

This document describes steps needed to reformat the 2015 input-output table of Thailand to GTAP format.⁸⁹ The original table, published in 2020, comprises of 180 sectors with 4 primary factors. The source also provides supporting tables that help to separate domestic and import transactions. The concordance used in this document yields a final submitted table of 59 GTAP sectors.

AY.1 Data Source

2015 Input-Output Table of Thailand from the Office of the National Economic and Social Development Council (NESDC, formerly NESDB), available at: https://www.nesdc.go.th/ewt_news.php?nid=9712&filename=io_page

AY.2 Description

Reference Year: 2015

Units: Million Baht

The unit of the original table is thousand Baht but the data in the submitted table is converted to million Baht. The average Baht/USD exchange rate in 2015 is 34.25 Baht per USD (Bank of Thailand).

Commodity by Commodity: Yes

The NESDC mentions that the survey is made on ‘Activity by Activity’ basis and can be used interchangeably for ‘Industry by Industry’, ‘Industry by Commodity’ and ‘Commodity by Commodity’ since each sector produces only one commodity.

Valuation: Producers’ prices, which can be separated to domestic and import transactions

Thai IO table comes with 5 matrices: PURCHASER, WHOLESALE, RETAIL, TRANSPORT and IMPORT. Hence, to make a PRODUCER matrix, we can subtract WHOLESALE, RETAIL and TRANSPORT from PURCHASER.

⁸⁹The 2010 IOT was also contributed, as in previous GTAP version, this time using GSEC3.

Structure: 180x180 sectors with 4 primary factors

The table used in preparation of the database is 178x178 sectors of which sector [024- Agricultural Services] and [179- Other services] are eliminated (See section 4 for details).

Figure 1. Overview of Thai IO table (See Appendix 1 for detailed descriptions)

Thailand IO table has 180x180 sectors with the classification similar to ISIC. There are 4 primary factors: [201 Wages and salaries], [202 Operating surplus], [203 Depreciation] and [204 Indirect taxes less subsidies]. The final demands consist of all standard final demand components. The import duty and import tax are separated from imports.

- Ownership of dwellings Imputed rent from ownership of dwellings is included in sector [163-Real estate]
- Mapping of primary factors (See Appendix 1 for detailed descriptions)
 - Labor = [201 Wages and salaries]
 - Capital = [202 Operating Surplus] + [203 Depreciation]
 - No land data.
 - Despite its name, from the definition provided by NESDC, [204 indirect taxes less subsidies] in the Value-added section of the table is “Commodity sales tax”, NOT “Production tax”. See section 4 for the solution. This implies that there is no production tax data.
- Mapping of final demands (See Appendix 1 for detailed descriptions)
 - Consumption = [301 Private consumption expenditures]
 - Government = [302 Government consumption expenditure]
 - Investment = [303 Gross domestic fixed capital formation]
 - Inventories = [304 Increase in stock]
 - Exports = [305 Export] + [306 Special exports]
 - Commodity tax on domestic goods = -[204 indirect taxes less subsidies] (see section 5 for solution)
 - Imports = [401 Imports] + [404 Special imports]
 - Commodity tax on imports = [402 Import duty]
 - Tariffs = [403 Import tax]
- Sectoral classification and mappings See appendix 1 and 2 for details.
- Other Problems/Inconsistencies
 - Sector [024- Agricultural Services] is a set of activities relates to many other agricultural industries. This sector will be disaggregated and distributed to related sectors. See section 4 for the procedure.
 - Flows are tax-inclusive. See section 4 for the solution.

AY.3 Constraints

- Balance condition satisfied.
- Sign condition satisfied.

AY.4 Dealing with problems/inconsistencies

Changes below are made to the original table:

Eliminating sector [179- Other services]

Rows and columns of [179- Other services] are all zeros, simply delete them from the table.

Making of “Commodity sales tax” from [204 indirect taxes less subsidies]

We can transpose this row to a column, change its sign to negative and place it as part of Final Demand (next to [Export] column).

Disaggregating sector [024- Agricultural Services]

Sector [024- Agricultural Services] will be disaggregated and distributed to other sectors following these steps:

- In each column, we distribute row 024 to other rows by applying its cost structure which is indicated in column 024. At this step, final demands remain the same since every item in row 024 in final demands are all zeros. Note the changes in total intermediate (X_i^D) and total output (Q_i^D) due to the changes in intermediate flows; sum of changes made to other sectors must equal to total output of row 024.

$$new_x_{i,j} = x_{i,j} + x_{024,j} * \frac{x_{i,024}}{x_{024}} \text{ where } i \neq 024$$

$$new_x_{024,j} = 0$$

$$\sum_{i \neq 024} (new_Q_i^D - Q_i^D) = Q_{024}^D$$

- Replace the total input row with the updated total output column in step A. Likewise, sum of changes made to other sectors must equal to total input of row 024.

$$new_Q_j^S = new_Q_i^D$$

$$\sum_{i \neq 024} (new_Q_j^S - Q_j^S) = Q_{024}^S$$

- c Update the value-added section to match the changed total inputs in step B by distributing column 024 of value-added to other columns using the proportions of changes made to the total inputs to total input of column 024.

$$new_V_{m,j} = V_{m,j} + \frac{(new_Q_j^S - Q_j^S)}{Q_{024}^S} * V_{m,024} \text{ where } j \neq 024$$

$$new_V_{m,024} = 0$$

- d Calculate the new total intermediate input by subtracting the new value-added in step C from the new total input in step B.

$$new_X_j^S = new_Q_j^S - \sum_m new_V_{m,j}$$

- e At the IMPORT matrix, distribute column 024 to other columns by applying the proportion of sales structure of row 024.

$$new_x_imp_{i,j} = x_imp_{i,j} + \frac{x_prod_{024,j}}{X_prod_{024}^S} * x_imp_{i,024}$$

$$new_x_imp_{i,024} = 0$$

- f Subtract the new IMPORT matrix from the PRODUCER matrix in step D.
- g Apply RAS method to intermediate flows of the Matrix in step F.
- h Add up the balanced matrix in step G with the IMPORT matrix in step E. The result in this step is the balanced table of which sector 024 is distributed to other sectors. Row and column 024 are zeros and can be discarded

Splitting Taxes, sectors aggregating and conversion to final format

Procedures follow exercises 5-7 of Horridge et al. (2008).

AY.5 Deviations between the supplied table and those required for GTAP Database

The submitted table has 59 sectors that meet the minimum requirement for GTAP (30 sectors) and mandatory splits condition. Sign constraints and balancing conditions are all satisfied.

References

Horridge, M., R. McDougall, B. Narayanan and T. Walmsley. 2008. "Exercise in Contributing I-O Tables to the GTAP Data Base," Center for Global Trade Analysis, Purdue University.

Huff, K., R. McDougall, and T. Walmsley. 2000. "Contributing Input-Output Tables to the GTAP Data Base," Technical Paper No. 1, Center for Global Trade Analysis, Purdue University.

