

# Toward FATS and beyond: the case of Thailand

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## 1. Introduction

As a national compiler for some of the key economic statistics, the Bank of Thailand (BOT) has collected data and compiled a wide range of economic indicators to support macroeconomic analysis as well as monetary policy formulation. As globalization evolves, adequacy of these indicators will need to be reassessed to keep up with the changing environment and ensure that necessary indicators are compiled and made available to analysts and policymakers.

Foreign direct investment (FDI) is considered to be a key element in accelerating the globalization process, but only general information and indicators on FDI are provided. Data on transactions and positions between direct investors and their affiliates could not adequately reflect in-depth information on the activities of these multinational enterprises and the linkages they have created through supply chain networks. Foreign Affiliate Statistics (FATS) have thus been introduced to fill the gap.

FATS have never before been compiled in Thailand, partly due to the wide scope of these statistics and Thailand's decentralized statistical system. Considering the role of FDI in this country, inward FDI has long been one of the major stimulating factors behind the expansion of the manufacturing and exporting sectors. Thus, a comprehensive set of statistics such as FATS that could meaningfully reveal FDI-related activities is called for. The primary content of this paper discusses the concept of FATS, based mainly on the *OECD Handbook on Economic Globalization Indicators* (2005), Eurostat's *Recommendations Manual on the Production of FATS* (2007) and the proposed framework of data sources and methodology for forming inward FATS for Thailand. This paper also explores beyond the generally recommended variables and examines the linkages in the area of financial indicators. The results of the compilation of the target variables and other findings are charted and exhibited in the Appendix. Limitations of the methodology are addressed in the final two sections, together with concluding remarks.

## 2. FATS

### 2.1 What are FATS?

Foreign Affiliate Statistics (FATS) can be defined as statistics that describe the activities of resident enterprises conducted in a certain economic territory and controlled by enterprises (MNEs) located outside that economic territory. These types of enterprises are known as foreign affiliates. FATS consist of two opposite sides of investment activities: inward and outward. Inward FATS describe the activities of foreign affiliates within the compiling economy and outward FATS describe the activities of the compiling economy's own affiliates abroad.

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In the compilation of FATS, identifying enterprises under foreign control is crucial. To achieve this, the concept of control needs to be clarified. Based on OECD (2005), the notion of control indicates “the ability to appoint a majority of administrators empowered to direct an enterprise, to guide its activities and determine its strategy”. In most cases where there is a single investor holding a majority (more than 50%) of the shares with voting rights, the economic activities of a certain affiliate can then be easily attributed to one single unit in control. In practice, however, this is not always applicable since there are other special cases of minority shareholders and indirectly controlled enterprises that are more difficult to identify. One recommendation suggested that “in any event, whenever the national authorities are not in the position to prove that the company is under foreign control, the said company should be considered to be controlled by residents of the compiling country” (OECD (2005), §305). Therefore, the concept of a single investor holding a majority of shares or voting power can be used as an initial identification of enterprises under foreign control.

## **2.2 What do FATS offer?**

FATS provide insight into and information on the economic impact that MNEs’ investments have on the economy of the affiliates’ country of residence. Such impact could be in the form of job creation, turnover, shares of other economic activities such as investment and trade, value added, technological and managerial skill transfers, etc. In other words, FATS help depict the ramifications of MNE activity for the host country – the pros and cons, benefits and risks associated with investors’ countries – which would be of particular interest to analysts and economists of investment promotion agencies, trade negotiation and investment liberalization units and the like. Macroeconomic analysts, policymakers or even researchers could also make use of FATS to measure sectoral vulnerability (to external shock in the home country) and spillover effects these foreign affiliates may bring about.

## **3. Data Collection of Inward FATS for Thailand**

Undeniably, inward FDI has long played a vital role in stimulating the Thai economy, especially the manufacturing sector. This is evidenced not only by several empirical studies, but also by the government’s effort to attract foreign investors through investment promotion packages. The importance of inward FDI has also been perceived at a regional level. ASEAN member states have collectively formed committees and working groups in charge of strategic planning and statistical enhancement particularly on FDI. FATS are among the statistics/indicators that member states are encouraged to consider working on. Through development of FATS, the impact of inward FDI on the Thai economy – both direct and indirect effects – would be, to some extent if not entirely, measurable and explicitly revealed. This kind of information is especially useful for assessing the effectiveness of investment promotion measures and supporting trade and investment negotiation, not to mention uncovering the risks that could potentially be transmitted from ultimate investor countries to the host economy.

### **3.1 Scope of study**

This pilot study focuses on the compilation of inward FATS only. Therefore, related issues concerning outward FATS will be omitted at this point. The scope of the study is determined by the target population and time frame.

### **Target population**

The target population for Thailand's inward FATS comprises foreign affiliates resident in Thailand that are majority owned (ie more than 50% of the shares or shareholders' voting power) by foreign enterprises located outside the territory of the Kingdom of Thailand.

### **Time frame**

Data on inward FATS will be captured and combined from different sources, most of which are collected on an annual basis. From the point of view of users, FATS variables generally do not change rapidly over a short period of time and are not meant to serve as short-term indicators. Based on this, it would be plausible to initially propose an annual compilation of Thailand's inward FATS.

