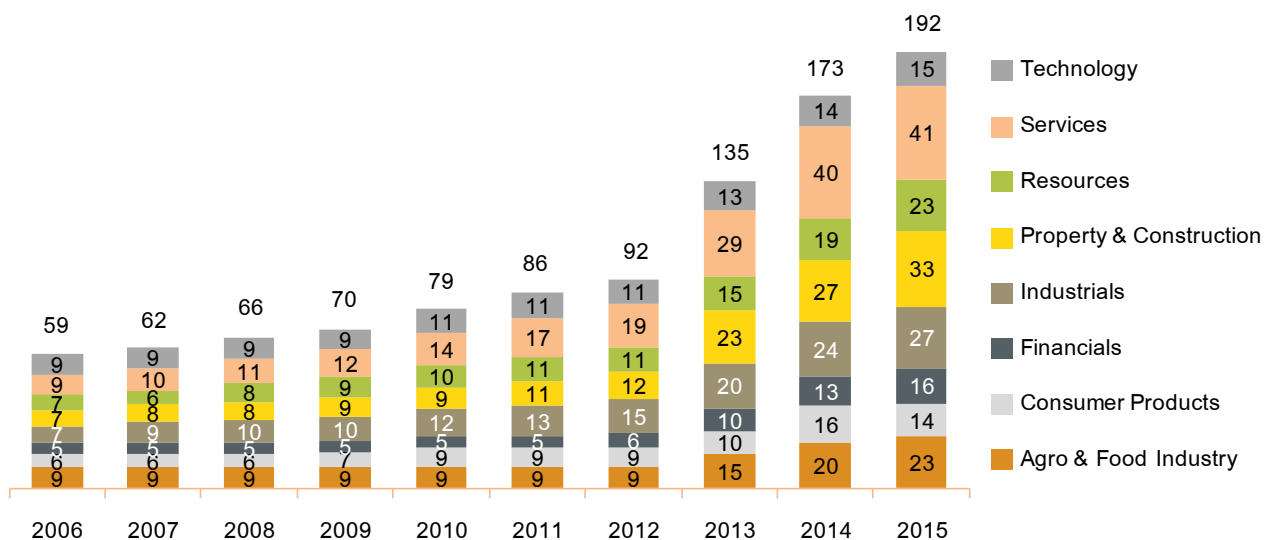
Chapter 2: Status of Listed Firms' Outward Foreign Direct Investment

Over the past 10 years, the number of Thai listed firms undertaking outward foreign direct investment (OFDI) has increased steadily. By the end of 2015, there were 192 firms, an increase from 173 firms in the previous year. The Services industry had the largest number of firms investing overseas: 41 firms.

2.1 Outward Foreign Direct Investment Status Classified by Industry

In 2015, the number of Thai listed firms undertaking OFDI increased in every industry except Consumer Products industry. Property & Construction industry showed the highest rise in number of firms. (Figure 2)

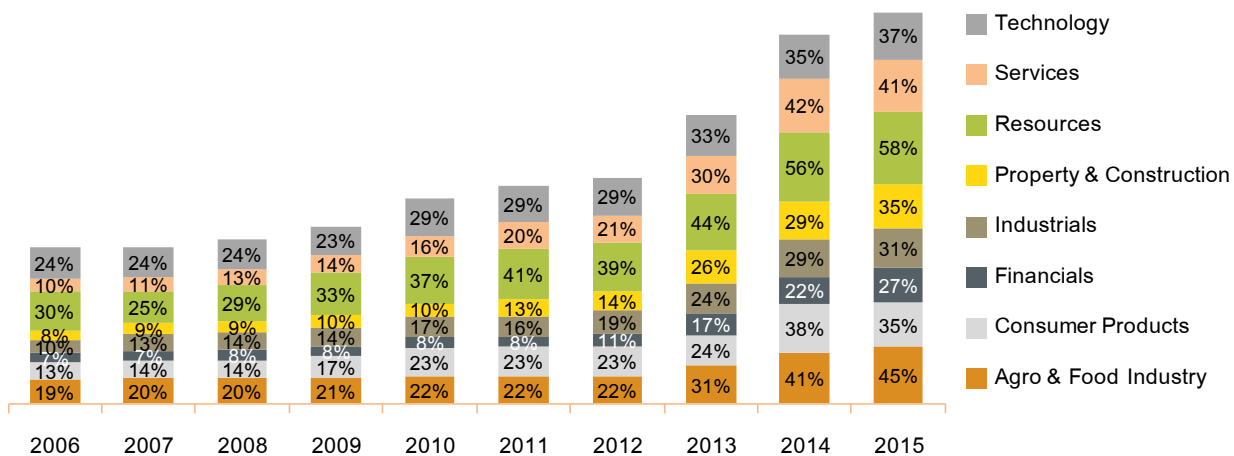
Figure 2 Number of Thai listed firms who undertake OFDI classified by industry



As there are unequal number of firms in different industries. The ratio of firms undertaking OFDI to the total number of firms in each industry should be taken into consideration. In 2015, Resources industry had the highest proportion of firms undertaking OFDI, representing 58%, followed by Agro &

Food Industry industry 45%, and Services industry 41%, while Financials industry had the lowest proportion of 27%. (Figure 3)

Figure 3 The ratio of Thai listed firms undertaking OFDI to the total number of firms in each industry

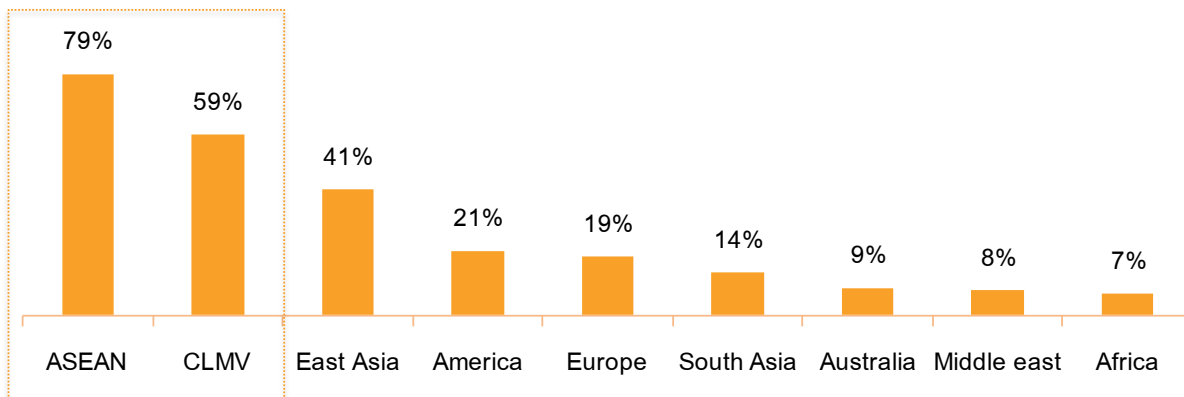


2.2 Outward Foreign Direct Investment Status Classified by Regions

As of the end of 2015, ASEAN was the main investment target region with 79% of the total 192 firms undertaking OFDI. Breaking into sub-regions, CLMV, a high growth sub-region, attracted 59% of the total 192 firms. It is interesting to note that many companies invested in more than one region. Thus, the calculation contained repetitive counts of the number of the company if it invested in more than one region. (Figure 4)

Figure 4 The investment target regions at the end of 2015

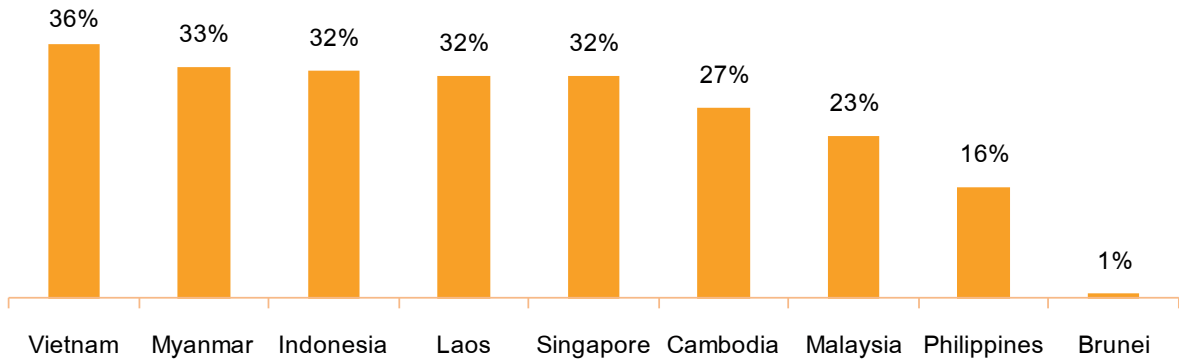
(The proportion of listed firms invested in each region to the total 192 companies with overseas investment.*)



*Note: A company has invested in more than one region, the calculation contained repetitive counts of the company if it invested in more than one region.

