

11.G

Singapore

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11.G.1. Salient Features of This Work

This Singapore GTAP Input-Output (IO) table is established from Singapore Input-Output Table 1995. Singapore IO table 1995 adopts Singapore Standard Industrial Classification (SSIC) 1996. Singapore is a city-country with limited natural resources. Agriculture, as an industry, plays a minor role in the economy. Hence, compared to ISIC and CPC, agriculture is highly aggregated in the SSIC.

The SSIC 1996 adopts the basic framework and principles postulated in the International Standard Industrial Classification (ISIC), Third Revision. Industrial Classification in Singapore has been updated regularly to reflect significant changes in the structure of the economy, and the emergence of IT and other new activities (www.singstat.gov.sg). SSIC share the same classification in “Section” with ISIC, but minor differences do exist in “Division”, “Group” and “Class” of ISIC and SSIC. For example, Division 31 “Manufacture of electrical machinery and apparatus” in ISIC is denoted as Division 30 in SSIC. Moreover, SSIC can assign 5 digits code in the “Class” of SSIC which can be further classified into “Items”.

Using information provided by two alternative concordances (Huff et al., 1999), SSIC and Singapore IO table, we can map the sectors in Singapore IO table into GTAP sectors (see appendix 1 and SMAP worksheet in attached EXCEL file, GTAPSGIO.xls).

The 1995 Singapore IO (industry-by-industry) table, together with the import matrix for 1995 ordered by commodity and industry are recently made available by the Department of Statistics. The IO table registers information on inter-industry transaction, expenditure on final goods and services, and value-added pertaining to

155 industries. The assumption that each industry produces only one commodity is made.

Two software packages are used in this project: GAMS (Version 21.1) and EXCEL. Six GAMS codes are written to facilitate the processing of the new data available: "RAS Singapore IO.gms", "RAS import matrix.gms", "IO to GTAP database.gms", "Import matrix to GTAP database.gms", "AI16.gms" and "AI17.gms".

In order to reconcile and integrate the Singapore IO table and import matrix in accordance with the GSC sectors, we need to disaggregate sector 1 "livestock", sector 3 "other corps", sector 6 "quarrying & mining" and sector 7 "meat preparations"(SSIC) in the 1995 Singapore IO table and import matrix. The distributive shares pertaining to the disaggregation of the 4 sectors into compatible GSC sectors are as follows:

Sector 1 is disaggregated into "ctl"(0.001), "oap"(0.997), "rmk'(0.001) and "wol"(0.001); sector 3 is disaggregated into "v_f"(0.994), "pdr"(0.001), "wht"(0.001), "c_b"(0.001), "gro"(0.001), "pfb"(0.001) and "osd"(0.001); sector 6 is disaggregated into "oil"(0.7), "gas"(0.297), "for"(0.001, we denoted it as "forr" due to the fact that "for" is a reserved word), "col"(0.001) and "omn"(0.001); sector 7 is disaggregated into "omt"(0.5) and "cmt"(0.5).

Similarly, Sector 1,3,6 and 7 in Singapore import matrix 1995 are disaggregated as follows:

Sector 1 is disaggregated into "ctl"(0.749), "oap"(0.249), "rmk'(0.001) and "wol"(0.001); sector 3 is disaggregated into "v_f"(0.619), "pdr"(0.165), "wht"(0.035), "c_b"(0.16), "gro"(0.005), "pfb"(0.015) and "osd"(0.001); sector 6 is disaggregated into "oil"(0.001), "gas"(0.001), "for"(0.001, we denoted it as "forr" due to the fact that "for" is a reserved word), "col"(0.099) and "omn"(0.898); sector 7 is disaggregated into "omt"(0.5) and "cmt"(0.5).

In the original Singapore 1995 IO table, the gross operating surplus (profit) corresponding to sector 1 "livestock" is negative (-0.6 million S\$). This is adjusted to zero by redistributing the negative amount to other three value-added components "tax on products", "tax on production" and "compensation of employees".

Imputed charge in respect of banking services is recorded in a separate column in the original Singapore 1995 IO table. To retain the consistency and compatibility with GSC sectors, we treat it as a sector and aggregate it into GSC sector “ofi”.