## **3.2 Proposed variables**

The criteria used in selecting the series of variables in this paper are based mainly on data availability and the fundamental characteristics commonly required in forming inward FATS. A set of inward FATS variables proposed for the compilation and their definitions<sup>2</sup> can be described as follows:

**Number of enterprises:** A count of the number of active enterprises listed in the business register population in line with the conceptual framework under the FATS target population.

**Turnover:** The aggregates invoiced by the observed entity during the reference period that correspond to the market sales of goods or services supplied to third parties, including all other charges and duties invoiced, with the exception of the VAT.

**Personnel costs:** The total emolument<sup>3</sup> paid by an employer to an employee, regardless of the latter's employment status (permanent or temporary), as compensation for the work done by the employee during the reference period. This also includes taxes and employee's social security, as well as other social contributions made by the employer.

**Number of persons employed:** Number of persons employed consists of everyone who is on the payroll and working in the observed entity, except those who are absent for an indefinite period.

**Exports and imports of goods:** Exports can be defined as the sales of goods by residents to non-residents, and imports are defined as purchases of goods by residents from non-residents.

## **3.3 Data sources and methodology**

To obtain FATS variables, first all of the data sources relating to the subject of interest have to be examined so that available resources are fully incorporated. During this examination, it was realized that some of the components required for the compilation of the inward FATS variables already existed but were scattered across different data-compiling institutions. Given the characteristics of Thailand's decentralized statistical system, a high degree of cooperation among involved parties is a key factor for success.

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<sup>2</sup> The definitions of these variables were adopted from §1.3.3 of the Eurostat *Recommendations Manual on the Production of Foreign Affiliates Statistics* (2007), which is also where the full definitions and details can be found.

<sup>3</sup> Due to limitations of data sources, personnel costs captured in this pilot study are limited to emoluments "in cash".

Direct reports on financial statements relating to international investment positions (*SBC3/1 Form*) are the main source for foreign direct investment statistics compilation in Thailand. Any entity located in Thailand as a resident with a non-resident shareholder of 1% or above or holding 1% or more of the voting shares of a non-resident enterprise abroad is mandated by law to submit such a report to the Bank of Thailand within five months of the reference year-end date. The collection of FDI statistics is based on the direct investment relationship between residents and non-residents determined by the notion of influence, which is reflected in the holding of 10% or more of the voting shares (according to the BPM6 concept). Although the formation of FATS adopted this FDI framework as a primary data source, the two subjects are defined by very different principles.

The compilation of FATS is grounded in the notion of control, which implies the ability to use the majority administrating power in possession to direct an enterprise, define its strategy and conduct its activities. This way, the economic activities of the affiliates can then be attributed to the controlling investor. In order to attribute the activities to an appropriate investor, it is usually necessary to identify the ultimate controlling institutional unit (UCI). In this paper, since the number of enterprises for the inward FATS is collected through the FDI statistical framework,<sup>4</sup> the UCI is unidentifiable. The use of the concept of majority-owned foreign affiliates is introduced and is therefore adopted as an alternative and a primary identification tool for inward FATS.

FATS enterprises that are identified through the mentioned procedure are then linked to other sources in order to extract the rest of the proposed inward FATS variables. The sources of these variables are described in Table 1:

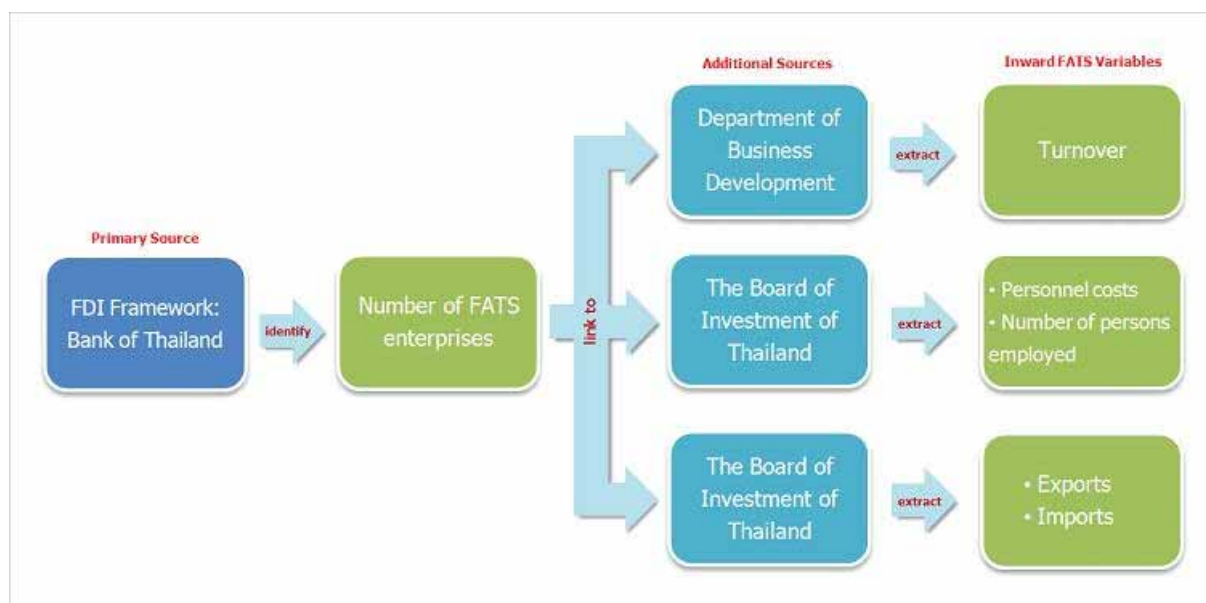
Table 1: Data sources of the proposed inward FATS variables