Looking into ASEAN, the main investment target region, there were 55 Thai listed firms with investment in Vietnam, the highest number comparing to other ASEAN countries in 2015, attracting 36% of 152 firms that invested in ASEAN, followed by Myanmar, Indonesia, Laos and Singapore respectively, holding around 32-33% of 152 firms investing in ASEAN. (Figure 5)

Figure 5 The investment target countries in ASEAN at the end of 2015

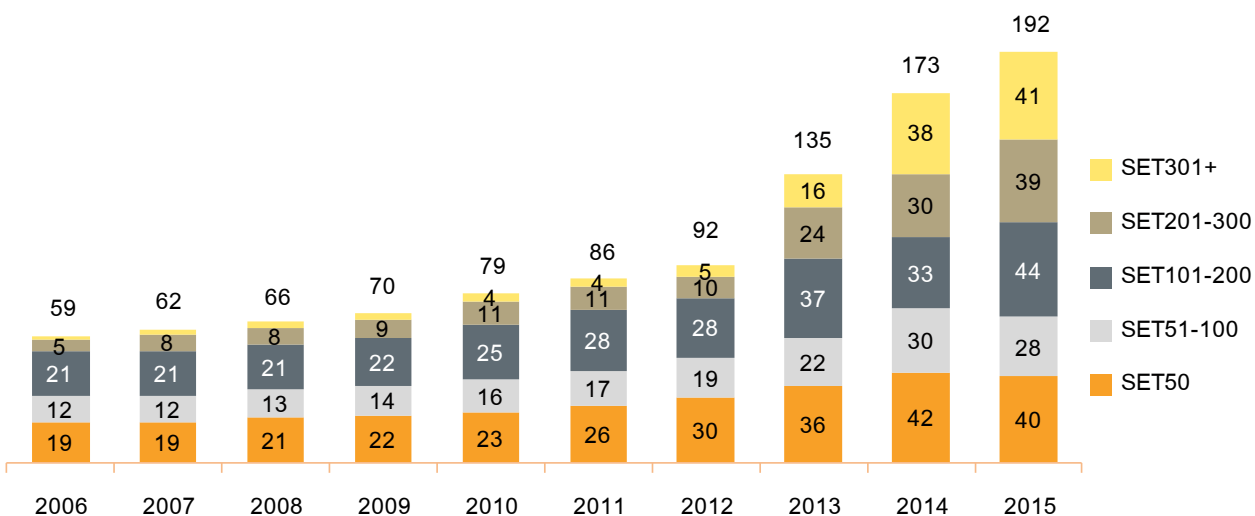


*Note: A company has invested in more than one region, the calculation contained repetitive counts of the company if it invested in more than one region.

2.3 Outward Foreign Direct Investment Status Classified by Firms’ Size

During the past decade, there has been an increasing number of firms investing abroad, not only large firms but also small firms. However, in 2015, the number of large firms in SET100 group undertaking OFDI was lower than the previous year but the number of firms in Non-SET100 group undertaking OFDI is increasing. (Figure 6)

Figure 6 Number of Thai listed firms undertaking OFDI classified by firms' size



There are possible reasons for changes in number of firms undertaking OFDI in each group such as : 1) Changes of firms from one group to another due to changes in their market capitalization 2) New Listing of firms that have already had OFDI prior to being listed 3) Delisting of firms undertaking OFDI 4) New OFDI for the existing firms and 5) Complete withdrawal of OFDI by existing firms.

For this research study, we analyzed only changes caused by existing firms undertaking OFDI for the first time; and existing firms that completely withdrew their investment. Not taken into consideration were: firms that have already had OFDI prior to being listed, the delisted firms with OFDI, and the firms transferred from one group to another. The reason for exclusion is to emphasize only on the decisions of firms whether to start or to stop undertaking OFDI, regardless of other activities that do not truly reflect the firms' investment strategies.

Figure 6 shows that, in 2015 there were 68 large firms on SET100 (SET50 and SET51-SET100) undertaking OFDI, compared to 72 firms from the previous year. The drop is from the fact that 2 existing firms had new OFDI in 2015, while none of the firms completely withdrew their overseas investment.

As for the Non-SET100 (SET101-200, SET201-300 and SET301+) group, there were 124 firms undertaking OFDI, a change or increase of 23 firms from previous year. The figure came from 14 existing firms undertaking OFDI for the first time while 3 being completed withdrawers. The rest of the changes resulted from other factors such as new listing, delisting issue or transfer of firms with market cap change.

Chapter 3: Value of Outward Foreign Direct Investment

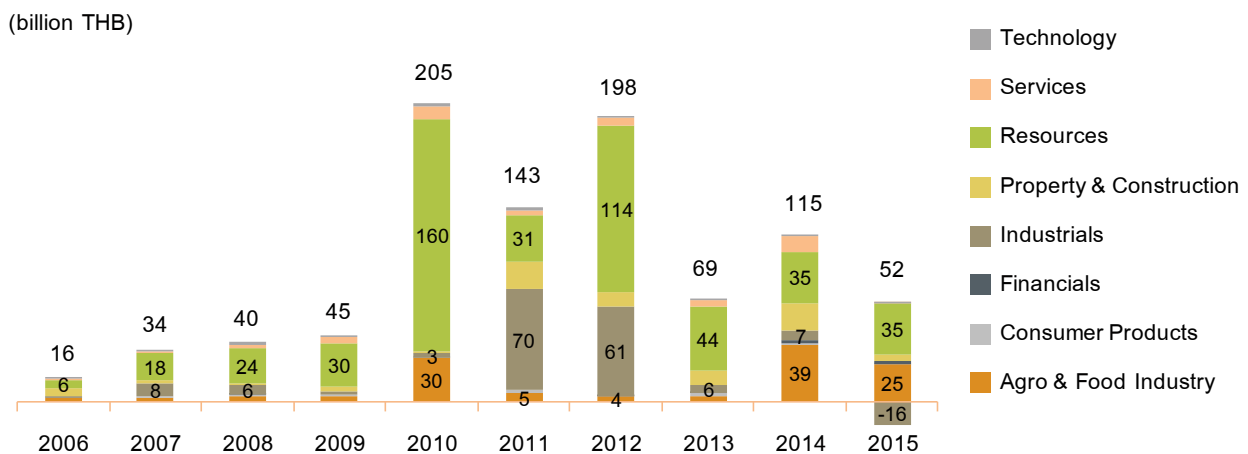
Value of outward foreign direct investment (OFDI) refers to the amount of capital flow to invest abroad. In 2015, Thai listed firms had the OFDI net value of THB 52 billion, a decrease from THB 115 billion in 2014 due to the total OFDI withdrawal of THB 33 billion.

3.1 Value of Outward Foreign Direct Investment Classified by Industry

Thai Listed firms in Resources industry recorded the highest net OFDI value at THB 35 billion in 2015. It was mainly contributed by PPT Exploration and Production pcl with THB 15 billion continuing investment in a petrochemical subsidiary in Canada. The industry with second highest OFDI was the Agro & Food Industry industry with net value of THB 25 billion. The largest investor in this industry was Charoen Pokphand Foods pcl whose investment in the chicken-processing subsidiary in Russia was worth more than THB 15 billion.