Appendix

Table 8.116: Thai IO table classification

Sector	Name	Description
001	Paddy	This sector covers the combined the production of both glutinous and no glutinous paddy. The by-product is straw.
002	Maize	This sector covers the combined the production of fresh, dried and young maize includes by-product.
003	Other cereals	Production in this sector combines sorghum and barley includes by-product.
004	Cassava	The only product included in this sector is fresh cassava roots.
005	Other root crops	The potato, sweet potato, taro root and root-crops not mentioned elsewhere
006	Beans and nuts	This sector covers beans and nuts of all kinds such as mung bean, castor seed, kidney bean, red bean, sesame and ground nut.
007	Vegetable	Vegetable such as chili, ginger, Chinese radish, onion, shallot, garlic, cabbage, tomato and other vegetables not mentioned elsewhere are included in this sector.
008	Fruits	"This sector includes the production of oranges, grapes, durians, rambutans, mangoes, pineapples, water melons, bananas, mangosteens, pomeloes, longens, jack fruits, lychees and other fruits not mentioned elsewhere."
009	Sugar cane	The product included in this sector is sugar cane which was consumed by household and put to industrial.
010	Coconut	Fresh coconut is the main product of this sector. Coconut leaf, coconut fiber, copra and coconut shell are the by-product.
011	Oil palm	Production in this sector combines oil palm and palm lily includes by-product.
012	Kenaf and jute	This sector covers the production of kenaf, jute and ramie.
013	Other crops for textile and matting	This sector includes the fiber and seed of kapok and other fiber crops.
014	Tobacco	Fresh tobacco leaf and seed are the two main agricultural products of this sector. Production is classified into Virginia Barley, Turkish and Native varieties.
015	Coffee and tea	This sector covers the production of all fresh coffee bean, tea leaf and cocoa.
016	Rubber	Latex from the rubber tree is the main product of this sector.
017	Other agricultural product	This sector covers flowers and seed of all kinds, including sunflower seed, ornamental plants, horse tamarind, mint and the like.

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Sector	Name	Description
018	Cattle and buffalo	This sector covers the production of cattle and buffalo for slaughter, export and breeding. Also included in this sector is fresh milk for dairying.
019	Swine	The only product included in this sector is swine.
020	Other livestock	Goat, sheep, horse, rabbit, crocodile, elephant and others are covered under this sector.
021	Poultry	This sector covers the production of chickens, ducks and geese.
022	Poultry products	The product covered by this sector is egg derived from raising fowl.
023	Silk worm	This sector includes the products of silk-worm and silk cocoons.
024	Agricultural services	This sector covers the plough services using both animals and tractors.
025	Logging	This sector includes logs of all kinds such as teak, yang, etc.
026	Charcoal and fire-wood	This sector covers the production of charcoal and firewood.
027	Other forest products	Products of this sector are bamboo, bamboo shoot, rattan and other forest products.
028	Ocean and coastal fishing	Covered in this sector are ocean fishing, coastal fishing and coastal fish-cultivation.
029	Inland fishing	This sector covers the activities of both inland fish catching and cultivation.
030	Coal and lignite	This sector includes establishments primarily engaged in mining coal and lignite.
031	Petroleum and natural gas	This sector covers the exploration activities for crude petroleum and natural gas, the drilling, completing and equipping of wells carried out on an own-account basis, and the operation of oil and natural gas wells.
032	Iron ore	This sector includes activities primarily involving the extraction and extraction and dressing and dressing of iron ore.
033	Tin ore	The coverage of this sector includes activities involving in extracting and dressing of tin ore.
034	Tungsten ore	This sector includes activities involved in extraction and preparing tungsten ore.
035	Other non-ferrous metals	This sector includes activities involved in extraction and dressing non-ferrous ore, such as antimony, chromite, columbite, copper, manganese, monazite, tantalite, zenotize, zinc, zircon and lead ore.
036	Fluorite	This sector covers the activities of exploring for and extraction of fluorite.
037	Chemical fertilizers	Covered in this sector are activities related to the mining or other extraction of mineral such as fluorite, phosphate and nitrate mineral.
038	Salt	Covered in this sector are activities related to extraction of rock salt and the production of salt from sea water.
039	Limestone	This sector primarily covers the activity involved in the extraction of limestone.
040	Stone quarrying	This sector covers the activities of stone quarrying, clay extraction, gravel and sand pit operation, clay pit operation, and marble mining.
041	Other mining and quarrying	Excluding stone quarrying, this sector covers activities of mining and other quarrying of produce such as asbestos, calcite, diatomite, dolomite, feldspar, gypsum, marl quartz, silica sand and jewelry stone.
042	Slaughtering	"This sector covers the activity of slaughter-houses and products such as fresh meat, pork, chicken and duck. Also included are hides of cattle and buffalo, feathers of chicken and duck, buffalo horns and other by-products of cattle, buffalo, swine, chicken and duck."

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Sector	Name	Description
043	Canning and preserving of meat	This sector covers the activity of canning and preserving meat, and the preparation of ham, and sausage.
044	Dairy products	This sector covers pasteurized milk, condensed milk, cream, butter, cheese, margarine and ice cream.
045	"Canning and preservation of fruit and vegetables"	This sector covers dried and frozen fruits, canned and bottled fruits and vegetables, fruit and vegetable juice, jam, jellies and others.
046	"Canning and preservation of fish and other sea foods"	This sector covers frozen fish, salted and dried fish and preserved fish.
047	Coconut and palm oil	This sector covers coconut oil, palm oil, coconut cake and palm cake.
048	Animal oil, animal fat, vegetable oil and by-products	The products are lard, animal fat, soy-been oil, cotton-seed oil, kapok-seed oil, sunflower-seed oil, rice- bran oil, other vegetable oil, and their by-products.
049	Rice milling	This sector covers production of husked-cleaned-polished rice, parboiled rice, broken rice, rice bran and rice husk.
050	Tapioca milling	This sector covers milled products of cassava of all kinds such as tapioca flour, tapioca chips and tapioca pellets.
051	Grinding of maize	This sector covers maize milling activities such as the grinding corn, corn cob and other maize products.
052	Flour and other grain milling	This sector covers the activity of flour and other grain milling.
053	Bakery products	This sector covers all bakery products such as bread, cake, pies, crackers.
054	Noodles and similar products	Covers in this sector are noodles of all kinds such as yellow noodles, white noodles made from rice flours, spaghetti, macaroni, etc. Also included in this sector is the production of instant noodles.
055	Sugar	This sector covers and refined sugar made from sugar-cane and coconut tree as well as the by-products of sugar such as syrup, molasses and bagasse.
056	Confectionery	Candies, chocolate, chewing gum and other confectioneries are covered by this sector.
057	Ice	Ice is the sole product of this sector.
058	Monosodium glutamate	Monosodium glutamate is covered in this sector.
059	Coffee and tea	This sector covers the activities involved in the processing of coffee and tea. The productions covered by this sector are coffee and tea powers, instant coffee and tea as well as roasted coffee beans and tea leaves.
060	Other food products	This sector includes soy sauce, bean curd, fish sauce, vinegar, salted and fermented eggs, spices, table salt, other sauces and other prepared food.
061	Animal feed	Covered in this sector is the production of all kinds of animal feed such chicken feed, fish meal.
062	Distilling and spirits blending	This sector covers brandy, liqueurs and wine.
063	Breweries	Malt and beer are included in this sector.
064	Soft drinks and carbonated water	This sector covers soda water, carbonated fruit drinks, distilled water and the other soft drinks.