Inward FATS Variables	Data Sources
Turnover	Reports on financial statements of commercial companies registered in Department of Business Development (DBD), Ministry of Commerce
Personnel costs Number of persons employed	Employment database of the promoting group of foreign investors The Board of Investment of Thailand
Exports and imports of goods	Export and import declarations from the Thai Customs Department, Ministry of Finance

The following diagram illustrates the identification and extracting process of the aforementioned variables.

<sup>4</sup> The principle of FDI statistics compilation considers only the first foreign parent or immediate foreign ownership with a resident unit. Therefore, data extracted can only capture immediate, not ultimate, foreign control.

Diagram 1: The inward FATS variables identification process



### 3.4 Results of the data collection

The year 2007 is used as the reference year of this study on inward FATS for Thailand as it is the year with the most up-to-date list of foreign affiliates.<sup>5</sup> Since the UCI cannot be identified in this initial attempt at FATS compilation, the country breakdown of FATS would not be compiled because breakdown by immediate investors would be misleading in the context of FATS usage. The results are instead categorized by industrial sector, illustrating the concentration pattern of each FATS variable. The results are exhibited in the charts and tables provided in the Appendix.

Chart 1 illustrates the proportion of turnover accounted for by foreign affiliates in each industry and in the overall total. It can be perceived from the chart that the biggest contributors in terms of value are in the manufacturing sector, which is also the largest sector in the economy. Next in line is the wholesale and retail sales sector, though in terms of percentage, the proportion of the total amount within the industry is very small – only 8% (Table 2 in the Appendix). If the result is instead viewed in terms of percentage of contribution, it would indicate that foreign-owned enterprises played the most significant role in the mining and quarrying sector as they contributed up to 86% of the industry turnover. However, it does not amount to a large sum compared to total turnover in the system and therefore would have little impact on the country's turnover as a whole. Henceforth, only the overall analysis will be applied to the evaluation of each FATS characteristic.

Charts 2 and 3 demonstrate foreign affiliates' contribution in terms of employment, covering two variables, namely, personnel costs and number of persons employed. For both variables, once again, foreign-owned enterprises clearly played an important role in the manufacturing sector, accounting for the majority of the sector's employment. However, foreign affiliates accounted for a noticeably larger proportion of "personnel costs" than of "number of persons employed", possibly implying higher average remuneration and perhaps a lesser degree of "labor intensiveness" of foreign affiliates compared to resident firms.

<sup>5</sup> The list of foreign affiliates is available only in the year in which the population survey on IIP is conducted.

Charts 4 and 5 refer to the activities of foreign affiliates in the area of exports and imports of goods. The charts illustrate the proportion of foreign affiliates' exports and imports in the total for each industry. The attributed contributions turn out to be almost the same for both variables, major contributors being in the manufacturing sector, followed by a fraction of the total sum in the wholesale and retail sales sector.

In conclusion, this set of "pilot variables" suggest that foreign affiliates are highly concentrated in the manufacturing sector, contributing to approximately one third of total employment and generating about two thirds of total labor income. Most striking, yet not surprising, is the foreign affiliates' share of total exports and imports. Over 70% of the country's total exports and imports were accounted for by foreign affiliates, although there were only around 1,200 of these, representing around one fifth of the total number of firms nationwide. This may suggest a high degree of intrafirm trade, raising awareness of the impact on the country's exports and imports should there be any factor triggering investment relocation. Backward linkages seem to have been created to a very limited extent, if at all, as reflected by the comparatively high proportion of imports generated by foreign affiliates. Several other implications could also be drawn once additional FATS variables are compiled and further brought into the scope of analysis (eg expenditure on human resource development, R&D, etc). Last but not least, it should be kept in mind that foreign investment also comes with exposure to foreign control and management decisions that may not always be beneficial to the host country. Policymakers thus need to evaluate and balance the pros and cons of implementing promotion measures to attract these foreign investors more thoroughly. For details of the results in terms of the contribution of foreign affiliates to each industry for all of the variables, please see Appendix Tables 2–6.

#### **4. Further Evaluation Beyond the Scope of FATS' Conventional Variables**

The importance of foreign direct investment as a stimulating factor in the development of the economy was mentioned as one of the main reasons for the need to initiate a compilation for FATS. FDI is regarded as a major vehicle of economic growth in terms of strengthening firms' capabilities and competitiveness through transfer of technology and spillover, not to mention the amount of capital brought in to enhance the liquidity of the system. However, the idea that these foreign affiliates will continue to be the endless source of funds is unrealistic and our policy stance cannot always be based on this expectation. Initially, when a multinational enterprise first locates its affiliate in a certain host country, inflows of capital are necessary to nourish the "infant" business. Afterwards, as the affiliate matures and is able to sustain its growth and earnings, it relies less on funding from the parent company and may possibly be searching for domestic funds when needed. Even though FDI is considered as a stable and reliable long-term source of investment capital that seems to be less vulnerable than other forms of private capital flows, a reversal of funds could also occur. For example, a foreign affiliate may lend money back to the parent company with its domestic borrowings/earnings.