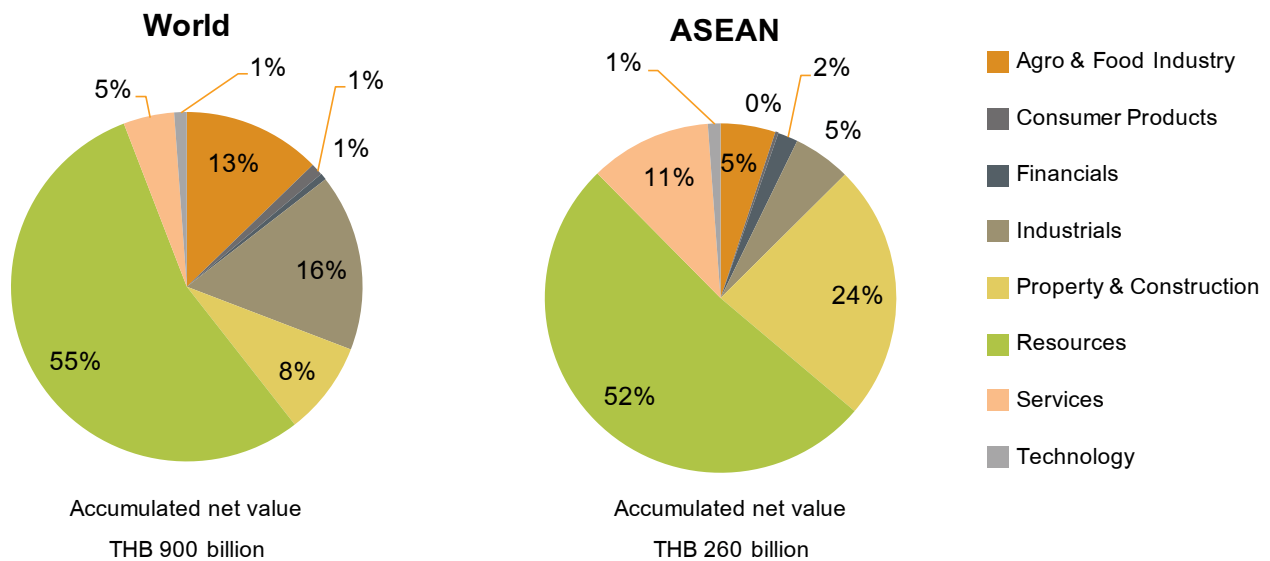
Meanwhile, the Industrials industry recorded negative net OFDI due to Sahaviriya Steel Industries pcl's THB 28 billion withdrawal from a steel business in the United Kingdom. (Figure 7)

Figure 7 Net value of OFDI classified by industry



The OFDIs of Thai listed firms around the world and ASEAN were rather consistent in terms of proportion of accumulated net value of OFDI from each industry. Considering the accumulated net OFDI in 2006-2015, listed firms in Resources industry hold the most OFDI, covering more than 50% of the net accumulated OFDI around the world including ASEAN followed by Industrials and Agro & Food Industry industries respectively at the world-wide level, and followed by Property & Construction and Services industries at the ASEAN level. (Figure 8)

Figure 8 Accumulated net value of OFDI between 2006 – 2015 classified by industry

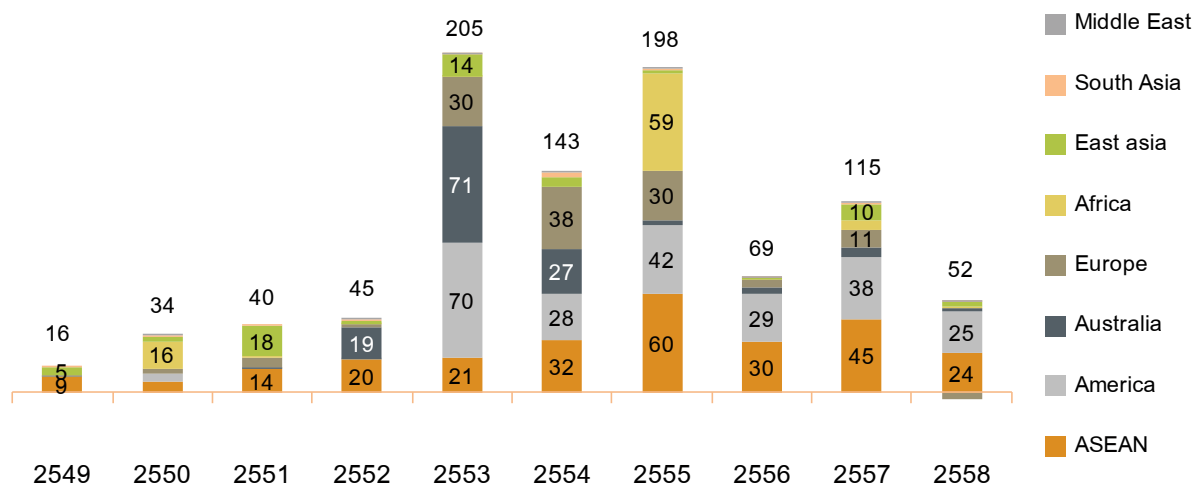


3.2 Value of Outward Foreign Direct Investment Classified by Region

In 2014 and 2015, ASEAN and North America were the main target regions in terms of the amount of capital flow. The net value of investment in ASEAN was THB 24 billion, each investment transaction was not more than THB 5 billion. As for North America, the total value of investment was THB 25 billion. The main investor in this region was PPT Exploration and Production pcl with THB 15 billion continuing investment in petrochemical subsidiary in Canada. (Figure 9)

Figure 9 Net value of OFDI classified by investment target region

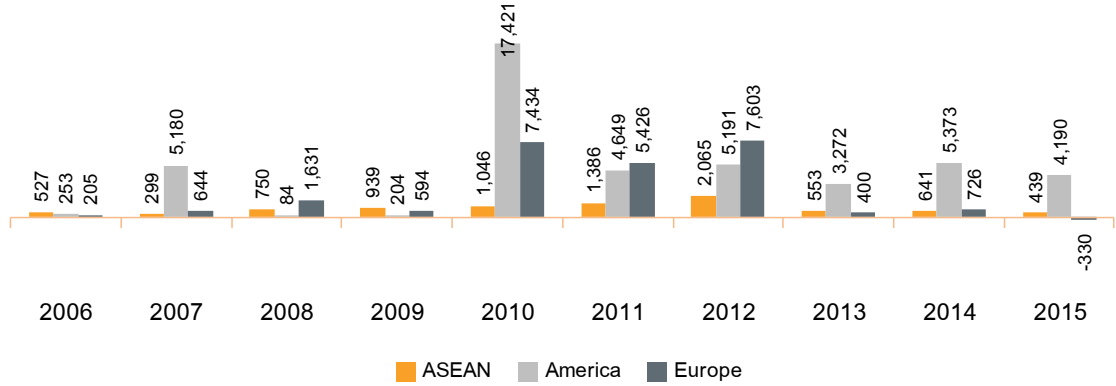
(billion THB)



Comparing the 3 main investment target regions: ASEAN, North America and Europe, ASEAN received the lowest average net investment value per Thai listed firm. (Figure 10) If we classified ASEAN into ASEAN-5 and CLMV, the average net investment value per Thai listed firm undertaking OFDI in ASEAN-5 was higher than that in CLMV. (Figure11)

Figure 10 Average net investment value per firm classified by main investment target region

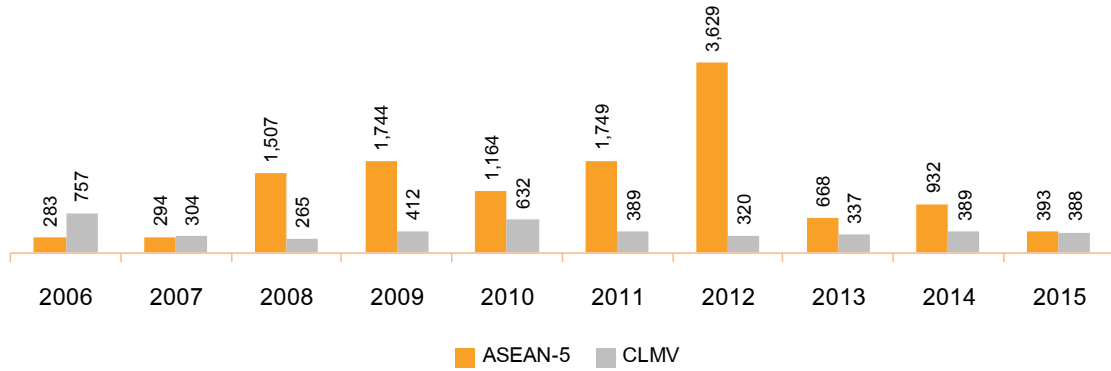
(million THB)



| Number of firms invested abroad in each year | | | | | | | | | | |
|--|------|------|------|------|------|------|------|------|------|------|
| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
| ASEAN | 18 | 21 | 19 | 21 | 20 | 23 | 29 | 55 | 70 | 54 |
| America | 2 | 1 | 2 | 4 | 4 | 6 | 8 | 9 | 7 | 6 |
| Europe | 3 | 5 | 4 | 4 | 4 | 7 | 4 | 11 | 15 | 12 |

Figure 11 Average net investment value per firm classified by main investment target region in ASEAN

(million THB)



| Number of firms invested abroad in each year | | | | | | | | | | |
|--|------|------|------|------|------|------|------|------|------|------|
| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
| ASEAN-5 | 12 | 10 | 7 | 8 | 12 | 16 | 15 | 30 | 30 | 24 |
| CLMV | 8 | 11 | 14 | 14 | 11 | 10 | 17 | 31 | 43 | 37 |

3.3 Value of Outward Foreign Direct Investment Classified by Investment Method

There are various OFDI options for listed firms to achieve their overseas goals. Different methods result in different impact on controls. In this research study, the main investment methods could be categorized into 7 groups as shown in Table 3.