In original Singapore 1995 import matrix, there is a row labelled as “other goods and service”. This is not a standard sector in SSIC, hence, we set this row equal to zero and proportionally redistribute the value of this row into other rows.

Figures in the original Singapore IO table are recorded in millions of Singapore dollars. We have converted figures to be valued in US dollars by using the 1995 average exchange rate of 1.4174 S\$ per US\$. This conversion procedure is facilitated by the programs “IO to GTAP database.gms”, and “Import matrix to GTAP database.gms”. Other spreadsheets which may be useful references to readers are:

“Original Version” (Calder et al., 1993 and Huff, 1999) of Singapore GTAP IO table is provided in attached file “GTAPSGIO.xls”.

Mapping file is provided in both the appendix 1 of this document and EXCEL files: “GTAPSGIO.xls” and “concordancetable.xls”.

11.G.2. Detailed Methodology

In Singapore 1995 Input-Output Table and 1995 import matrix, the significance of each cell entry is limited to a single decimal place.... Rounding errors may cause imbalance in some sectors in which the total sales are not equal to total costs. These imbalances are particularly serious for those sectors that have small output level. To ensure that we have the entries in each column/row do sum up to the column/row total, we apply the RAS balancing procedure to the original Singapore IO table and import matrix. Two GAMS programs, “RAS Singapore IO.gms” and “RAS import matrix.gms”, are used to facilitate the procedure.

AI01 Intermediate usage of domestic products, by commodity and industry

“IO to GTAP database.gms” is the basic conversion program. AI01 is one part of the result of “IO to GTAP database.gms”. The rules in the appendix and those mentioned in previous paragraphs are followed to integrate and convert Singapore IO into the format that is consistent with GTAP sectors.

AI02 Intermediate usage of imports, by commodity and industry

“Import matrix to GTAP database.gms” is the basic conversion program. AI02 is part of the results of “Import matrix to GTAP database.gms”.

AI03 Investment Usage of domestic products, by commodity

AI03 is part of the result of “IO to GTAP database.gms”. “fixcapital” column (fixed capital formation) is selected.

AI04 Investment usage of imports, by commodity

AI04 is part of the results of “Import matrix to GTAP database.gms”. “grofixcap” column (Gross fixed capital formation) is selected.

AI05 Household consumption of domestic products, by commodity

AI05 is part of the result of “IO to GTAP database.gms”. “Privcons” column (private consumption expenditure) is selected.

AI06 Household consumption of imports, by commodity

AI06 is part of the results of “Import matrix to GTAP database.gms”. “Privcons” column (private consumption expenditure) is selected.

AI07 Government consumption of domestic products, by commodity

AI07 is part of the result of “IO to GTAP database.gms”. “Govcons” column (Government consumption expenditure) is selected.

AI08 Government consumption of imports, by commodity

AI06 is part of the results of “Import matrix to GTAP database.gms”. “Govcons” column (Government consumption expenditure) is selected.

AI09 Change in stocks of domestic products, by commodity

AI09 is part of the result of “IO to GTAP database.gms”. “chgstock” column (Change in stocks) is selected.

AI10 Change in stocks of imports, by commodity

AI10 is part of the results of “Import matrix to GTAP database.gms”. “chgstock” column (Change in stocks) is selected.

AI11 Exports, by commodity

AI11 is part of the result of "IO to GTAP database.gms". "Exports" column (Exports of goods & services) is selected.

AI12 Non-commodity indirect taxes, net, by industry

AI12 is part of the result of "IO to GTAP database.gms". "prodtonTax" row (Taxes on production) is selected.

AI13 Employment of labor, by industry

AI13 is part of the result of "IO to GTAP database.gms". "empCompen" row (Compensation of employees) is selected.

AI14 Employment of capital, by industry

AI14 is part of the result of "IO to GTAP database.gms". "opsurplus" row (Gross operating surplus) is selected.

AI15 Employment of land, by industry

There is no information on this item.