In this part of the paper, financial indicators are brought into consideration and examined in conjunction with conventional FATS variables. Domestic borrowing is thus incorporated into this extended evaluation and explored with respect to overall loans outstanding and non-performing loans (NPLs). Linking the two variables would enable analysts to assess the impact of foreign affiliates in the domestic credit market and the pressure they exert on its liquidity. The results are presented in Chart 6 in the Appendix.

Chart 6 shows the amount of loans outstanding and NPLs attributable to resident foreign affiliates as a proportion of the total for Thailand. The results indicate that there are domestic borrowings attributed to foreign affiliates. Although the ratio of loans outstanding of foreign

affiliates to total loans outstanding is not large, the total amount of these loans was considerable, with potential associated risks. As for the NPLs, the amount is so small that it is almost unnoticeable in the results presented in the chart. Further examination of the purpose of these loans is needed in order to determine the potential associated risks.

## 5. Limitations and Improvements

Through initial inter-agency collaboration, a set of “pilot FATS variables” are compiled. A number of limitations are encountered amid this initial stage of establishing FATS, leaving room for future improvements, specifically with respect to variables and classifications. Examples of these are summarized below.

(1) The primary source used in determining FATS variables is the IIP<sup>6</sup>-CDIS<sup>7</sup> statistical framework, which is primarily designed for classification of FDI by country of immediate investors. Hence, data on the ultimate controlling institutional unit cannot be extracted. The concept of majority ownership was adopted as an alternative, but this criterion cannot capture all aspects of foreign ownership due to the absence of minority-owned and indirect controlling units, which cannot be identified under this principle. Consequently, it is very likely that the number of companies for which FATS have been obtained through this process could be underestimated.

(2) As mentioned earlier, inward FATS variables are obtained by linking variables across different databases, some of which may not be fully consistent or fully matched. Further fine-tuning of the process to standardize coding to facilitate cross-database data matching would be required.

(3) Data on FATS (at least for this pilot study) could be considered a by-product of other data compilations. Therefore, some variables may not be available in a timely manner. Through continued collaboration with related agencies, the scope, coverage, frequency and timeliness of the surveys or other channels through which the inputs are obtained could be revisited, to the mutual benefit of all agencies involved.

(4) As a result of the unavailability of data concerning the UCI, it follows that the “true” foreign affiliates population is unknown. Nor is enough information available to form an appropriate estimate. Redesigning the survey forms to capture the UCI would allow the true foreign affiliates population to be identified, plausibly leading to a better representation of foreign affiliates’ activities.

## 6. Conclusions and Recommendations

This paper proposed the initiation of FATS compilation in Thailand and examined the possibility of compiling inward FATS as a case study. Data sources were reviewed and a methodological framework was constructed. The empirical results indicated that foreign-owned enterprises were concentrated mostly in the manufacturing sector with respect to all

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<sup>6</sup> International Investment Position: statistics summarizing a country’s financial assets and liabilities outstanding vis-à-vis non-resident counterparties (one of the external sector statistics that the IMF recommends member countries compile).

<sup>7</sup> Coordinated Direct Investment Survey: the IMF encourages member countries to participate in this survey to allow better consolidation of data at the global level. Statistics concerning FDI stock classified by country of immediate investors are requested.

variables, suggesting that the sector is highly linked with the globalization stream and hence perhaps the most vulnerable to external shocks.

Loan variables were added into an extended evaluation of foreign affiliates to uncover the impact of foreign control on liquidity in the host country. The results show that there are potential debtors owing a considerable amount to domestic commercial banks, but associated risks are yet to be determined. This calls for further investigation with respect to the objectives of loans and other aspects in order to achieve a more comprehensive analysis.

Limitations to the compilation of FATS were also elaborated, which helps guide us as to the direction future improvements on FATS compilation should take. Given the decentralized characteristics of Thailand's statistical system, stronger bond and inter-agency collaboration is a key success factor. A more formal arrangement (eg in the form of a memorandum of understanding between related agencies, or an inter-agency task force) could be established to pave the way for successful FATS improvement.



## Appendix

Chart 1: Proportion of foreign affiliates' turnover to the total amount by industry