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Sector	Name	Description
065	Tobacco processing	This sector covers the activities of tobacco-leaf processing. Only dried tobacco-leaf is included in this sector. There are four kinds of dried tobacco-leaf, i.e., Virginia, Burley, Turkish and Native.
066	Tobacco products	This sector consists of cigar, cigarettes, cut tobacco and chewing tobacco.
067	Spinning	This sector includes cotton, synthetic silk yarn, spun, short and long synthetic staple. Excluded from this sector are yarns from jute and kenaf.
068	Weaving	Covered in this sector are cotton fabrics, mixed-cotton fabrics, synthetic fabrics and silk fabrics. Jute and kenaf fabrics are not included here.
069	"Textile bleaching, printing and finishing"	This sector covers the activities of printing, bleaching and finishing textile.
070	Made-up textile goods	This sector covers all textile processed products not classified elsewhere. Products included are household textile furnishing materials, textile bags, canvas products, lace and lace products, textile-coated fabrics, felt and felt products and textile wadding material.
071	Knitting	Covered in this sector are knitted fabrics and products from knitted fabrics. Knitting products made directly from yarn such as stocking are also included.
072	Wearing apparel	"This sector covers the products of wearing apparel and allied clothing produced in factory, except woven products such as handkerchiefs, neckties, shawls and veils Excluded are all kind of wearing apparel made by tailors."
073	Carpets and rugs	This sector covers only the products of carpets and rugs made from textile materials. Carpets and rugs from straw or material other than textile were not included.
074	Jute mill products	Covered in this sector are products made from kenaf and jute. Other products included are yarn and fabrics of kenaf and jute except for those used in gunny bags. However, fishing nets made from materials of all kinds are included in this sector.
075	Tanneries and leather finishing	The tanning and finishing of animal leather and skin are included in this sector. Excluded are all kinds of artificial leathers.
076	Leather products	Leather and artificial leather products are covered in this sector.
077	Footwear, except of rubber	This sector covers footwear made of leather, fabrics and other materials. It excludes that wholly made of wood or moulded rubber or plastic.
078	Saw mills	This sector covers sawn timber and other wooden construction materials such as plywood and chip board.
079	wood and cork products	Except for furniture and fixtures, this sector covers products made from wood, rattan and bamboo such as wooden boxes and containers. Also included are handicraft utensils, articles and parts of equipment which can be commonly installed in different kinds of equipments.
080	Wooden furniture and fixtures	This sector covers all kinds of furniture and fixtures except those made of metal.
081	Pulp, paper and paperboard	This sector covers pulp, paper and paperboard.

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Sector	Name	Description
082	Paper and paperboard products	This sector included all kinds of paper and paperboard products such as paper boxes, book covers, writing-pads, envelopes, labels, paper bags and sanitary paper. Publishing house production such as books magazines and newspapers are not included.
083	Printing and publishing	"This sector covers printing activities by one or more of the common processes such as the use of the letter-press, lithographing, offset printing and bookbinding. Also included are the publishing of newspapers, periodicals, books and maps."
084	Basic industrial chemicals	"This sector covers the manufacture of basic industrial chemicals such as hydrogen, oxygen, nitrogen, chlorine, sulfur and other chemical elements; inorganic acids and other oxygen compounds of metalloids such as hydrochloric acid, sulfuric acid, nitric acid and carbon dioxide; inorganic bases and metallic oxides such as ammonia and caustic soda; salts of inorganic acids such as aluminum sulfate, potassium nitrate, soda ash, sodium silicate and calciumhypochloride; carbides; and organic chemicals such as methylalcohol, polyhydric alcohols, esters of polyhydric alcohols, acetic acid and aldehydes."
085	Fertilizer and pesticides	The products of this are urea, ammonium sulfate, phosphate, chemical fertilizer, organic fertilizer, pesticides and insecticides.
086	Petrochemical products	"This sector covers the activities involved in the processing of petrochemical. The productions covered by this sector are upstream production such as Ethylene, Propylene; intermediate production such as Vinyl chloride monomer, Styrene monomer and downstream production such as Polyvinyl chloride, Polyethylene, etc."
087	Paints	"This sector covers the manufacture of paints, varnishes, stains and shellac, lacquers, enamels and japans. Also included are the manufacture of allied products such as composite thinners, paint removers, paint brush cleaners, putty and other coating and filling material. Dyes, organic and inorganic pigments are not included."
088	Drugs and medicines	This sector includes the production of drugs and medicines in all forms such as tables, capsules, powder, syrup and liquids for injection. Traditional medicine such as herbs is also included.
089	Soap and cleaning preparations	This products includes in this sector are soap, detergent, shampoo, glycerine and toilet preparation.
090	Cosmetic	This sector includes the production of perfumes, cosmetic, hair cream, toothpaste, talcum powder and deodorant.
091	Matches	This sector covers matches of all kinds.
092	Other chemical products	"Included in this sector are the manufacture of chemical products such as furniture and metal polishes, leather polishes, waxes, adhesive and glues, candles, inks, carbon black and essential oil. Also included are tanning and dyeing material such as natural indigo, vegetable dye, tanning agents and inorganic pigments. Wood chemicals such as gums and incense products such as joss sticks are also covered."
093	Petroleum refineries	This sector covers oil-processing refineries. The products if this sectors are gasoline, jet oil, LPG, asphalt, paraffin, sulfur, kerosene, diesel and fuel oil.
094	Other petroleum products	This sector covers refined oil, refined grease and lubricating oil
095	Rubber sheet and block rubber	This sector covers rubber sheets, block rubber, crepe rubber and other processed rubber.

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Sector	Name	Description
096	Types and tubes	This sector covers all types and tubes such as those for passenger car, truck and bus, tractor, motorcycle and bicycle.
097	Other rubber products	"This sector covers the manufacture of rubber products not classified elsewhere such as rubber raincoats, rubber gloves, rubber bags, rubber mats, rubber toys, rubber bands, rubber hose and tubes, rubber bottles and rubber sponges."
098	Plastic ware	"This sector covers the moulding, extruding and fabricating of plastic articles such as plastic household articles, plastic containers and cups, plastic mats, laminated sheets. Also included are plastic components for insulation, plastic furniture, and plastic industrial supplies."
099	Ceramic and earthen ware	The sector covers pottery, ceramic and earthenware for industrial and construction use. Sanitary supplies are also included.
100	Glass and glass products	This sector consists of window flat glass, bottles, drinking glasses, lamp chimneys and other.
101	Structural clay products	This sector covers bricks, tiles pipes, refractory bricks and other similarly structural clay products.
102	Cement	This sector consists of portland cement, white cement and lime.
103	Concrete and cement products	"This sector covers the manufacture of concrete products such as blocks, posts and piles, precast elements for prefabricates construction materials, other reinforced and pre-stressed concrete products as well as Buddha images and spirit houses."
104	Other non-metallic products	"Included in this sector are the manufacture of gypsum plaster products, wood-wool board (cellocrete) and other asbestos product. Cut stone products which were not produced in conjunction with quarrying and all other non-metallic mineral products not classified elsewhere are also included."
105	Iron and steel	The sector covers pig iron, ingot, ferro-silicon, ferro-manganese and (by-product of pig iron).
106	Secondary steel products	The products of this sector are galvanized sheet, tin plate, angle bar and rod wire, tube and pipe. Steel forging, steel casting, polished steel are also included.
107	Non-ferrous metal	"This sector covers the activities relating to the manufacture of primary non-ferrous metal products consisting of primary and secondary smelting, alloying, refining, rolling and drawing, founding and casting."
108	Cutlery and hand tools	"This sector covers the manufacture of table, kitchen and other cutlery, hand and edge tools such as axes, sickles, shovels, rakes and other agricultural and garden tools, hammers, screw drivers, files and handsaws. Plumbers', masons', mechanics' and machinists' precision hand tools, hinges, locks key sets, builders' hardware and marine luggage and vehicles hardware are also included."
109	Metal furniture and fixtures	This sector covers the manufacture and alteration of furniture and fixtures consisting primary of metal for household, office, public building, transport equipment, professional and restaurant uses.
110	Structure metal products	"This sector covers the manufacture of steel or other metal structure components such as bridges, tanks, building structure, doors and screens, window frames and sashes, shutter, staircases, wrought iron gates. Other architectural metalwork such as metal components for ventilating and air-conditioning systems as well as steam and water-tanks are also included."