AI16 Commodity tax on intermediate usage of domestic products, by commodity and industry

"AI16.gms" is the basic program used. The input data needed is from AI01 where Singapore GTAP data which had been established previously. We put together commodity by industry table with GTAP sectors classification and products tax in industry by industry table with GTAP sectors classification (from "IO to GTAP database.gms") and form a new table "ggdomIO" in ggdomIO.xls file. We distribute proportionately the products tax in intermediate usage based on AI01.

AI17 Commodity tax on intermediate usage of imports, by commodity and industry

"AI17.gms" is the basic program used. The input data needed is from AI102 where Singapore GTAP data which had been established previously. We put commodity by industry import matrix with GTAP sectors classification (in AI02) and import tax in industry by industry table with GTAP sectors classification (from "IO to GTAP

database.gms”) and form new table ggimIO in ggimIO.xls file). We distribute proportionately import tax in intermediate usage based on AI02.

AI18 Commodity tax on household consumption of domestic products, by commodity

We use Microsoft EXCEL to process the data. We distribute proportionately commodity tax on household consumption of domestic products.

AI19 Commodity tax on household consumption of imports, by commodity

We use Microsoft EXCEL to process the data. We distribute proportionately commodity tax on household consumption of import products.

AI20 Commodity tax on investment usage of domestic products, by commodity

We use Microsoft EXCEL to process the data. We proportionately distribute commodity tax on investment usage of domestic products.

AI21 Commodity tax on investment usage of imports, by commodity

We use Microsoft EXCEL to process data. We proportionately distribute commodity tax on investment usage of import products.

AI22 Commodity tax on government usage of domestic products, by commodity

Total commodity tax on government usage of domestic products is zero. Hence, all entries are zero.

AI23 Commodity tax on government usage of imports, by commodity

Total commodity tax on government usage of imports is zero. Hence, all entries are zero.

AI24 Commodity tax on exports, by commodity

Total commodity tax on exports is zero. Hence, all entries are zero.

AI25 Commodity tax on change in stocks of domestic products, by commodity

Total commodity tax on change in stocks of domestic products is zero. Hence, all entries are zero.

AI26 Commodity tax on change in stocks usage of imports, by commodity

Total commodity tax on change in stocks usage of imports is zero. Hence, all entries are zero.

AI27 Import duty, by commodity

We use Microsoft EXCEL to process data. We proportionately distribute “import duty of total output” according to “total supply” in adapted import matrix.

11.G.3. **Additional Data**

Some information that may be pertinent for updating the GTAP database to the base year of 2001 is included in Table 1.

Table 1 Expenditure on GDP in 2001 (at 1995 market price)

(Units: S\$ million)

	Original data	Adjusted with statistical discrepancy*
Total	157318.5	157318.5
Private consumption expenditure	66239.4	65171.3
Government Consumption expenditure	19180.5	18871.22
Gross Fixed capital formation	49737.3	48935.3
increase in stocks	-8916.5	-8772.72
Net export of goods and service	33656.1	33113.4
statistical discrepancy	-2578.3	

* Statistical discrepancy is pro-rated among the aggregate demand components

Source: Economic Survey of Singapore 2002.

Figures recorded in Table 1 are valued in Singapore dollars. To have the valuation in US dollars, the average exchange in 2001 is S\$1.7917 per US\$. (www.singstat.gov.sg).