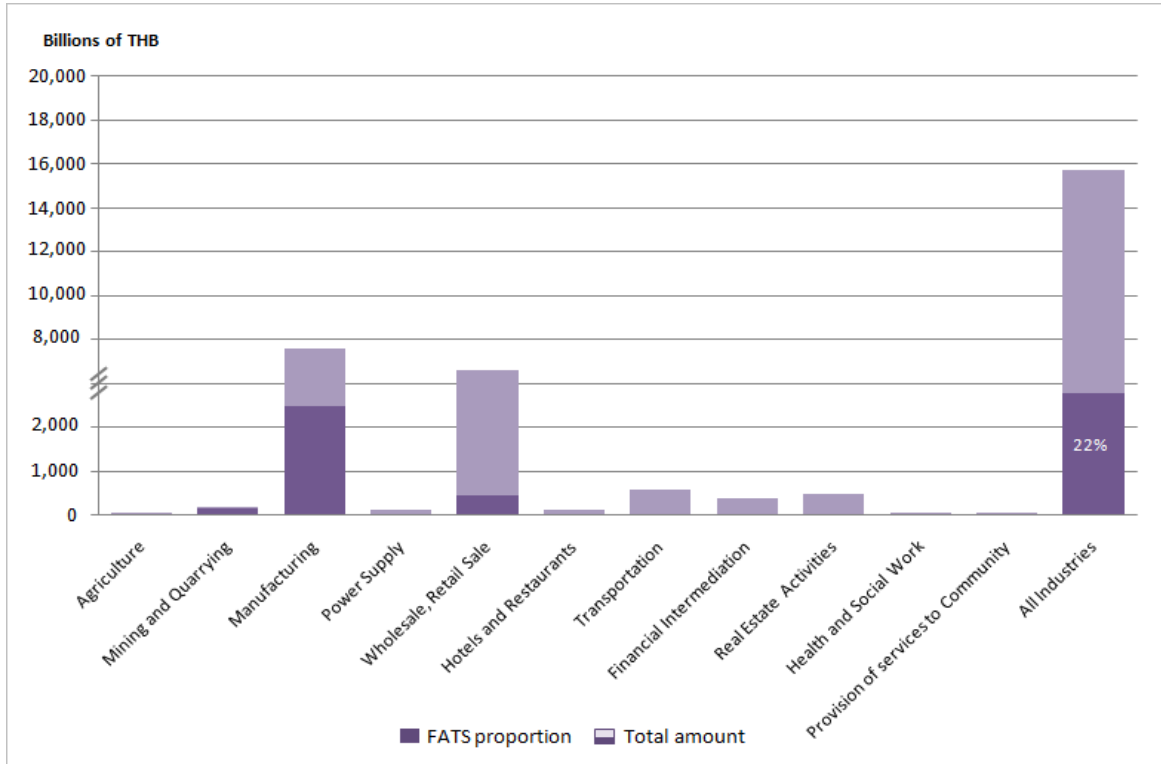


Chart 2: Proportion of foreign affiliates' personnel costs to the total amount by industry

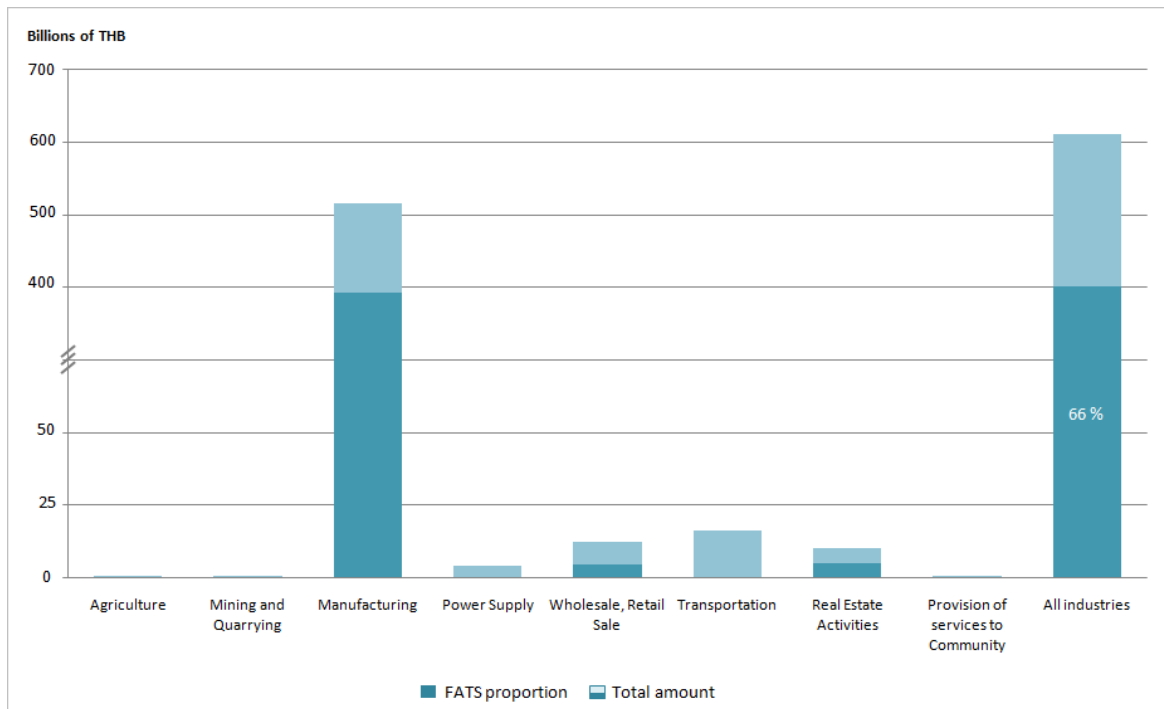


Chart 3: Proportion of number of persons employed by foreign affiliates to the total number employed by industry