Table 3: OFDI methods

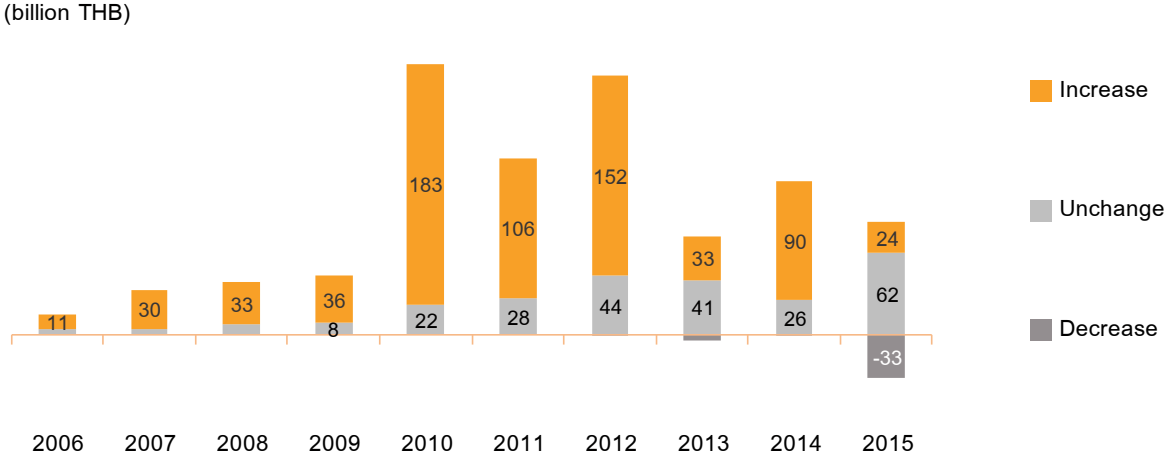
| Investment Methods | Definitions | Impact on control of business abroad |
|---------------------------|--|--|
| 1. Takeover | Listed company takes over another company completely or purchases share of the company until its stake reaches 100%. | Increase |
| 2. Share purchase | Listed company purchases shares of another company with resulting stake of less than 100% but has substantial control. | Increase |
| 3. Joint venture | Listed company invests jointly with other company(s) in the forms of new ventures or firms. | 1) Increase in the cases of first time investment or continuing investment to increase stake 2) Unchanged in the case of continuing investment not resulting in increase of stake |

| Investment Methods | Definitions | Impact on control of business abroad |
|---------------------------|--|---|
| 4. Subsidiary | Listed company sets up its own new subsidiary or injects more investment into existing subsidiary. Subsidiary refers to business that listed company holds more than 50% shares or has majority control in. | 1) Increase in the cases of first time investment or continuing investment to increase stake 2) Unchanged in the case of or continuing investment not resulting in increase of stake |
| 5. Associated company | Listed company sets up a new associated company or injects more investment into existing one. Associated company refers to business that listed company holds more than 10% shares or has partially control. | 1) Increase in the cases of first time investment or continuing investment to increase stake 2) Unchanged in the case of continuing investment not resulting in increase of stake |
| 6. Greenfield investment | Listed company invests all by itself to obtain/build factory or production base. | Increase |
| 7. Investment withdrawal | Listed company withdraws investment in businesses. | Decrease |

The impact on controls can be an important indicator of the growth prospects of listed firms. When a firm invests in a new business for the first time or invests more in an existing business to increase their stakes, it implies that they have found opportunities to grow. On the other hand, investing in existing business but without increasing stakes also implies growth opportunities in existing business. On the contrary, withdrawals by decreasing stakes, divesting or closing down, for whatever reason, could reflect the lack of growth in the business which would in turn impact the growth of the listed firms.

From 2006 to 2014, the value of OFDI mainly resulted in increase of controls in firms abroad. However, in 2015, most of the OFDI value were in terms of investment in existing businesses without increase in control. Among such investment method were 2 large continuing investments (more than THB 15 billion each) in existing subsidiary by PPT Exploration and Production pcl and Charoen Pokphand Foods pcl. From 2006 to 2011, none of the listed firms was found to withdraw overseas investment. However, withdrawals accrued from 2012 onward and the highest amount of withdrawal, the total of THB 33 billion, occurred in 2015. The majority of the withdrawal amount in 2015 was from Sahaviriya Steel Industries pcl withdrawing THB 28 billion from a steel business in the United Kingdom. (Figure 12)

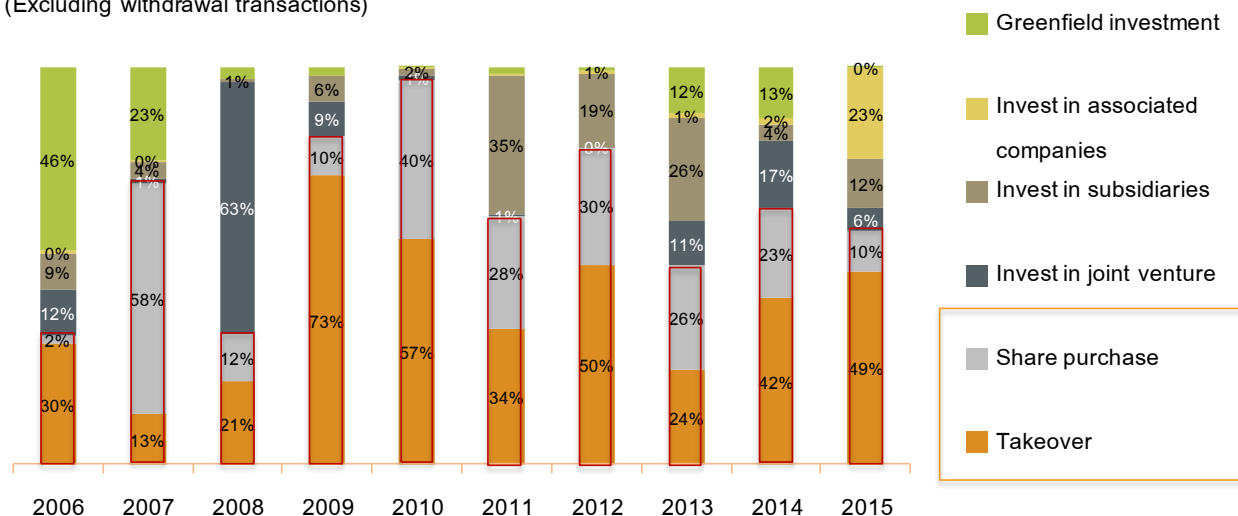
Figure 12 Net value of OFDI classified by changes on control of business abroad



Due to the different natures and complexities of businesses in different countries, cooperation with foreign business partners turned out to be the preferred alternative for listed firms than to investing on their own. When looking at the investment that aimed to increase controls, listed firms preferred to invest in the forms of takeovers or share purchases from foreign partner firms that had already possessed local knowledge instead of setting up new businesses on their own. (Figure 13)