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Sector	Name	Description
111	Other fabricated metal products	"This sector covers the manufacture of fabricated metal products such as metal cans from tinplate, enameled sheet metal, metal conveyances, metal shipping containers, metal stamping, fabricates wire and wire products from purchased wire rods (excluding insulated wire and cable). Sanitary ware, plumbers' brass good, pipe fittings, enameling, lacquering, galvanizing, electroplating and polishing metal products and a variety of metal products not classified elsewhere are also included. In addition, the sector covers common machinery part such as bearing an spring, except specialized parts for motor vehicles, aircraft and ships which belong to their respective machinery sectors."
112	Engines and turbines	This sector covers the assembling of stream engines, other engines and turbines. Also included are the parts and repair of engines and turbines.
113	"Agricultural machinery and equipment"	This sector covers the assembling of cultivating machines and equipment, sawing and planting machines, harvesting machines and equipment. parts and repair of agricultural machines and equipment.
114	Wood and metal working machines	This sector covers the activities relating to the assembling of wood and metal working machines such as sawing machines, and the parts and repairing of such machines.
115	Special industrial machinery	"This sector covers all kinds of industrial machines except those used for wood and metalworking, agricultural machines as well as electrical machines. Machinery included in the sector is for example, construction and mining machines, food and chemical machines, leather and textile machines, etc. Also included in this sector are pneumatic tools, carrying and loading equipment such as cranes, forklifts and loading trucks, etc. Parts of such machinery and their repair are also included."
116	"Office and household machinery and appliances"	This sector covers the assembling of office and household machinery and appliances such as air conditioners, refrigerator, freezers, water cooler, sewing machines, typewriters, electric calculators and all parts. Since the repair of them are not covered in this sector.
117	"Electrical industrial machinery and appliances"	This sector covers the products of electrical industrial machinery and appliances such as generators, transformer, rectifiers, motors, electrical hand tools, electrical motors, electrical welding machines and other electrical machines. Parts for these machines are also included.
118	"Radio, television and communication equipment and apparatus"	This sector covers the assembly of radios, television sets, tape and cassette recorders, stereo components, telephone and other communication equipment. Also included are their parts but repairing is excluded.
119	"Household electrical appliances"	This sector covers the production of household electrical appliances such as electric stoves, electric iron, electric fans, rice cooker, toasters, food mixers and all their parts.
120	Insulated wire and cable	This sector covers the production of insulates wire and cable.
121	"Electric accumulators and batteries"	This sector covers the production of batteries and dry cells Parts such as lead plate are also included
122	"Other electrical apparatus and supplies"	This sector covers electrical apparatus and supplies not classified elsewhere, such as electric bulbs, and related light sources. Other products included are conductors, fuses, connectors, etc.

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Sector	Name	Description
123	Ship building and repairing	Covered in this sector are the building and repairing of ship, boat and other water transport vessels. Part for these vessels are also included in the sector.
124	Railroad equipment	This sector covers the production of railroad passenger cars and wagons. The parts and repairs of such equipment are also included in the sector.
125	Motor vehicles	This sector covers the production and assembly of motor vehicles. The products included are passenger cars, trucks, vans, pick-up, buses and the classis and parts of such vehicles.
126	Motor vehicles	The products of this sector are motorcycles, tricycles, bicycles, carriages and parts for such products.
127	Repair of motor vehicles	This sector covers automobile and motorcycle repair of all kinds.
128	Aircraft	This sector covers only aircraft repairing
129	Scientific equipment	The sector covers measuring equipment, medical equipment and the parts and repairs of such equipment.
130	Photographic and optical goods	This sector included optical goods, spectacles, telescopes, astronomical, instrument, microscopes, projectors, cameras, photo copying apparatus and parts for these products.
131	Watches and clocks	This sector covers the production and assembly of clocks and watches.
132	Jewellery and related articles	"This sector covers activities primary related to the manufacturing of jewellery using precious metals, precious and semi-precious stones and pearls, silverware and plotted ware using silver, gold and other precious metal plating. The cutting and polishing of precious stones and the making of coins and medals from precious metal are also included."
133	Recreational and athletic equipment	The products in this sector include musical instruments, music recording, footballs, golf balls, badminton rackets, boxing gloves and other recreational and athletic equipment.
134	"Other manufactured goods"	"This sector covers the products that have been excluded from the manufacturing sectors by code 042 to 133. The main products of this sector are stationary, toys, umbrella, zippers, buttons, fasteners, etc."
135	Electricity	"This sector covers the generation, transmission and distribution of electric for sale to household, industrial, commercial and public users. Electricity generation plants owned by manufacturing enterprises for their own use are also included."
136	Pipe line and gas distribution	This sector covers gas distribution such as LPG, ethane, propane, natural gasoline (NGL).
137	Water work and supply	This sector covers the activities related of the purification and distribution of water to household, industrial, commercial and public users. The operation of irrigation system is not included in this sector.
138	Residential building construction	"This sector covers the construction of new building for residential purposes such as homes, sop houses, apartment and dormitories. The activities of extending, repairing, painting and decorating buildings as well as the installation of electricity and air conditioning systems are also included. Excluded from this section is the cost of acquiring land."

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Sector	Name	Description
139	"Non-residential building construction"	"This sector covers the construction of new non-residential building such as business building, factories, hotels, school, hospitals, and warehouse as well as related activities of extension and repair. Excluded are the constructions of railway station, power station or communication plants."
140	"Public works for agriculture and forestry"	This sector covers the construction and extension of irrigation works for agriculture and forestry. Only new construction is included.
141	Non-agriculture public works	This sector covers the construction and repair of highway, streets, roads, bridges, airports, water supplies and sewage systems.
142	Construction of electric plants	This sector covers the construction and repair of electricity generating plants and transmission systems.
143	"Construction of communication facilities"	This sector covers the construction and repair of broadcasting and communication systems such as radio station, town telephone installation and other facilities.
144	Other construction	This sector covers the construction work not classified elsewhere such as the construction of public parks, parking lots, golf courses, tennis courts, swimming pools and athletic fields of all kinds.
145	Wholesale trade	"This sector includes establishments for the re-sale of new and used goods to retail, industrial, commercial, institutional and professional outlets, as well as for other wholesale uses. Agents engaged in buying or selling merchandise are also covered in the sector. The principal type of business included are wholesale merchants engaged in own-account buying and selling, industrial distributors, exporters and co-operative buying associations and sales offices maintained by mining or manufacturing enterprises for the purpose of marketing their products. Also included are co-operative associations engaged in the marketing of farm produce, scrap metal and waste dealers, junk yards, wholesalers who sort and grade goods in large lots wholesale packers, bottling companies except those engaged in packing or bottling in airtight containers."
146	Retail trade	"This sector included establishments engaged in the sale to the general public of new and used goods for personal or household consumption. Retailing establishments include shops, department stores, stalls, gasoline service stations, retail motor vehicle dealers, peddlers, consumer co-operatives, and auction houses. Included also are own-account retailers who act as agents, buying and selling on consignment or on a commission basis. Establishments engaged in selling displayed merchandise such as typewriters, stationary and petrol to the general public are classified in this group though these goods may not be for personal or household uses."
147	Restaurants and drinking places	The sector includes establishments engaged in selling prepared food or drink for immediate consumption such as nightclubs, restaurants, bard, coffee shops, etc. Also included are canteens and eating facilities in plants and offices. Restaurants operated by hotels and massage parlors for the general public are also included. Peddlers of food and noodle stands are also covered in this sector.