Appendix

Appendix1: Mapping Sectors from Singapore IO into GTAP Database

Industry/Commodity Classification	Singapore Standard Industrial Classification, 1996	Singapore Trade Classification, (SITC R(3))	GTAP Sector Classification GSC
001 Livestock	0121x, 0122x, 01231, 01232, 01233, 01239, 01300 (Part)	001, 025	ctl, oap, rmk, wol
002 Nursery products	01151, 01152, 01153, 01159	292 (Part)	ocr
003 Other corps	0111x, 0112x, 0113x, 01140, 01154, 0119x, 01300(Part), 0141x, 0149x, 01500, 02000	041, 042, 043, 044, 045, 054(Part), 057(Part), 061(Part), 072(Part), 075(Part), 121, 222, 223(Part), 261, 263, 264, 265, 268(Part), 291(Part), 292(Part)	v_f, osd, c_b, pfb,gro,wht,pdr
004 Aquarium fish	05203	034 (Part)	fsh
005 Other fisheries	01234, 0510x, 05201, 05202, 05204, 05205, 05209, 0530x	012 (Part), 034 (Part), 036(Part), 291 (Part)	fsh
006 Quarrying & mining	10002, 1110x, 11900	273(Part), 274(Part), 281, 283, 284, 285(Part), 286, 287(Part), 289(Part), 321(Part), 322(Part), 325(Part)	oil, gas,for,col,omn
007 Meat preparations	1511x	011, 012 (Part), 016, 017(Part), 036(Part), 091(Part), 211(Part), 212, 291(Part), 311(Part), 411(Part), 431(Part)	omt, cmt
008 Seafood preparations	1512x	012(Part), 035, 036(Part), 037	ofd
009 Fruit and vegetable preparations	1513x, 15491, 15492	054(Part), 056(Part), 057(Part), 058(Part), 059, 062(Part), 098(Part), 292(Part)	ofd
010 Oils and fats	1514x	091(Part), 411(Part), 421, 422, 431(Part)	vol
011 Dairy products	1520x	022, 023, 024, 111(Part)	mil

012 Mill and starch products	15311, 15312, 15314, 15319, 15321, 15329, 15330	046, 047, 048(Part), 056(Part), 072(Part), 081(Part), 223(Part), 311(Part)	pcr
013 Spices	15313, 15493	075(Part)	ofd
014 Biscuits	15411	048 (Part)	ofd
015 Bread and Confectionery	15412, 15419	048 (Part)	ofd
016 Sugar & sugar products	15322, 1542x, 15433	061 (Part), 062 (Part)	sgr
017 Chocolate & chocolate products	15431, 15432, 15439	048 (Part), 072 (Part), 073, 098 (Part)	ofd
018 Noodles and related products	15440	048 (Part), 098(Part)	ofd
019 Coffee and tea	15451, 15452, 15453	071, 074	ofd
020 Other food preparations	15454, 15494, 15495, 15499	017(Part), 048(Part), 054(Part), 058(Part), 098(Part), 287(Part), 292(Part), 551(Part), 592(Part)	ofd
021 Softdrinks	15496, 1554x	098(Part), 111(Part), 112(Part)	ofd
022 Alcoholic drinks	15510, 15520, 15530	112(Part)	b_t
023 Tobacco products	1600x	122	b_t
024 Yarn and fabrics	1710x , 17301	266(Part), 267(Part), 268(Part), 321(Part), 651(Part), 652, 653, 654, 655, 656(Part), 657(Part), 658(Part)	tex
025 Garments	17303, 18101, 18102, 18103, 18104	269, 322(Part), 841(Part), 842(Part), 843(Part), 844(Part), 845(Part)	wap
026 Millinery & other wearing apparel	17302, 17309, 18106, 18109	845(Part), 846(Part), 848(Part)	wap
027 Tailoring & dressmaking	18105	322(Part)	wap
028 Textile articles	1721x, 17220, 17230, 17290	321(Part), 656(Part), 657(Part), 658(Part), 659,	tex

			775(Part), 821(Part), 899(Part)	
029 Footwear	1920x		851	lea
030 Leather and fur products	1820x, 19110, 1912x		211(Part), 611, 612, 613, 831, 841(Part), 842(Part), 843(Part), 844(Part), 845(Part), 846(Part), 848(Part)	lea
031 Wood and wooden products	2010x, 2021x, 20222, 20229, 2023x, 2029x, 34996(Part), 34997(Part)		244, 245, 246, 247, 248(Part), 292(Part), 331, 633, 634(Part), 635(Part)	lum
032 Wooden furniture and fixtures	20221, 34101, 34102, 34104(Part), 34105, 34109(Part)		248(Part), 635(Part), 821(Part)	omf
033 Paper and paper products	21010, 2102x, 2109x		251, 634(Part), 641, 642(Part), 684(Part)	ppp
034 Newspapers, books and magazines	22101, 22102, 22103, 22211, 22222, 22229		342(Part), 892(Part)	ppp
035 Other printing	22212, 22213, 22214, 22219, 22221,		322(Part), 342(Part), 642(Part), 892(Part), 894(Part)	ppp
036 Petroleum and petroleum products	10001, 23100, 23200, 23300		333, 334, 335(Part), 342(Part), 343, 345	p_c
037 Industrial chemicals and gases	2431x, 24395		274(Part), 285(Part), 325(Part), 335(Part), 411(Part), 511(Part), 512(Part), 513(Part), 514(Part), 515(Part), 516(Part), 522(Part), 523, 524, 597(Part), 598(Part)	crp
038 Petrochemicals and petrochemical products	24101, 24102, 24109		511(Part), 512(Part), 513(Part), 514(Part), 516(Part)	crp
039 Polymers and man-made fibres	24103, 24350		232(Part), 266(Part), 267(Part), 571, 572, 573, 574, 575, 579, 651(Part)	tex
040 Pharmaceutical products	2420x		061(Part), 514(Part), 515(Part), 516(Part), 541,	crp