Figure 13 The proportion of OFDI value classified by investment method

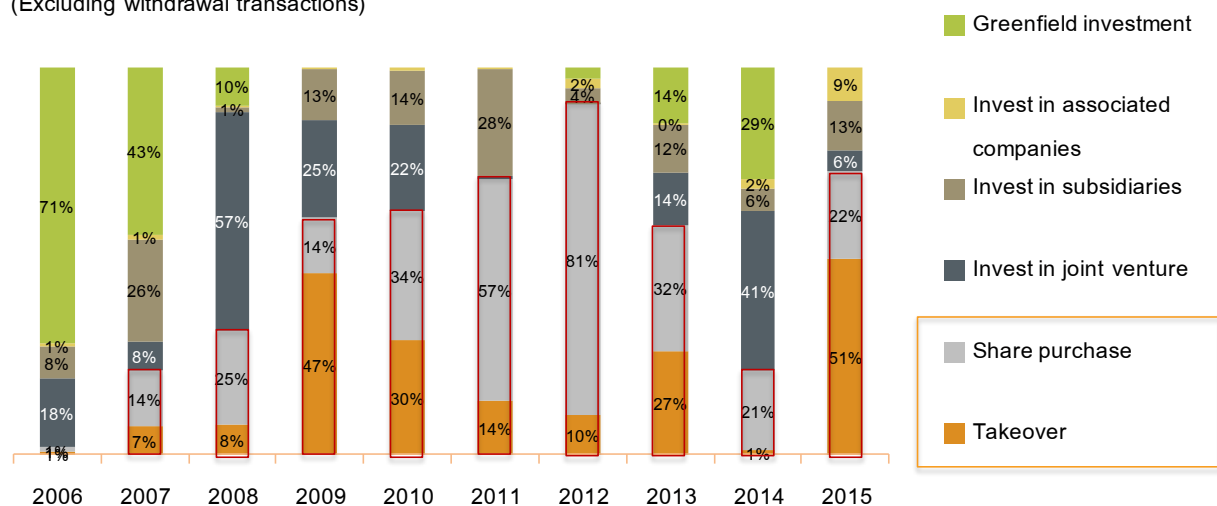
(Excluding withdrawal transactions)



As for investment in ASEAN, Thai listed firms invested with foreign business partners more than on their own, but in a lower proportion than in the world-wide scale. There were notably fewer takeovers in ASEAN than the world-wide scale. Joint ventures proportion in ASEAN was higher than the overall proportion of the world-wide scale. (Figure 14)

Figure 14 The proportion of OFDI value in ASEAN classified by investment method

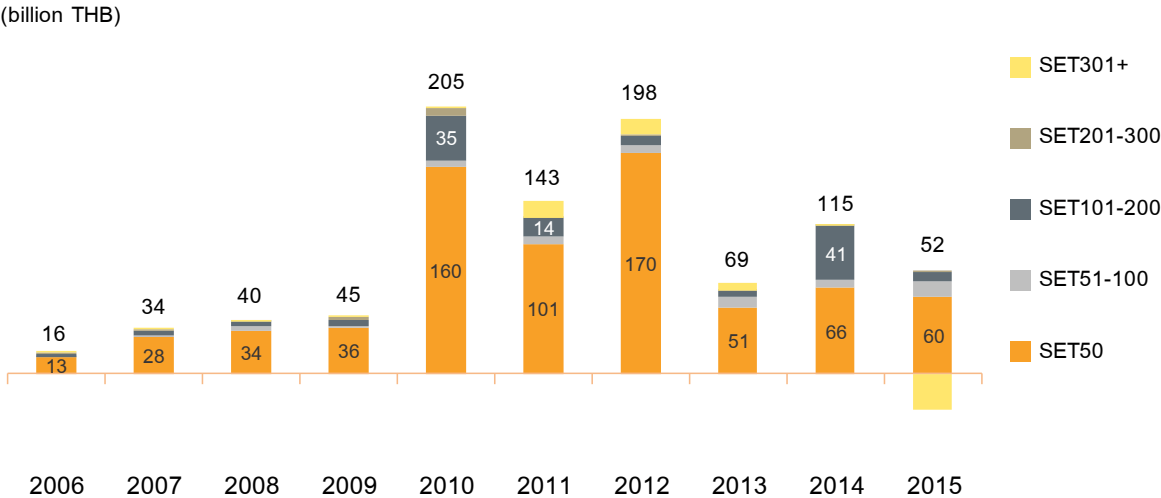
(Excluding withdrawal transactions)



3.4 Value of Outward Foreign Direct Investment Classified by Firm Size

Considering the value of investment according to market capitalization, listed firms in the SET50 group have had the highest total investment consistently. In 2015, the SET50 group recorded total investment value of THB 60 billion representing 75% of total overseas investment (excluding withdrawals) in that year. (Figure 15)

Figure 15 Net value of OFDI classified by firm size



Chapter 4: Revenue from Abroad

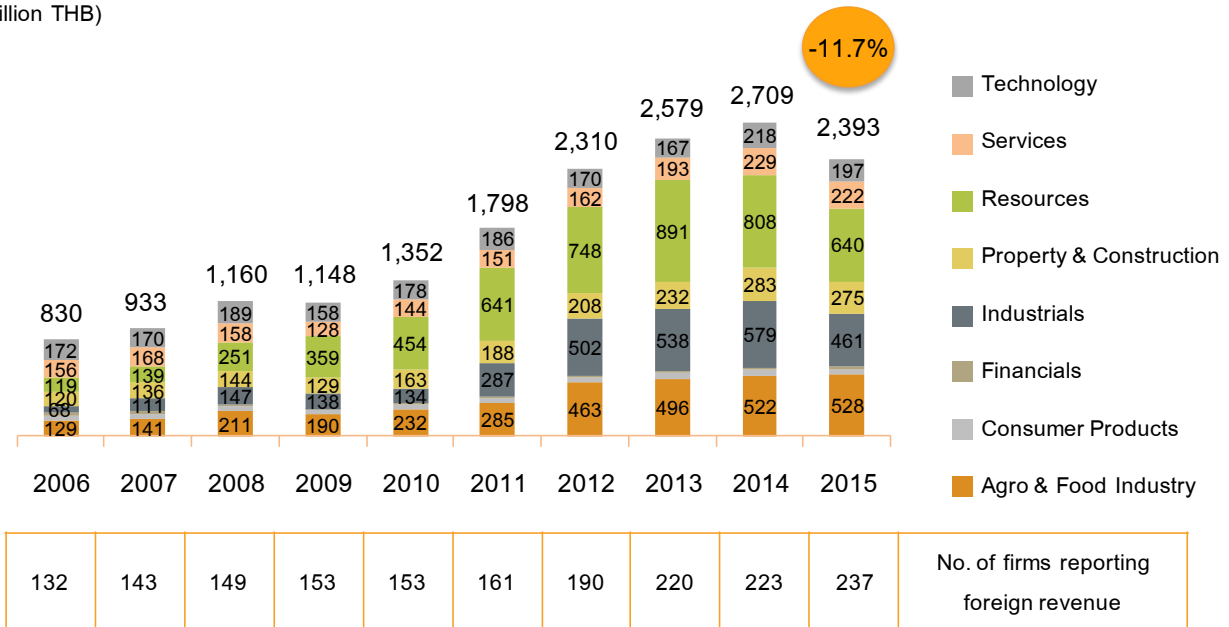
“Revenue from abroad” refers to both the revenue derived from businesses operating overseas and the revenue derived from exports. Unfortunately, there are firms that group only revenue from overseas based on the geological location of customers without indication whether the derived amount is from overseas operations or exports. Therefore, foreign revenue of these firms will be grouped together and referred to ‘revenue from abroad’.