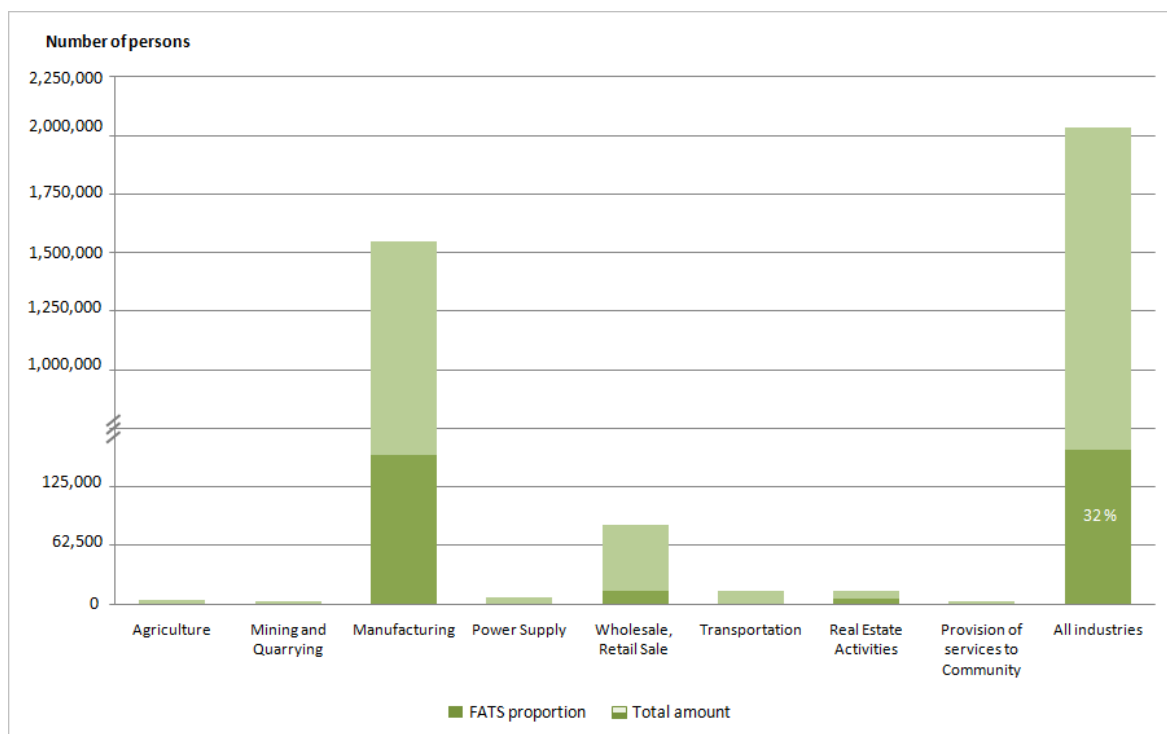


Chart 4: Proportion of foreign affiliates' exports to the total amount by industry

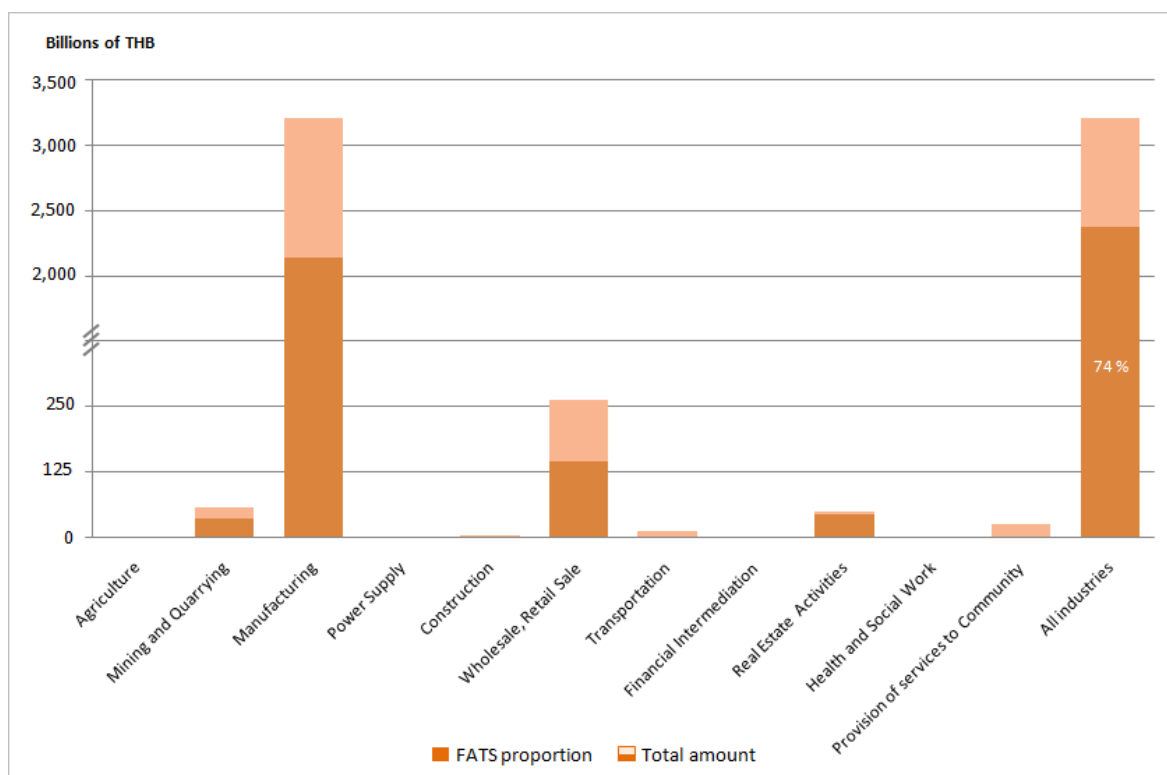


Chart 5: Proportion of foreign affiliates' imports to the total amount by industry