			542, 598(Part)	
041	24342, 24343		352, 551(Part), 553(Part)	
	Toiletries and cosmetics			crp
042	24341, 24344		554, 591(Part), 598(Part)	
	Cleaning and polishing preparations			crp
043	2433x		533(Part), 598(Part)	crp
	Paints			
044	24394, 24397		081(Part), 514(Part)	
	Food chemicals and additives			crp
			551(Part)	
045	2432x, 24391, 24392, 24393,		272, 514(Part),	
	Other chemical products		522(Part),	crp
	24396, 24398, 24399, 34992		525, 531, 532, 533(Part),	
			553(Part), 562,	
			591(Part),	
			592(Part), 593,	
			597(Part), 598(Part),	
			598(Part), 882,	
			895(Part),	
			899(Part)	
046	2511x		231, 232(Part), 292(Part)	
	Processing of rubber and natural gums			crp
047	2512x, 2519x		621, 625, 629, 657(Part)	
	Rubber products			crp
048	25216		893(Part)	crp
	Plastic precision products			
049	25211, 25212, 25213, 25214,		357, 581, 582, 583,	
	Other plastic products		658(Part), 821(Part),	crp
	25215, 25217, 25218, 25219,		893(Part), 899(Part)	
	25220, 34104(Part), 34109(Part)			
	34996(Part), 34997(Part)			
050	2691x		663(Part), 666, 812(Part)	nmm
	Non structural ceramic wares			
051	26100		664(Part), 665	nmm
	Glass and glass products			
052	26992		651(Part), 664(Part),	nmm
	Fibreglass and fibreglass products			
053	26930		661(Part)	nmm
	Cement			
054	26941, 26949, 26950		273(Part), 661(Part),	nmm
	Concrete products		663(Part), 821(Part)	
055	2692x		662	nmm
	Bricks and earth-baked products			
056	26991, 26993, 26994, 26999		277, 278(Part),	
	Non-metallic mineral products		335(Part),	nmm
			369, 661(Part),	
			663(Part),	
			773(Part)	
057	2710x, 27301, 28919(Part)		278(Part), 381(Part),	
	Basic iron and steel		671,	i_s

		28998(Part)	672(Part), 673, 674, 675, 676(Part), 699(Part)	
058	Non-ferrous basic metals	2720x, 27302, 28919(Part) 28998(Part)	287(Part), 288, 289(Part), 672(Part), 681, 682(Part), 683(Part), 684(Part), 685(Part), 686(Part), 687(Part), 689, 971(Part)	nfm
059	Metal furnitures	34103	821(Part), 872(Part)	fmp
060	Structural metal products	2811x, 28131, 28998(Part)	676(Part), 677, 679(Part), 682(Part), 683(Part), 684(Part), 685(Part), 686(Part), 687(Part), 691, 699(Part), 811	fmp
061	Non-insulated cable products	2894x	678, 682(Part), 693, 776(Part)	fmp
062	Metal containers	28120, 2895x	692	fmp
063	Treatment and coating of metals	2892x	381(Part)	fmp
064	General hardware	28939, 28993, 28994, 28995, 29122, 29129(Part)	679(Part), 682(Part), 684(Part), 694, 699(Part), 747, 894(Part)	fmp
065	Metal stampings	28911, 28912, 28913, 28914, 28915	381(Part), 686(Part), 699(Part), 961, 971(Part)	fmp
066	Metal precision components	28997	684(Part), 695(Part), 699(Part), 728(Part), 748(Part), 759(Part), 764(Part), 776(Part), 785(Part)	fmp
067	Other metal products	28139, 28931, 28932, 28991, 28992, 28996, 28999, 29131, 29260, 34912, 34996(Part), 34997(Part)	695(Part), 696, 697(Part), 699(Part), 741(Part), 746, 748(Part), 749(Part), 759(Part), 775(Part), 812(Part), 891, 895(Part)	fmp
068	Computers and computer peripheral equipment	31411, 31415, 31416, 31419	751(Part), 752(Part), 759(Part), 764(Part)	ele
069	Disk drives	31412, 31413, 31414	752(Part)	ele
070	Microphones,	31303	764(Part)	ele