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Sector	Name	Description
148	Hotels and places of loading	This sector includes establishments engaged in the provision for fee of lodging and camping facilities, whether open to the general public or restricted to members of a particular organization. Related restaurant facilities operated for the purpose of serving the establishment's customers are also included.
149	Railways	This sector covers the service related to the transportation of both passengers and cargo. Also included are dining car services. Since the repair of railway equipment is not covered in this sector.
150	Road passenger transport	This sector covers only the transport of passengers by taxicabs, buses, inter-city buses and other vehicles such as tricycles. Private vehicles for personal transportation are excluded.
151	Road freight transport	This sector covers local and long distance trucking. Also included are such services for one's own business purposes.
152	Land transport support service	This sector includes all land transport support services such as the operation of parking lots, toll roads rental of automobiles and self-driven trucks.
153	Ocean transport	This sector covers the ocean transport of both passengers and freight.
154	Coastal and inland water transport	This sector refers to the operation of freight and passenger vessels along various parts of the coast of Thailand. Those operated on inland waterways, river ferries and tugboats are included.
155	Water transport services	"Included in this sector are the provision of supporting services for water transport of all kinds such as the maintenance and operation of harbors, docks, lighthouses and other navigation aids, loading and unloading services, the salvaging of vessels, ship leasing and rental. Included in this sector are the activities of the Port Authority of Thailand."
156	Air transport	"The transportation of passengers and freight by air by regular services or by charter are covered in this sector. The operation of airports, landing fields and navigational facilities such as flight control centers, radar stations and the rental of aircraft are also included in the sector."
157	Other services	"This sector covers the activity of establishments engaged in providing travel information and arranging tours and transportation for passengers. The activities of establishments engaged in cargo transportation are also covered."
158	Storage and warehousing	This sector covers the operation of storage facilities and warehouse. Silo services for drying maize are also included.
159	Post and telecommunication	This sector covers the services of central and provincial offices of the Telephone Organization of Thailand. Construction and radio-communication activities of the Post and Telegraph Department are not included.
160	Banking services	This sector covers all activities of monetary and financial institutions. Included are the central bank, commercial banks, development banks, saving bank, rural banks, pawnshops, credit cooperatives and foreign exchange dealers.
161	Life insurance services	Life insurance is defined as the activities of life insurance institutions and related services.
162	Other insurance services	This sector covers all insurance other than life such as fire, accident, marine and health insurance.
163	Real estate	This sector covers the activities of real estate agents and brokers

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Sector	Name	Description
164	Business services	The sector includes service such as accounting, auditing and book-keeping services, data processing and tabulating services, engineering, architectural and technical services, parliament and the judicial authorities.
165	Public administration	The sector covers the central, provincial and local government, as well as the royal household, parliament and the judicial authorities.
166	Sanitary and similar services	"This sector covers the activities related to sanitary and similar services such as garbage and sewage disposal, the operation of drainage systems and the purification of water for consumption. Also included are cleaning services"
167	Education	"This sector covers all public and education institution at all levels such as kindergartens, primary schools, secondary schools, colleges and universities. Also included are vocational schools and others providing specialized education such as language and painting schools. Research institute, hospitals belonging to universities, as well as education provided neither by government nor household are not included."
168	Research	"This sector includes institutions primarily engaged in basic and general research in the biological, physical and social sciences. Since information on private research institutes in Thailand are not available, only research accomplished by government offices, universities and public enterprises are included."
169	Hospital	"Covered in this sector are medical, surgical, dental and other health services. This includes hospitals, sanitariums, nursing homes and similar institution, maternity and child welfare clinics, consulting offices of physicians, surgeons and other medical practitioners such as dentists, the services of midwives and nurses in private practice ambulance service and medical and dental laboratories that provide testing, diagnostic and other service to the medical and dental professions. Activities primary relating to the manufacture of dental supplies and artificial teeth to order are also included."
170	Business and labor associations	"This sector includes private business institution such as the Board of Trade of Thailand, the Thai Chamber of Commerce, The Association of Thai industries and professional organizations such as the Engineering Institute of Thailand, labor unions and labor organization."
171	Other community service	"This sector includes institution engaged in providing social welfare services such as the Red Cross Society and other organization for the collection and allocation of charitable contribution such as children and societies, dry nurseries, orphanages, home for destitute adults, homes for handicapped person, home for aged, family welfare society and other charitable organization. This section was classified broadly into three types of organizations, namely, Red Cross Society, other charitable organizations and religious organizations."
172	Motion Picture Production	This sector covers the activities relating to the production of motion pictures for showing. They also include both still and slide films. Other related services such as film developing, printing, film editing, titling, copying and distributing of both local and foreign films are also included.
173	Movie theatres	All theatres and movie houses are covered in this sector.

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Sector	Name	Description
174	Radio, television and related services	Included in this sector are radio and television stations primarily engaged in the production and dissemination of audiovisual programs for the public. The activities of television and radio relay stations are also included in this sector.
175	Libraries and museums	This sector covers the operation of libraries, information centers, archeological and others museums, art galleries, botanical and zoological gardens and similar institutions.
176	Amusement and recreation	"This sector covers the activities of theatres providing theatrical presentation such as classical drama, dance and concerts, entertainment services such as those provided by bands and orchestras and musical recording. This sector also includes the services related to theatrical presentation such as those provided by booking agencies for plays. Self-employed artists and instructors such as actors, dancers, musicians, singer and other entertainers and producers for radio and television programs, motion picture, play and other presentations, composers and song writers, authors, painters and operators of dance halls, bowling alleys, billiard and pool rooms, race tracks, boxing stadiums, football fields, sports clubs, gymnasiums, tennis courts and golf courses, sport promoters, operators, of amusement parks and renters of pleasure boats, motorcycles, golf carts, saddle horses and similar recreation goods are also included in this sector."
177	Repair not classified elsewhere	"This sector included establishments specialized in the repair of household appliances, equipment and furnishing, motor cars and other consumers goods which are not classified elsewhere. Also included in this sector are establishments specialized in the installation of household appliances such as stoves and ranges, refrigerators, air-conditioning apparatus and television sets."
178	Personal service	"This sector included establishments primarily engaged in washing, ironing, dry cleaning, pressing and dyeing apparel, house furnishing or household fabrics. The repair of clothing, bedspreads, blanket, curtains and other personal and household textiles are also included in this sector. This sector also included the services of maids, cooks, gardeners, caretakers and other maintenance workers for household, whether provided by individuals who are employed by these households or by business units primarily engaged in furnishing these services. In addition, establishments engaged in rendering personal care and services not classified elsewhere such as barber hairdressing and beauty shop, photographic studios, Turkish baths establishments, massage parlors and crematories are also included."
179	Other service not classified elsewhere	This sector included all services that are not covered by other sectors.
180	Unclassified	This sector includes mainly activities not classified elsewhere.
190	Total intermediate transactions	This is the sum of sectors 001 to 180
201	Wages and salaries	"This sector covers compensation by employers to employees both in cash and in kind. Employees are classified as long-term workers, temporary workers, temporary workers, executives and hired laborers in the agricultural sector, but not family workers."
202	Operating surplus	The operating surplus is defined as the total value added including business income tax, minus wages and salaries, depreciation and indirect taxes, less subsidies.

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Sector	Name	Description
203	Depreciation	"Depreciation consists of capital consumption allowances for all fixed assets. The imputation of depreciation of government buildings is describe in the public administration sector and that of self- occupied dwellings is in real estate sector. The depreciation on fixed assets for leasing such as computers is shown in the sector of owner of fixed assets for leasing such as computers is show in the sector of owner of fixed assets."
204	Indirect taxes less subsidies	"Indirect taxes cover the domestic commodity sales tax, export duty, licensing fees, service tax of hotels, restaurant and the like, duty stamps and special commodity tax such as those on automobiles, electrical equipment, alcoholic drinks, cigarettes, petroleum products, etc."
209	Total value added	This is sum of all the primary inputs from 201 to 204.
210	Control total	This is sum of total intermediate transactions and value added.
301	Private consumption expenditures	"Private consumption expenditures are the current expenditures on goods and service by households and private non-profit organizations. The expenditure also cover the expenditures of Thai nationals abroad as tourists and the expenditures of the family of a foreigner who is working for a private company or a non- profit organization in Thailand."
302	Government consumption expenditure	"Government consumption expenditures cover all current expenditures of government for goods and services, including those for the police and military forces. Expenditures of Royal household are also included. However, consumption expenditures of public enterprises which are profit-making are not included."
303	Gross domestic fixed capital formation	"Gross domestic fixed capital formation includes fixed assets such as land, buildings, machinery and equipment belonging to households, government and private enterprise except those for military use. Public infrastructure such as roads, dams and power stations are also included. However, installation costs of equipment and machinery are not covered."
304	Increase in stock	"Stocks or inventories comprise the followings : finished products stored in producers' factories or warehouses, unused raw materials purchased by producers, semi-processed products and products on processing lines and marketable stocks held by wholesalers and retailers. Stocks kept by households are not included."
305	Export	In the input-output table at purchasers' prices, exports were valued at f.o.b. prices. As for producers' prices, exports were valued by subtracting trade margins and transport costs from f.o.b. process.
306	Special exports	"Special exports cover non-merchandised goods and services which are not included in the official export statistics. Item which are included here are freight and insurance related to export, expenditures of foreign tourists in Thailand and related transportation cost, expenditures of foreign government organization, international organizations and families of diplomats, expenditures of foreign military bases, other service charges which are paid by foreigners and estimated smuggling."
309	Total final demand	This is the sum of codes 301 to 306.
310	Total demand	This is the sum of codes 190 and 309