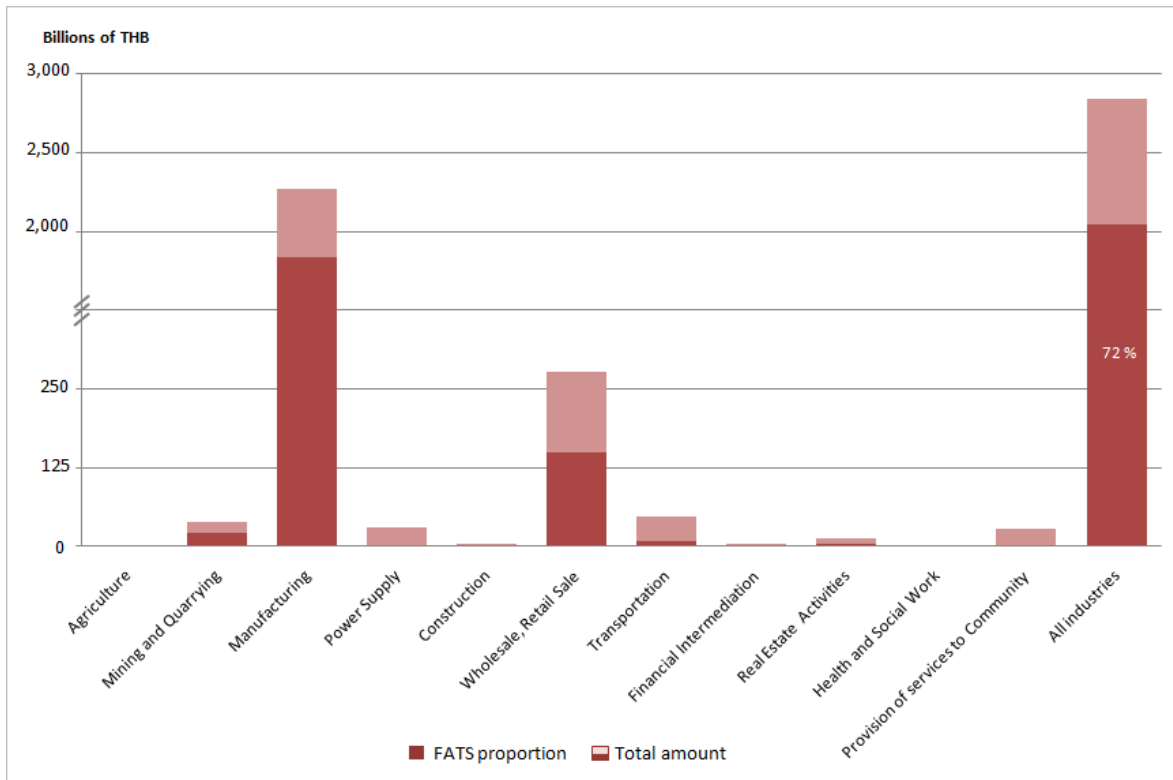


Chart 6: Loans outstanding and NPLs of foreign affiliates' companies in comparison with total amounts