	Loudspeakers and amplifiers			
071	Radios and sound recorders	31301, 31304, 31306	760, 762, 763 (Part)	ele
072	Television, video sets and disc players	31302, 31305, 31309	761, 763(Part), 764(Part),	ele
073	Semi-conductors	3111x	384(Part), 776(Part)	ele
074	Electron tubes	31191, 31196, 31197	764(Part), 776(Part)	ele
075	Capacitors and resistors	31192, 31193	771(Part), 772(Part), 775(Part), 778(Part)	ele
076	Printed circuit boards	31194, 31195	384(Part), 772(Part)	ele
077	Communication equipment	31200, 31903	764(Part), 778(Part), 792(Part)	ele
078	Other electronic products	31199, 3149x, 31901, 31902, 31909	384(Part), 751(Part), 752(Part), 759(Part)	ele
079	Lifting and hoisting machinery	2914x	744(Part)	ome
080	Refrigerators and air-conditioners	29191	741(Part), 743(Part), 775(Part)	ome
081	Oil rigs and oilfield machinery	29231, 29232, 29239	695(Part), 723(Part), 793(Part)	ome
082	General engineering works	29292	382(Part)	ome
083	Other industrial machinery and equipment	29110, 29121, 29129(Part), 29132, 29199, 29210, 29221, 29222, 29223, 29224, 29229, 29233, 2924x, 29250, 29291, 29293, 29294, 29295, 29296, 29299	382(Part), 695(Part), 711, 712, 713(Part), 714(Part), 718, 721, 722, 723(Part), 724, 725, 726, 727, 728, 731, 733, 735, 737(Part), 741(Part), 742, 743(Part), 744(Part), 745(Part), 748(Part), 749(Part), 759(Part), 778(Part), 791(Part)	ome
084	Electric motors and generators	3010x	383(Part), 716(Part)	ome
085	Switchgear and switchboard apparatus	30202, 30209, 30305	383(Part), 772(Part)	ome
086	Other electrical industrial apparatus	29225, 30201, 30900	383(Part), 699(Part), 716(Part), 737(Part), 741(Part), 771(Part), 778(Part)	ome
087	Recorded Media	22109, 22300, 34991	390(Part), 776(Part), 898(Part)	omf
088	Household appliances	2930x	697(Part), 743(Part), 775(Part)	ome