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Sector	Name	Description
401	Imports	"Imports were valued at c.i.f. process plus tariff. However, for valuation at domestic producers' prices, the transport costs and insurance paid by the Thai importers were subtracted in order to avoid double counting. A special treatment was used here. The redundant transport costs and insurance were regarded as special exports and are treated in the special export sector."
402	Import duty	Customs duty on imports is included under this code.
403	Import tax	The Import tax includes both import sales tax and municipal tax on imported.
404	Special imports	"As in the case special exports, special imports are non-merchandised goods and services which are not covered in the official trade statistics, e.g. expenditures of Thai nationals abroad, expenditure of Thai government organizations and of the families of Thai diplomats outside Thailand and estimated smuggling into Thailand."
409	Total imports	This is the sum of codes 401 to 404
501	Wholesale trade margin	Wholesale trade margin is margin of goods from factory toward retail trade.
502	Retail trade margin	Retail trade margin is margin of goods from retail toward household consumption.
503	Transport cost	The transport costs is value of transport goods process from factory toward consumer.
509	Total trade margin and transport costs	This is the sum of codes 501 to 503
600	Control total	This is sum of total intermediate transactions and final demands which indicates the output distribution of the table and is equal to codes 190 + 309 + 409 + 509.
700	Total supply	The total supply is equal to codes 600 – 409 – 509.

Mappings

Table 8.117: Sectors in the submitted table (SEC)

Sector	Name	Description
1	PDR	Paddy rice
2	WGR	Wheat and Cereal grains
3	VFO	Vegetables, fruit, nuts and Oil seeds
4	C_B	Sugar cane, sugar beet
5	PFB	Plant-based fibers
6	OCR	Crops nec
7	CRM	Bovine cattle, sheep and goats, horses and Raw milk
8	OAP	Animal products nec
9	WOL	Wool, silk-worm cocoons
10	FRS	Forestry
11	FSH	Fishing
12	COA	Coal
13	O_G	Oil and Gas
14	OXT	Other Extraction (formerly omn Minerals nec)
15	MTP	Bovine and meat products

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Sector	Name	Description
16	VOL	Vegetable oils and fats
17	MIL	Dairy products
18	PCR	Processed rice
19	SGR	Sugar
20	OFD	Food products nec
21	B_T	Beverages and tobacco products
22	TEX	Textiles
23	WAP	Wearing apparel
24	LEA	Leather products
25	LUM	Wood products
26	PPP	Paper products, publishing
27	P_C	Petroleum, coal products
28	CHM	Chemical products
29	BPH	Basic pharmaceutical products
30	RPP	Rubber and plastic products
31	NMM	Mineral products nec
32	I_S	Ferrous metals
33	NFM	Metals nec
34	FMP	Metal products
35	MVH	Motor vehicles and parts
36	OTN	Transport equipment nec
37	ELE	Computer, electronic and optical products
38	EEQ	Electrical equipment
39	OME	Machinery and equipment nec
40	OMF	Manufactures nec
41	ELY	Electricity
42	GDT	Gas manufacture, distribution
43	WTR	Water
44	CNS	Construction
45	TRD	Trade
46	AFS	Accommodation, Food and service activities
47	OTP	Transport nec
48	WTP	Water transport
49	ATP	Air transport
50	WHS	Warehousing and support activities
51	CMN	Communication
52	OFI	Financial services nec
53	INS	Insurance (formerly isr)
54	RSD	Real estate activities and Dwellings
55	OBS	Business services nec
56	ROS	Recreational and other services
57	OSG	Public Administration and defense
58	EDU	Education
59	HHT	Human health and social work activities

Table 8.118: Mapping between GSEC(65) and SEC(59) or SMAP

No.	Code	Description	No.	Code	Description
1	PDR	Paddy rice	1	PDR	Paddy rice

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No.	Code	Description	No.	Code	Description
2	WHT	Wheat	2	WGR	Wheat and Cereal grains
3	GRO	Cereal grains nec	2	WGR	Wheat and Cereal grains
4	V_F	Vegetables, fruit, nuts	3	VFO	Vegetables, fruit, nuts and Oil seeds
5	OSD	Oil seeds	3	VFO	Vegetables, fruit, nuts and Oil seeds
6	C_B	Sugar cane, sugar beet	4	C_B	Sugar cane, sugar beet
7	PFB	Plant-based fibers	5	PFB	Plant-based fibers
8	OCR	Crops nec	6	OCR	Crops nec
9	CTL	Bovine cattle, sheep and goats, horses	7	CRM	"Bovine cattle, sheep and goats, horses and Raw milk"
10	OAP	Animal products nec	8	OAP	Animal products nec
11	RMK	Raw milk	7	CRM	"Bovine cattle, sheep and goats, horses and Raw milk"
12	WOL	Wool, silk-worm cocoons	9	WOL	Wool, silk-worm cocoons
13	FRS	Forestry	10	FRS	Forestry
14	FSH	Fishing	11	FSH	Fishing
15	COA	Coal	12	COA	Coal
16	OIL	Oil	13	O_G	Oil and Gas
17	GAS	Gas	13	O_G	Oil and Gas
18	OXT	Other Extraction	14	OXT	Other Extraction
19	CMT	Bovine meat products	15	MTP	Bovine and meat products
20	OMT	Meat products nec	15	MTP	Bovine and meat products
21	VOL	Vegetable oils and fats	16	VOL	Vegetable oils and fats
22	MIL	Dairy products	17	MIL	Dairy products
23	PCR	Processed rice	18	PCR	Processed rice
24	SGR	Sugar	19	SGR	Sugar
25	OFD	Food products nec	20	OFD	Food products nec
26	B_T	Beverages and tobacco products	21	B_T	Beverages and tobacco products
27	TEX	Textiles	22	TEX	Textiles
28	WAP	Wearing apparel	23	WAP	Wearing apparel
29	LEA	Leather products	24	LEA	Leather products
30	LUM	Wood products	25	LUM	Wood products
31	PPP	Paper products, publishing	26	PPP	Paper products, publishing
32	P_C	Petroleum, coal products	27	P_C	Petroleum, coal products
33	CHM	Chemical products	28	CHM	Chemical products
34	BPH	Basic pharmaceutical products	29	BPH	Basic pharmaceutical products
35	RPP	Rubber and plastic products	30	RPP	Rubber and plastic products
36	NMM	Mineral products nec	31	NMM	Mineral products nec
37	LS	Ferrous metals	32	LS	Ferrous metals
38	NFM	Metals nec	33	NFM	Metals nec
39	FMP	Metal products	34	FMP	Metal products
40	MVH	Computer, electronic and optical products	35	MVH	Motor vehicles and parts
41	OTN	Electrical equipment	36	OTN	Transport equipment nec
42	ELE	Machinery and equipment nec	37	ELE	Computer, electronic and optical products
43	EEQ	Motor vehicles and parts	38	EEQ	Electrical equipment
44	OME	Transport equipment nec	39	OME	Machinery and equipment nec
45	OMF	Manufactures nec	40	OMF	Manufactures nec
46	ELY	Electricity	41	ELY	Electricity
47	GDT	Gas manufacture, distribution	42	GDT	Gas manufacture, distribution
48	WTR	Water	43	WTR	Water