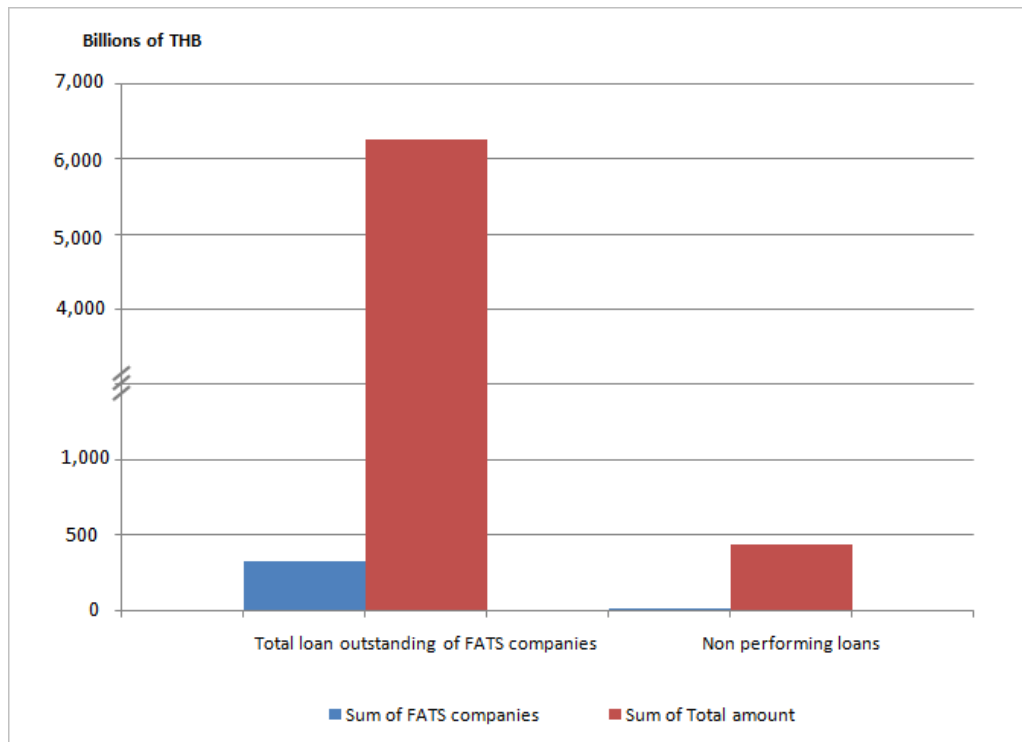


Table 2: Turnover accounted for by foreign affiliates, by industry

Industry Sector	Foreign affiliates' turnover in each industry (millions of THB)	Total turnover in each industry (millions of THB)	Percentage accounted for by foreign affiliates (%)
Agriculture, Hunting and Forestry	590	65,064	1
Mining and Quarrying	177,719	206,653	86
Production	2,766,874	7,593,142	36
Electricity, Gas and Water Supply	7,941	118,094	7
Wholesale, Retail Sale and Repair of Motor Vehicles, Motorcycles, Personal and Household Goods	451,546	5,391,099	8
Hotels and Restaurants	346	139,566	0
Transport, Storage and Transportation	10,251	600,508	2
Financial Intermediation	39,267	407,243	10
Real Estate Activities, Renting and Business Activities	21,711	503,935	4
Health and Social Work	16	62,744	0
Provision of Services to Community, Society and Other Private Sector	1,145	56,625	2
<b>All Industries</b>	<b>3,477,407</b>	<b>15,713,433</b>	<b>22</b>

Table 3: Personnel costs of foreign affiliates, by industry

Industry Sector	Foreign affiliates' personnel costs in each industry (millions of THB)	Total personnel costs in each industry (millions of THB)	Percentage accounted for by foreign affiliates (%)
Agriculture, Hunting and Forestry	65	343	19
Mining and Quarrying	141	438	32
Production	393,588	516,437	76
Electricity, Gas and Water Supply	106	3,318	3
Wholesale, Retail Sale and Repair of Motor Vehicles, Motorcycles, Personal and Household Goods	3,547	9,994	35
Transport, Storage and Transportation	84	13,122	1
Real Estate Activities, Renting and Business Activities	3,853	8,259	47
Provision of Services to Community, Society and Other Private Sector	215	545	40
<b>All Industries</b>	<b>401,600</b>	<b>610,874</b>	<b>66</b>

Table 4: Number of persons employed by foreign affiliates, by industry

Industry Sector	Foreign affiliates' number in each industry (persons)	Total number in each industry (persons)	Percentage accounted for by foreign affiliates (%)
Agriculture, Hunting and Forestry	259	3,347	8
Mining and Quarrying	277	2,147	13
Production	638,843	1,545,680	41
Electricity, Gas and Water Supply	316	5,429	6
Wholesale, Retail Sale and Repair of Motor Vehicles, Motorcycles, Personal and Household Goods	12,138	74,614	16
Transport, Storage and Transportation	125	11,587	1
Real Estate Activities, Renting and Business Activities	4,677	11,307	41
Provision of Services to Community, Society and Other Private Sector	387	2,300	17
<b>All Industries</b>	<b>657,022</b>	<b>2,034,820</b>	<b>32</b>

Table 5: Exports of goods and services of foreign affiliates, by industry

Industry Sector	Foreign affiliates' exports in each industry (millions of THB)	Total exports in each industry (millions of THB)	Percentage accounted for by foreign affiliates (%)
Agriculture, Hunting and Forestry	12	634	2
Mining and Quarrying	35,674	58,993	60
Production	2,142,147	2,674,221	80
Electricity, Gas and Water Supply	13	650	2
Construction	1,789	4,270	42
Wholesale, Retail Sale and Repair of Motor Vehicles, Motorcycles, Personal and Household Goods	144,933	262,176	55
Transport, Storage and Transportation	1,061	12,208	9
Financial Intermediation	6	386	1
Real Estate Activities, Renting and Business Activities	44,718	50,294	89
Health and Social Work	44	48	92
Provision of Services to Community, Society and Other Private Sector	3,004	26,326	11
<b>All Industries</b>	<b>2,373,401</b>	<b>3,202,611</b>	<b>74</b>

Table 6: Imports of goods and services of foreign affiliates, by industry

Industry Sector	Foreign affiliates' imports in each industry (millions of THB)	Total imports in each industry (millions of THB)	Percentage accounted for by foreign affiliates (%)
Agriculture, Hunting and Forestry	36	365	10
Mining and Quarrying	20,947	39,686	53
Production	1,837,015	2,267,893	81
Electricity, Gas and Water Supply	2,650	30,455	9
Construction	856	4,946	17
Wholesale, Retail Sale and Repair of Motor Vehicles, Motorcycles, Personal and Household Goods	169,835	317,058	54
Hotels and Restaurants	0.009	145	0
Transport, Storage and Transportation	8,615	47,537	18
Financial Intermediation	1,249	2,882	43
Real Estate Activities, Renting and Business Activities	4,808	12,158	40
Health and Social Work	705	1,114	63
Provision of Services to Community, Society and Other Private Sector	653	27,807	21
All Industries	2,047,370	2,841,056	72

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