4.1 Revenue from Abroad of Thai Listed Firms Classified by Industry

Total revenue from abroad of Thai listed firms had been growing continuously until 2014. In 2015, it dropped to THB 2.39 trillion, 11.7% lower than in 2014. This was in spite of the fact that there were 237 firms reporting foreign revenue in 2015, higher than the total of 223 in 2014. If categorized by industry, revenue from abroad dropped in every industry except for Agro & Food Industry and Financials industries. (Figure 16)

Figure 16 Revenue from abroad of Thai listed firms classified by industry

(billion THB)

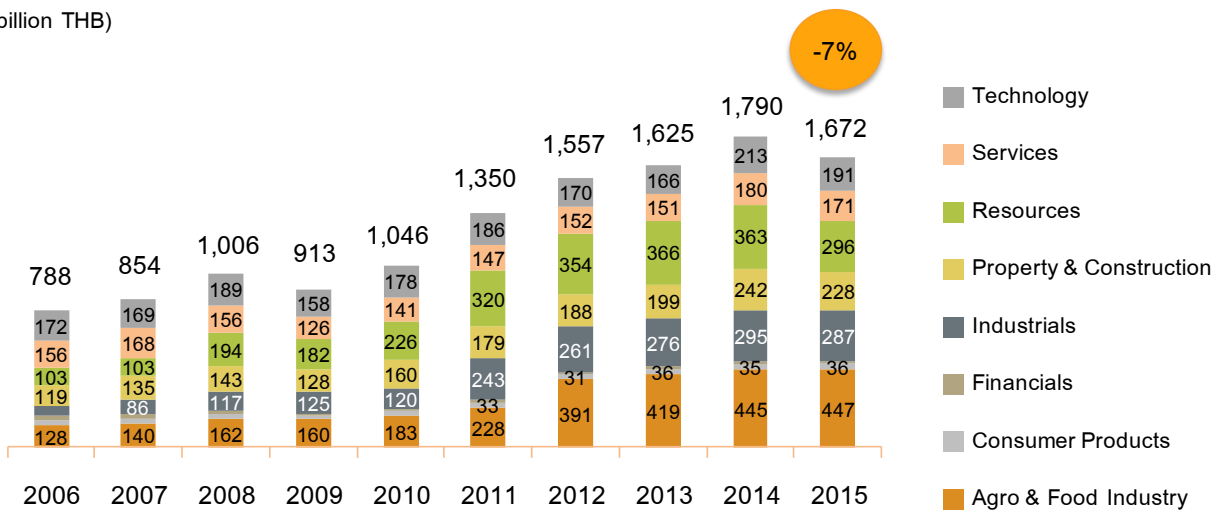


In order to look into 'real' foreign revenue growth, excluding the effects of shifts in number of firms, the firms taken into account would be only those who had continuously been reporting foreign revenue from 2006 to 2015. As such, the total of 110 firms reported THB 1.67 trillion total revenue in 2015, a drop of 7% from previous year. If categorized by industry, only 3 industries: Agro & Food Industry, Consumer Products and Financials industries, figured a slight growth from 2014. (Figure 17)

Figure 17 Revenue from abroad of Thai listed firms classified by industry

(Revenue of 110 companies continuously reporting from 2006 - 2015)

(billion THB)



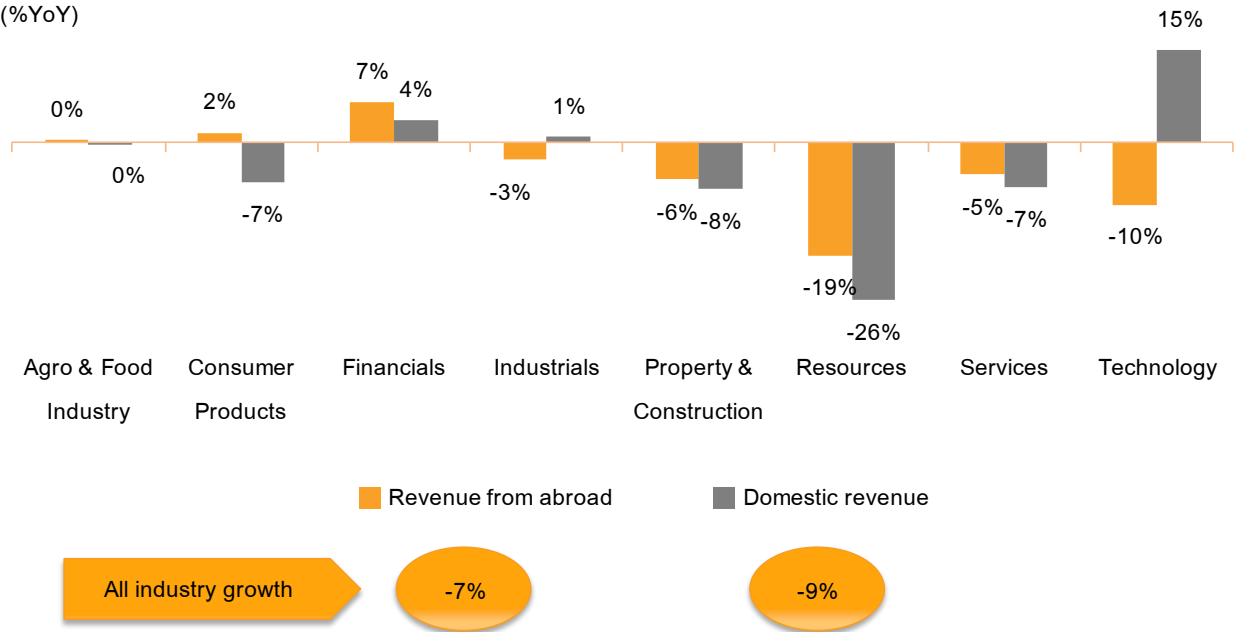
4.2 Growth of Revenue from Abroad and Domestic Revenue in Year 2015

In 2015, not only revenue from abroad shrank by 7%, but domestic revenue also shrank even more. There was a drop of 9% in domestic revenue from the previous year. Comparatively, growth potential of foreign revenue was found to be higher than that of domestic revenue as shown in 2015. From 8 industries, 6 of them showed higher growth in foreign revenue or lower declining rate than domestic revenue. (Figure 18)

Figure 18 Growth of revenue from abroad and domestic revenue in 2015 classified by industry

(Revenue of 110 companies continuously reporting from 2006 - 2015)

(%YoY)

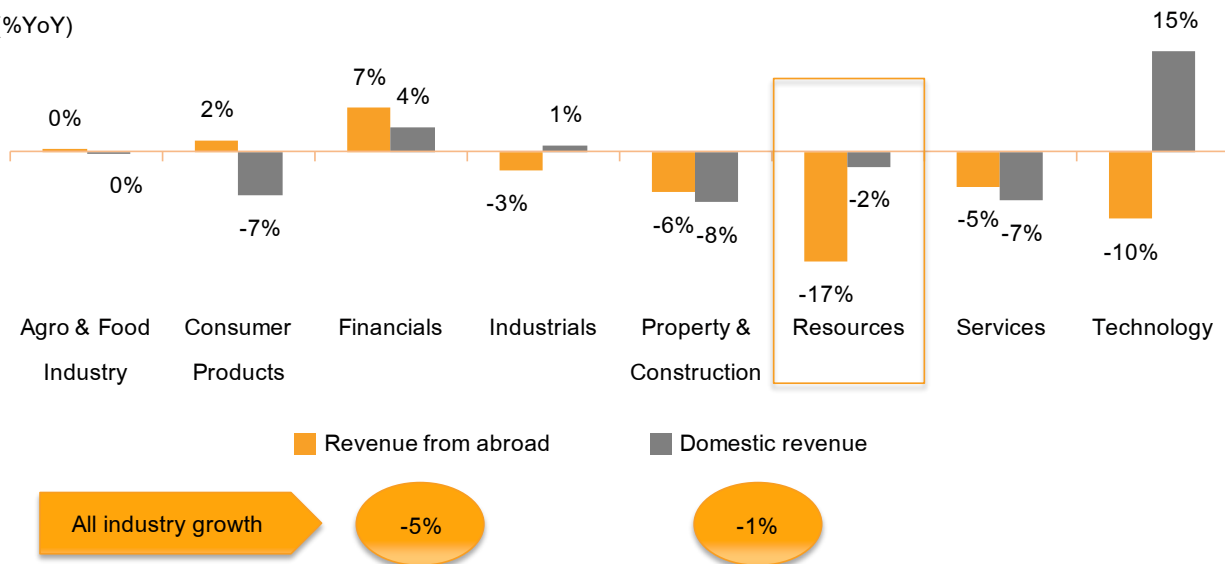


Resources industry revenue dropped the most with 19% and 26% reduction in foreign revenue and domestic revenue respectively. (Figure 18) Due to the drastic drop in oil prices. By excluding the 3 oil firms, the total foreign revenue of 107 firms that had continuously been reporting foreign revenue from 2006 to 2015 showed a drop of only 1% in domestic revenue and 5% in foreign revenue. From 8 industries, 5 of them showed higher growth in foreign revenue or lower declining rate than domestic revenue (Figure 19).