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089	Storage and primary batteries	3040x,	778(Part),	ome
090	Electrical wires and cables	30301, 30302, 30303, 30304, 30309	383(Part), 773(Part),	ome
091		30500, 34997(Part)	771(Part), 778(Part), 813	
	Lamp and lighting fixtures			ome
092	Land transport equipment	3310x, 33300, 3390x	385(Part), 713(Part), 781, 782, 783, 784, 785, 786, 791(Part)	mvh
093	Building of ships and boats	33201, 33203(Part)	793(Part)	otn
094	Repairing of ships and boats	33202, 33203(Part)	385(Part)	otn
095	Marine engine and ship parts	33204	385(Part), 713(Part), 749(Part)	otn
096	Scrap	33205, 35000	282, 385(Part), 793(Part)	otn
097	Aircraft	33401, 33402	385(Part), 713(Part), 714(Part), 792(Part), 899(Part)	otn
098	Medical and scientific instruments	3211x, 3212x, 32130	745(Part), 774, 872(Part), 873, 874, 899(Part)	ome
099	Photographic and optical goods	3220x	764 (Part), 871, 881, 883, 884	ome
100	Watches and clocks	3230x	885	ome
101	Toys and recreational goods	34930, 3494x	894(Part)	omf
102	Mattresses	34106	821(Part)	omf
103	Jewellery	34911, 34919, 34998	667, 897	omf
104	Umbrellas	34993	899(Part)	omf
105	Other Manufacturing	29400, 34920, 34994, 34995, 34999	390(Part), 697(Part), 751(Part), 895(Part), 896, 898(Part), 899(Part)	omf
106	Electricity	40100	351	ely
107	Gas	40200	342(Part), 343, 345	gdt
108	Water	41000, 42000		wtr
109	Building construction	4521x, 45230, 45242(Part), 45243, 45244(Part), 45249(Part) 45291, 45292, 45301, 45302(Part), 45303, 45304, 45305, 45306, 45307, 45308(Part), 45309,		cns

	45401(Part), 45402(Part), 45403(Part), 45404(Part), 45405(Part), 45409(Part)	
110 Other construction	4510x, 4522x, 45241, 45242(Part), 45244(Part), 45249(Part), 45299, 45302(Part) 45308(Part) , 45401(Part), 45402(Part), 45403(Part), 45404(Part), 45405(Part), 45409(Part)	cns
111 Wholesale and retail trades	50100, 5021x, 5022x, 5029x, 5031x, 5032x, 5033x, 5034x, 5035x, 5036x, 5037x, 5039x, 5041x, 5042x, 5043x, 5049x, 5051x, 5052x, 5059x, 5061x, 5062x, 5091x, 50920, 5093x, 5099x, 5110x, 5120x, 5131x, 5132x, 5141x, 5142,x, 5143x, 5144x, 5145x, 5146x, 5147x, 5148x, 5149x, 51500, 5160x, 71309(Part)	trd
112 Food & beverage services	5521x, 5522x, 55230, 55240, 55290	trd
113 Accomodation services	55110, 5512x	trd
114 Passenger transport by land	60102, 6021x	otp
115 Freight transport by land	6023x, 60300, 63209(Part)	otp
116 Water transport	61101, 61109, 61201, 61202, 61209(Part)	wtp
117 Supporting services to water transport	61102, 63310(Part), 63321, 63322, 63325, 63326, 63327 63328, 63329(Part)	otp
118 Port operation services	63323, 63324	otp
119 Air transport	62001, 62009	otp
120 Supporting services to air transport	62002, 63401, 63402, 63405, 63409	otp
121 Airport operation services	63403, 63404	otp
122 Warehousing services	6310x	
123 Other freight transport	63521, 64120	otp
124 Sight-seeing & tourism	60220, 61103, 61209(Part), 63511	otp
125 Other transport services	60101, 63512(Part), 63519(Part),	otp

		63522, 63529, 63901, 63909(Part)	
126	Crane and container services	63523, 63524	otp
127	Communications	64110, 64211, 64212, 64213(Part), 6422x, 64240(Part), 64290(Part)	cmn
128	Life insurance	66101, 66103(Part), 66201, 66203(Part)	isr
129	General and other insurance	66102, 66103(Part), 66104, 66202, 66203(Part), 66300, 66400, 66901, 66902, 66903, 66904, 66909(Part)	isr
130	Banks & finance companies	65114, 6512x, 6513x, 6514x, 65150, 65929, 65991	ofi
131	Other financial services	65111, 65112, 65113, 65190, 65910, 65921, 65922(Part), 65923, 65925, 65926, 65931, 65932, 65933, 65934(Part), 65939, 6594x, 6595x, 65992, 65993, 65999	ofi
132	Real estate	63201, 70101(Part), 70102, 70103, 70109(Part), 70201, 70203(Part), 70204(Part), 70205, 70209(Part)	obs
133	Legal services	74110	obs
134	Accounting and secretarial services	7412x, 74961, 74962, 74963, 74964, 74969	obs
135	Information technology	72100, 7220x, 7230x, 7240x, 72501, 72901, 72902, 72909(Part)	obs
136	Architectural and engineering services	74211, 74212, 74213, 74219, 74220	obs
137	Petroleum and mining consultants	74214	obs
138	Employment and labour contracting	7491x	obs
139	Advertising & exhibitions	74300, 74981, 74982	obs
140	Leasing of machinery and equipment	45500, 71111, 71119, 71120, 71130, 71210, 7122x, 7129x, 71301, 71302	obs
141	Management consultants	74130, 74141, 74142, 74143, 74144, 74149(Part)	
142	Other business and technical services	72502, 73100(Part), 73200(Part), 74950, 74965, 74971(Part),	obs