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No.	Code	Description	No.	Code	Description
49	CNS	Construction	44	CNS	Construction
50	TRD	Trade	45	TRD	Trade
51	AFS	Accommodation, Food and service activities	46	AFS	Accommodation, Food and service activities
52	OTP	Transport nec	47	OTP	Transport nec
53	WTP	Water transport	48	WTP	Water transport
54	ATP	Air transport	49	ATP	Air transport
55	WHS	Warehousing and support activities	50	WHS	Warehousing and support activities
56	CMN	Communication	51	CMN	Communication
57	OFI	Financial services nec	52	OFI	Financial services nec
58	INS	Insurance	53	INS	Insurance
59	RSA	Real estate activities	54	RSD	Real estate activities and Dwellings
60	OBS	Business services nec	55	OBS	Business services nec
61	ROS	Recreational and other services	56	ROS	Recreational and other services
62	OSG	Public Administration and defense	57	OSG	Public Administration and defense
63	EDU	Education	58	EDU	Education
64	HHT	Human health and social work activities	59	HHT	Human health and social work activities
65	DWE	Dwellings	54	RSD	Real estate activities and Dwellings

Table 8.119: Mapping between OSEC(178) and SEC(59) or MPIO

No.	Name	Short Name	No.	Code	Description
1	Paddy	Paddy	1	PDR	Paddy rice
2	Maize	Maize	2	WGR	Wheat and Cereal grains
3	Other Cereals	OthCer	2	WGR	Wheat and Cereal grains
4	Cassava	Cassava	3	VFO	Vegetables, fruit, nuts and Oil seeds
5	Other Root Crops	OthRoo	3	VFO	Vegetables, fruit, nuts and Oil seeds
6	Beans and Nuts	BeaNut	3	VFO	Vegetables, fruit, nuts and Oil seeds
7	Vegetables	Veget	3	VFO	Vegetables, fruit, nuts and Oil seeds
8	Fruits	Fruits	3	VFO	Vegetables, fruit, nuts and Oil seeds
9	Sugarcane	SugCane	4	C.B	Sugar cane, sugar beet
10	Coconut	Coconut	3	VFO	Vegetables, fruit, nuts and Oil seeds
11	Oil Palm	OilPalm	3	VFO	Vegetables, fruit, nuts and Oil seeds
12	Kenaf and Jute	KenafJut	5	PFB	Plant-based fibers
13	Crops for Textile and Matting	TexCrop	5	PFB	Plant-based fibers
14	Tobacco	Tobacco	6	OCR	Crops nec
15	Coffee and Tea	CoffTea	6	OCR	Crops nec
16	Rubber	Rubber	6	OCR	Crops nec
17	Other Agricultural Products	OthAgri	6	OCR	Crops nec
18	Cattle and Buffalo	CattBuff	7	CRM	Bovine cattle, sheep and goats, horses and Raw milk
19	Swine	Swine	8	OAP	Animal products nec
20	Other Livestock	OthLivst	8	OAP	Animal products nec
21	Poultry	Poultry	8	OAP	Animal products nec
22	Poultry Products	PoulProd	8	OAP	Animal products nec
23	Silk Worm	SilkWorm	9	WOL	Wool, silk-worm cocoons
25	Logging	Logging	10	FRS	Forestry

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No.	Name	Short Name	No.	Code	Description
26	Charcoal and Firewood	CharFire	10	FRS	Forestry
27	Other Forestry Products	OthFores	10	FRS	Forestry
28	Ocean and Coastal Fishing	OcFish	11	FSH	Fishing
29	Inland Fishing	InFish	11	FSH	Fishing
30	Coal and Lignite	CoalLign	12	COA	Coal
31	Petroleum and Natural Gas	PetroGas	13	O_G	Oil and Gas
32	Iron Ore	IronOre	14	OXT	Other Extraction (formerly omn Minerals nec)
33	Tin Ore	TinOre	14	OXT	Other Extraction (formerly omn Minerals nec)
34	Tungsten Ore	TungOre	14	OXT	Other Extraction (formerly omn Minerals nec)
35	Other Non-ferrous Metal Ore	OthNonFe	14	OXT	Other Extraction (formerly omn Minerals nec)
36	Fluorite	Fluorite	14	OXT	Other Extraction (formerly omn Minerals nec)
37	Chemical Fertilizer Minerals	FertilMin	14	OXT	Other Extraction (formerly omn Minerals nec)
38	Salt Evaporation	SaltEva	14	OXT	Other Extraction (formerly omn Minerals nec)
39	Limestone	Limestone	14	OXT	Other Extraction (formerly omn Minerals nec)
40	Stone Quarrying	StoneQua	14	OXT	Other Extraction (formerly omn Minerals nec)
41	Other Mining and Quarrying	OthMin	14	OXT	Other Extraction (formerly omn Minerals nec)
42	Slaughtering	Slaught	15	MTP	Bovine and meat products
43	Canning Preserving of Meat	CanMeat	15	MTP	Bovine and meat products
44	Dairy Products	DairyPro	17	MIL	Dairy products
45	Canning of Fruits and Vegetables	CanFrVeg	20	OFD	Food products nec
46	Canning Preserving of Fish	CanFish	20	OFD	Food products nec
47	Coconut and Palm Oil	CoPaOil	16	VOL	Vegetable oils and fats
48	Other Vegetable Animal Oils	OthOil	16	VOL	Vegetable oils and fats
49	Rice Milling	RiceMill	18	PCR	Processed rice
50	Tapioca Milling	TapiMill	20	OFD	Food products nec
51	Drying and Grinding of Maize	DryMaize	20	OFD	Food products nec
52	Flour and Other Grain Milling	FlourMil	20	OFD	Food products nec
53	Bakery Products	Bakery	20	OFD	Food products nec
54	Noodles and Similar Products	Noodles	20	OFD	Food products nec
55	Sugar	Sugar	19	SGR	Sugar
56	Confectionery	Confect	20	OFD	Food products nec
57	Ice	Ice	20	OFD	Food products nec
58	Monosodium Glutamate	Monosodi	20	OFD	Food products nec
59	Coffee and Tea Processing	CofTeaPr	20	OFD	Food products nec
60	Other Food Products	OthFood	20	OFD	Food products nec
61	Animal Feed	AnimFeed	20	OFD	Food products nec
62	Distilling Blending Spirits	Spirits	21	B_T	Beverages and tobacco products
63	Breweries	Brew	21	B_T	Beverages and tobacco products
64	Soft Drinks	SoftDrnk	21	B_T	Beverages and tobacco products
65	Tobacco Processing	TobaProc	21	B_T	Beverages and tobacco products