Figure 19 Growth of revenue from abroad and domestic revenue in 2015 classified by industry (excluding oil and gas companies)

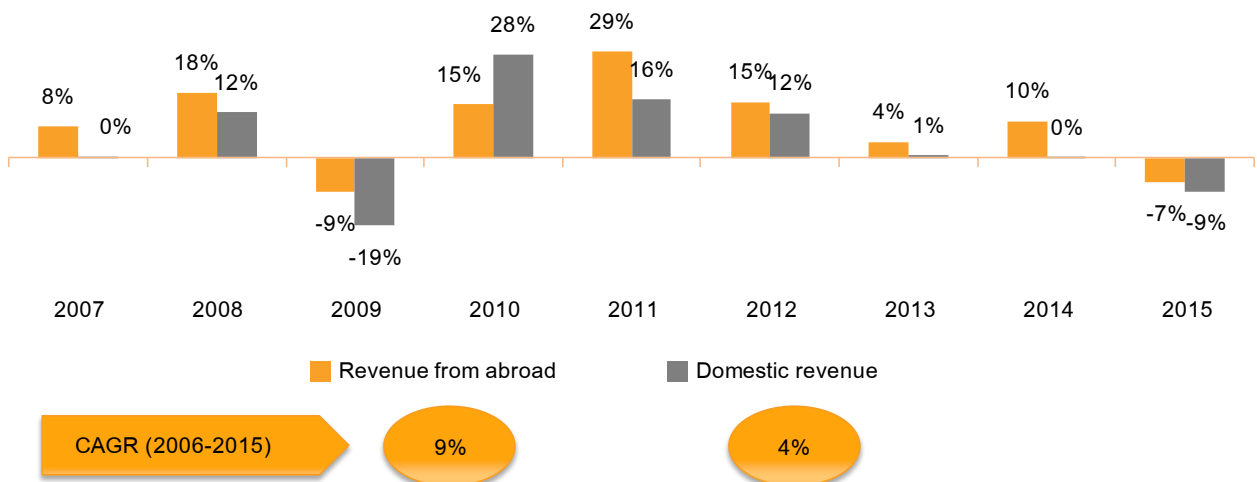
(Revenue of 107 companies continuously reporting from 2006 - 2015)

(%YoY)



Looking at a long term organic growth from 2006 to 2015, these 110 firms had continuously been reporting foreign revenue from 2006 to 2015 averaged 9% in foreign revenue growth, higher than the 4% domestic revenue growth. Moreover, foreign revenue growth had been higher than domestic revenue every year except in 2010. This reflects higher growth potential of foreign revenue compared to domestic revenue over the past decade. (Figure 20)

Figure 20 Growth of revenue from abroad and domestic revenue (2007-2015)



4.3 The Ratio of Revenue from Abroad to Total Revenue

As a result, revenue from abroad has been an increasingly vital component of total revenue of Thai listed firms. From the information of 110 firms that had continuously been reporting foreign revenue from 2006 to 2015, the ratio of revenue from abroad to total revenue was 46% in 2015. (Figure 21) This was an increase from the previous year, reflecting that the proportion has been growing continually as shown over the years even in the year when growth in foreign revenue was rather stagnant. Examining each industry showed that all industries experienced slight increase in proportion of foreign revenue except Industrials and Technology industries. (Figure 22)

Figure 21 The ratio of revenue from abroad to total revenue

(Revenue of 110 companies continuously reporting from 2006 - 2015)

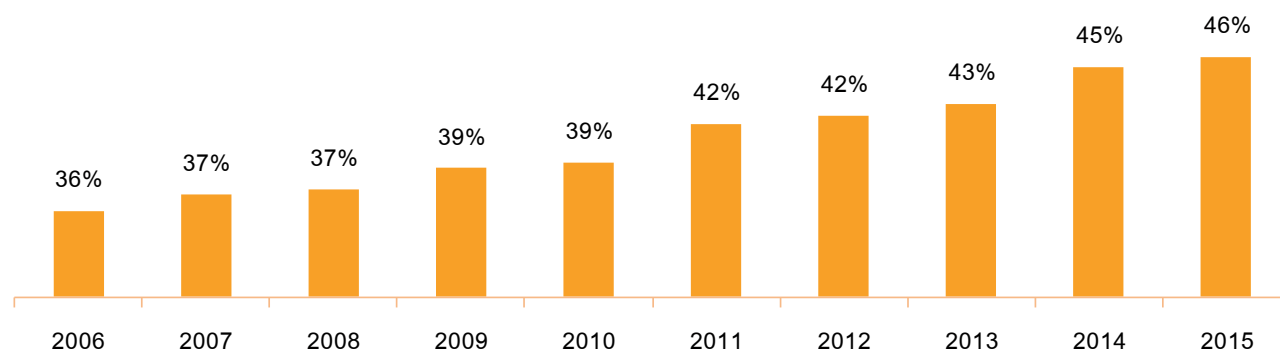
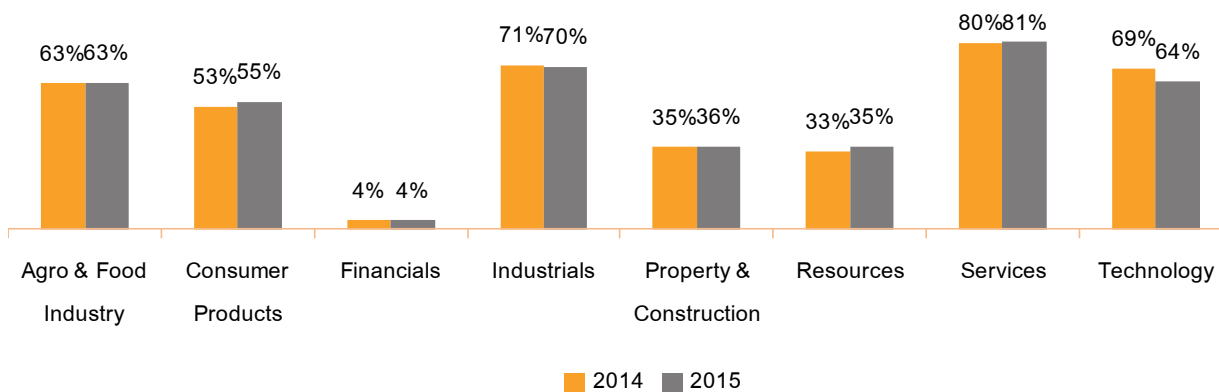


Figure 22 The ratio of revenue from abroad to total revenue for year 2014-2015 classified by industry

(Revenue of 110 companies continuously reporting from 2006 - 2015)



Number of Thai listed firms in each industry continuously reporting revenue from 2006 - 2015

| | | | | | | | |
|----|----|---|----|----|---|---|----|
| 22 | 21 | 4 | 30 | 11 | 6 | 4 | 12 |
|----|----|---|----|----|---|---|----|

Chapter 5: Economic Exposure Universe

The increase in OFDI and foreign revenue base represent the potential of Thai listed firms to grow in diverse economies, not restricted to only in Thailand. This ability to grow would not only enhance the survival capabilities of the Thai listed firms but also benefit other businesses in each supply chain of the firms, including stakeholders such as employees and shareholders, etc.

The compilation of Thai listed firms undertaking OFDI and/or generating revenue from abroad (Economic Exposure Universe) can display the linkage of Thai firm to foreign economies, enabling them grow even further.

'Global Economic Exposure Universe' includes firms undertaking OFDI and/or have revenue from abroad. There are also subsets of the global universe that are the ASEAN Economic Exposure Universe and CLMV Economic Exposure Universe since these 2 universes (or regions) are the main investment targets for Thai listed firms.

In 2015, there were 282 firms in the Global Economic Exposure Universe (Appendix 1), increased from 262 in 2014. The ASEAN Economic Exposure Universe (Appendix 2) consists of 167 firms and CLMV Economic Exposure Universe (Appendix 3) consists of 125 firms.