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No.	Name	Short Name	No.	Code	Description
66	Tobacco Products	TobaProd	21	B_T	Beverages and tobacco products
67	Spinning	Spinning	22	TEX	Textiles
68	Weaving	Weaving	22	TEX	Textiles
69	Textile Bleaching and Finishing	TexBleac	22	TEX	Textiles
70	Made-up Textile Goods	TexGood	22	TEX	Textiles
71	Knitting	Knitting	22	TEX	Textiles
72	Wearing Apparels Except Footware	Apparels	23	WAP	Wearing apparel
73	Carpets and Rugs	CarpRug	22	TEX	Textiles
74	Cordage Rope and Twine Products	RopeTwin	22	TEX	Textiles
75	Tanneries Leather Finishing	TanLeat	24	LEA	Leather products
76	Leather Products	LeatProd	24	LEA	Leather products
77	Footwear Except Rubber	Footwear	24	LEA	Leather products
78	Saws Mills	SawsMil	25	LUM	Wood products
79	Wood and Cork Products	WoodCork	25	LUM	Wood products
80	Furniture and Fixtures Wood	FurnWood	25	LUM	Wood products
81	Pulp Paper and Paperboard	PulpPape	26	PPP	Paper products, publishing
82	Paper Products	PapeProd	26	PPP	Paper products, publishing
83	Printing and Publishing	PrintPub	26	PPP	Paper products, publishing
84	Basic Industrial Chemicals	BasiChem	28	CHM	Chemical products
85	Fertilizer and Pesticides	FertPest	28	CHM	Chemical products
86	Synthetic Resins and Plastics	SynResin	28	CHM	Chemical products
87	Paints Varnishes and Lacquers	Paints	28	CHM	Chemical products
88	Drugs and Medicines	DrugMed	29	BPH	Basic pharmaceutical products
89	Soap and Cleaning Preparations	SoapClea	28	CHM	Chemical products
90	Cosmetics	Cosmet	28	CHM	Chemical products
91	Matches	Matches	28	CHM	Chemical products
92	Other Chemical Products	OthChem	28	CHM	Chemical products
93	Petroleum Refineries	PetroRef	27	P_C	Petroleum, coal products
94	Other Petroleum Products	OthPetro	27	P_C	Petroleum, coal products
95	Rubber Sheets and Block Rubber	RubShtBk	30	RPP	Rubber and plastic products
96	Tyres and Tubes	TyreTube	30	RPP	Rubber and plastic products
97	Other Rubber Products	OthRub	30	RPP	Rubber and plastic products
98	Plastic Wares	PlasWare	30	RPP	Rubber and plastic products
99	Ceramic and Earthen Wares	Ceramic	31	NMM	Mineral products nec
100	Glass and Glass Products	Glass	31	NMM	Mineral products nec
101	Structural Clay Products	ClayProd	31	NMM	Mineral products nec
102	Cement	Cement	31	NMM	Mineral products nec
103	Concrete and Cement Products	Concrete	31	NMM	Mineral products nec
104	Other Non-metallic Products	OthNonMe	31	NMM	Mineral products nec
105	Iron and Steel	IronStee	32	I_S	Ferrous metals
106	Secondary Steel Products	SecSteel	32	I_S	Ferrous metals
107	Non-ferrous Metal	NonFeMet	33	NFM	Metals nec
108	Cutlery and Hand Tools	Cutlery	34	FMP	Metal products
109	Furniture and Fixtures Metal	FurnMet	34	FMP	Metal products
110	Structural Metal Products	StMetPr	34	FMP	Metal products
111	Other Fabricated Metal Products	OthFabMe	34	FMP	Metal products
112	Engines and Turbines	Engines	39	OME	Machinery and equipment nec
113	Agricultural Machinery	AgriMach	39	OME	Machinery and equipment nec

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No.	Name	Short Name	No.	Code	Description
114	Wood and Metal Working Machinery	WorkMach	39	OME	Machinery and equipment nec
115	Special Industrial Machinery	InduMach	39	OME	Machinery and equipment nec
116	Office and Household Machinery	OfHhMach	37	ELE	Computer, electronic and optical products
117	Electrical Industrial Machinery	ElecMach	38	EEQ	Electrical equipment
118	Radio and Television	RadioTV	37	ELE	Computer, electronic and optical products
119	Household Electrical Appliances	HhEleApp	38	EEQ	Electrical equipment
120	Insulated Wire and Cable	WireCabl	38	EEQ	Electrical equipment
121	Electric Accumulator & Battery	Battery	38	EEQ	Electrical equipment
122	Other Electrical Apparatuses & Supplies	OthEleAp	38	EEQ	Electrical equipment
123	Ship Building	Ship	36	OTN	Transport equipment nec
124	Railway Equipment	RailwEq	36	OTN	Transport equipment nec
125	Motor Vehicle	MotoVehi	35	MVH	Motor vehicles and parts
126	Motorcycle, Bicycle & Other Carriages	Motocycl	36	OTN	Transport equipment nec
127	Repairing of Motor Vehicle	RepaMoto	45	TRD	Trade
128	Aircraft	Aircraft	36	OTN	Transport equipment nec
129	Scientific Equipments	SciEquip	37	ELE	Computer, electronic and optical products
130	Photographic & Optical Goods	PhotoGds	37	ELE	Computer, electronic and optical products
131	Watches and Clocks	Watches	37	ELE	Computer, electronic and optical products
132	Jewelry & Related Articles	Jewelry	40	OMF	Manufactures nec
133	Recreational and Athletic Equipment	RecreEq	40	OMF	Manufactures nec
134	Other Manufacturing Goods	OthManu	40	OMF	Manufactures nec
135	Electricity	Eltcity	41	ELY	Electricity
136	Pipe Line	PipeLine	42	GDT	Gas manufacture, distribution
137	Water Supply System	WaterSup	43	WTR	Water
138	Residential Building Construction	ResBuild	44	CNS	Construction
139	Non-Residential Building Construction	NRBuild	44	CNS	Construction
140	Public Works for Agriculture & Forestry	AgPubWks	44	CNS	Construction
141	Non-Agricultural Public Works	NAPubWks	44	CNS	Construction
142	Construction of Electric Plant	ElePIcon	44	CNS	Construction
143	Construction of Communication Facilities	CommuCon	44	CNS	Construction
144	Other Constructions	OthCon	44	CNS	Construction
145	Wholesale Trade	Wholesale	45	TRD	Trade
146	Retail Trade	Retail	45	TRD	Trade
147	Restaurant and Drinking Place	Restaur	46	AFS	Accommodation, Food and service activities
148	Hotel and Lodging Place	Hotel	46	AFS	Accommodation, Food and service activities
149	Railways	Railways	47	OTP	Transport nec

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No.	Name	Short Name	No.	Code	Description
150	Route & Non Route of Road Passenger Trans.	RoadTran	47	OTP	Transport nec
151	Road Freight Transport	RoadFrei	47	OTP	Transport nec
152	Land Transport Supporting Services	LdTranSp	50	WHS	Warehousing and support activities
153	Ocean Transport	OceaTran	48	WTP	Water transport
154	Coastal & Inland Water Transport	WateTran	48	WTP	Water transport
155	Water Transport Services	WtTranSv	50	WHS	Warehousing and support activities
156	Air Transports	AirTran	49	ATP	Air transport
157	Other Services	OthTran	50	WHS	Warehousing and support activities
158	Silo and Warehouse	SiloWarh	50	WHS	Warehousing and support activities
159	Post and Telecommunication	PostTele	51	CMN	Communication
160	Banking Services	Banking	52	OFI	Financial services nec
161	Life Insurance Service	LifeInsu	53	INS	Insurance (formerly isr)
162	Other Insurance Service	OthInsu	53	INS	Insurance (formerly isr)
163	Real-estate	RealEsta	54	RSD	Real estate activities and Dwellings
164	Business Service	BusiServ	55	OBS	Business services nec
165	Public Administration	PubAdmin	57	OSG	Public Administration and defense
166	Sanitary and Similar Services	Sanitary	57	OSG	Public Administration and defense
167	Education	Educat	58	EDU	Education
168	Research	Research	58	EDU	Education
169	Hospital	Hospital	59	HHT	Human health and social work activities
170	Business and Labor Associations	BusLabAs	56	ROS	Recreational and other services
171	Other Community Services	OthComSv	56	ROS	Recreational and other services
172	Motion Picture Production	MotPict	56	ROS	Recreational and other services
173	Movie Theater	MovTheat	56	ROS	Recreational and other services
174	Radio, Television and Related Services	RadTVSv	56	ROS	Recreational and other services
175	Libraries and museums	LibrMuse	56	ROS	Recreational and other services
176	Amusement and Recreation	AmuRecre	56	ROS	Recreational and other services
177	Repair, Not Elsewhere Classified	RepaNEC	56	ROS	Recreational and other services
178	Personal Services	PersServ	56	ROS	Recreational and other services
180	Unclassified	Unclass	56	ROS	Recreational and other services