Appendix 1 Thai Listed Firms in Global Economic Exposure Universe (282 firms)

| Agro & Food Industry | Consumer Products | Financials | Industrials | | Property & Construction | Resources | Services | Technology |
|-------------------------|----------------------|------------|-------------|------|----------------------------|-----------|----------|------------|
| APURE | AFC | AEONTS | AH | TMD | AMATA | AKR | AAV | CCET |
| ASIAN | BTNC | BAY | AJ | TNPC | AMATAV | BANPU | AS | DELTA |
| BR | CPH | BBL | ALUCON | TOPP | BJCHI | BCP | ASIA | DRACO |
| BRR | CPL | BKI | AMC | TPA | CGD | CKP | BA | EIC |
| CBG | DSGT | CIMBT | APCS | TPC | CK | DEMCO | BDMS | FORTH |
| CFRESH | DTCI | CNS | BAT-3K | TSC | CPN | EARTH | BEAUTY | HANA |
| CHOTI | FANCY | FNS | CSC | TSTH | DCC | EGCO | BEC | IEC |
| CM | ICC | FSS | CTW | TWP | DRT | ESSO | BH | INTUCH |
| CPF | JCT | GL | CWT | TYCN | EPG | GLOW | BIGC | KCE |
| CPI | KYE | KBANK | EASON | VARO | GEL | GPSC | BJC | METCO |
| F&D | LTX | KKP | FMT | VNT | HEMRAJ | GUNKUL | BTS | PT |
| GFPT | NC | KTB | GSTEL | WG | ITD | IFEC | CENDEL | SAMART |
| ICHI | OGC | SAWAD | GYT | | LH | IRPC | CPALL | SIM |
| KBS | PG | SCB | HFT | | MBK | LANNA | DTC | SMT |
| KSL | PRANDA | TCAP | IHL | | NWR | MDX | EPCO | SPPT |
| KTIS | ROCK | TK | INOX | | PACE | PDI | ERW | SVI |
| LST | S & J | TMB | IRC | | PF | PTT | HMPRO | TEAM |
| M | SABINA | ZMICO | IVL | | POLAR | PTTEP | JWD | THCOM |
| MALEE | SAWANG | | KKC | | PPP | RATCH | KAMART | TWZ |
| MINT | SIAM | | MCS | | PS | RPC | LOXLEY | |
| OISHI | STHAI | | MILL | | Q-CON | SCI | LRH | |
| PB | SUC | | PAP | | RCI | SCN | MACO | |
| PM | TNL | | PK | | RML | SGP | MAJOR | |
| PR | TOG | | PMTA | | S | SOLAR | MAKRO | |
| PRG | TPCORP | | PTL | | SCC | SPRC | MC | |
| SAPPE | TR | | PTTGC | | SCCC | SUSCO | MEGA | |
| SAUCE | TTI | | SAM | | SEAFCO | TCC | MIDA | |
| SFP | UPF | | SAT | | SIRI | TOP | MONO | |
| SNP | UT | | SITHAI | | SPALI | | MPIC | |
| SORKON | WACOAL | | SLP | | SRICHA | | NOK | |
| SSC | | | SMIT | | STEC | | PRAKIT | |
| SSF | | | SMPC | | STPI | | PSL | |
| STA | | | SNC | | TASCO | | RCL | |
| TC | | | SPG | | TCMC | | ROBINS | |
| TF | | | SSI | | TFD | | SHANG | |
| TIPCO | | | SSSC | | TGCI | | SPC | |
| TKN | | | STANLY | | TICON | | SPI | |
| TLUXE | | | SUTHA | | TPIPL | | SVH | |
| TRS | | | TCB | | TRC | | THAI | |
| TRUBB | | | TCOAT | | TTCL | | TKS | |
| TU | | | TFI | | UMI | | TTA | |
| TVO | | | TGPRO | | VNG | | VGI | |
| TWPC | | | THIP | | WHA | | WICE | |
| UVAN | | | | | WIIK | | | |

Appendix 2 Thai Listed Firms in ASEAN Economic Exposure Universe (167 firms)

| Agro & Food Industry | Consumer Products | Financials | Industrials | Property & Construction | Resources | Services | Technology |
|----------------------|-------------------|------------|-------------|-------------------------|-----------|----------|------------|
| BR | BTNC | AEONTS | AH | AMATA | AKR | AAV | CCET |
| CBG | DSGT | BAY | AMC | AMATAV | BANPU | AS | DELTA |
| CHOTI | PRANDA | BBL | CSC | CK | BCP | BA | DRACO |
| CM | SUC | BKI | CTW | GEL | CKP | BDMS | FORTH |
| CPF | TNL | CIMBT | EASON | HEMRAJ | DEMCO | BEAUTY | HANA |
| CPI | TOG | CNS | FMT | ITD | EARTH | BEC | IEC |
| F&D | TPCORP | FSS | IHL | NWR | EGCO | BH | INTUCH |
| ICHI | TR | GL | IRC | PACE | GLOW | BIGC | KCE |
| KSL | WACOAL | KBANK | IVL | PS | GPSC | BJC | PT |
| M | | KTB | KKC | RML | GUNKUL | CENDEL | SAMART |
| MALEE | | SAWAD | MILL | SCC | IFEC | DTC | SIM |
| MINT | | SCB | PK | SCCC | LANNA | ERW | SVI |
| OISHI | | TK | PMTA | SEAFCO | MDX | HMPRO | TEAM |
| SAPPE | | TMB | PTTGC | SIRI | PDI | JWD | THCOM |
| SNP | | ZMICO | SAM | SPALI | PTT | KAMART | |
| STA | | | SITHAI | STEC | PTTEP | LOXLEY | |
| TC | | | SLP | TASCO | RATCH | LRH | |
| TF | | | SPG | TICON | SCI | MACO | |
| TKN | | | SSSC | TTCL | SGP | MAJOR | |
| TLUXE | | | STANLY | WHA | SUSCO | MAKRO | |
| TRUBB | | | SUTHA | | TCC | MC | |
| TU | | | TCB | | TOP | MEGA | |
| TWPC | | | TOPP | | | MIDA | |
| UVAN | | | TPC | | | MONO | |
| | | | TYCN | | | MPIC | |
| | | | VNT | | | NOK | |
| | | | WG | | | PRAKIT | |
| | | | | | | PSL | |
| | | | | | | RCL | |
| | | | | | | ROBINS | |
| | | | | | | SHANG | |
| | | | | | | SPC | |
| | | | | | | SPI | |
| | | | | | | SVH | |
| | | | | | | THAI | |
| | | | | | | TTA | |

Appendix 3 Thai Listed Firms in CLMV Economic Exposure Universe (125 firms)

| Agro & Food Industry | Consumer Products | Financials | Industrials | Property & Construction | Resources | Services | Technology |
|-------------------------------------|------------------------------|-------------------|--------------------|--|------------------|-----------------|-------------------|
| CBG | BTNC | AEONTS | AMC | AMATA | AKR | AAV | DELTA |
| CM | PRANDA | BAY | CTW | AMATAV | BANPU | BA | DRACO |
| CPF | SUC | BBL | EASON | CK | CKP | BDMS | FORTH |
| KSL | TOG | BKI | IRC | GEL | DEMCO | BEAUTY | HANA |
| M | TR | CIMBT | IVL | HEMRAJ | EGCO | BEC | INTUCH |
| MINT | WACOAL | CNS | MILL | ITD | GLOW | BH | PT |
| OISHI | | FSS | PK | NWR | GPSC | BIGC | SAMART |
| SNP | | GL | PMTA | PS | GUNKUL | BJC | SIM |
| STA | | KBANK | SAM | SCC | IFEC | CENTEL | SVI |
| TF | | KTB | SITHAI | SCCC | MDX | JWD | THCOM |
| TLUXE | | SAWAD | SLP | SEAFCO | PDI | KAMART | |
| TRUBB | | SCB | SPG | STEC | PTT | LOXLEY | |
| TU | | TK | SSSC | TASCO | PTTEP | MAJOR | |
| TWPC | | TMB | STANLY | TTCL | RATCH | MAKRO | |
| | | ZMICO | SUTHA | | SCI | MC | |
| | | | TOPP | | SGP | MEGA | |
| | | | TPC | | SUSCO | MIDA | |
| | | | TYCN | | TOP | MONO | |
| | | | WG | | | MPIC | |
| | | | | | | NOK | |
| | | | | | | PRAKIT | |
| | | | | | | RCL | |
| | | | | | | ROBINS | |
| | | | | | | SHANG | |
| | | | | | | SPC | |
| | | | | | | SPI | |
| | | | | | | SVH | |
| | | | | | | THAI | |
| | | | | | | TTA | |

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