	74972, 74991, 74992, 74993, 74994, 74995, 74996, 74997, 74998, 74999(Part), 92146, 92147, 92148, 92149(Part)	
143 Producers of government services	63209(Part), 63310(Part), 63329(Part), 64213(Part), 64240(Part), 64290(Part), 72909(Part), 74149(Part), 75111, 75119(Part), 75191(Part), 75199, 75210(Part), 7522x, 75231, 75232, 75233, 75234, 75235, 75239(Part), 80102(Part), 80103(Part), 80201(Part), 80203(Part), 80301(Part), 80302, 80909(Part), 85322(Part), 85323(Part), 85324, 85325(Part), 85326, 85327(Part), 85329(Part), 91110(Part), 91914(Part), 91919(Part), 92312(Part), 92391(Part)	osg
144 Security services	74921, 74922, 74929	obs
145 Education	80101(Part), 80102(Part), 80103(Part), 80104(Part), 80201(Part), 80202, 80203(Part), 80204(Part), 80209(Part), 80301(Part), 80901, 80902(Part), 80903, 80904, 80905, 80909(Part)	osg
146 Medical and health services	85110(Part), 85121(Part), 85122(Part), 85123(Part), 85124, 85191(Part), 85192(Part), 85199(Part), 85200	osg
147 Environmental health services	70101(Part), 74931, 74939, 9000x	obs
148 Cinema services	92111, 92112, 92121	ros
149 Broadcasting and entertainment services	6423x, 71303, 71309(Part), 92114, 92129, 92131, 92132, 92141, 92142, 92143, 92144, 92145, 92149(Part), 92192, 92199(Part), 92399(Part)	ros
150 Other recreational services	71309(Part), 92191, 92199(Part), 92210, 92221, 92222,	ros

	92229(Part), 92230(Part), 92291, 92299(Part), 92311(Part), 92312(Part), 92313(Part), 92319, 92391(Part), 92392, 92393, 92394, 92399(Part)		
151 Personal and household services	71304, 74941, 74949,	291(Part)	ros
	85310(Part), 85321(Part), 85322(Part), 85323(Part), 85325(Part), 85328(Part), 85329(Part), 92113, 9331x, 9332x, 93330, 93391, 93392, 93393, 93394, 93395, 93396, 93399(Part), 95009(Part)		
152 Repairs of household goods	93202, 93203, 93204, 93205, 93206, 93207, 93209		trd
153 Repairs of road transport equipment	9310x, 93201	385(Part)	trd
154 Domestic services and non-profit bodies	63512(Part), 63519(Part), 63909(Part), 65922(Part), 65924, 65934(Part), 66909(Part), 70109(Part), 70202, 70203(Part), 70204(Part), 70209(Part), 71309(Part), 73100(Part), 73200(Part), 74971(Part), 74999(Part), 75119(Part), 75191(Part), 75210(Part), 75239(Part), 80101(Part), 80104(Part), 80105, 80201(Part), 80203(Part), 80204(Part), 80209(Part), 80301(Part), 80902(Part), 80909(Part), 85110(Part), 85121(Part), 85122(Part), 85123(Part), 85191(Part), 85192(Part), 85199(Part), 85310(Part), 85321(Part), 85322(Part), 85323(Part), 85325(Part), 85327(Part), 85328(Part), 85329(Part), 91110(Part), 91120, 91200, 91911, 91912, 91913, 91914(Part), 91919(Part), 91920, 9199x, 92149(Part), 92199(Part), 92229(Part), 92230(Part), 92299(Part), 92311(Part), 92312(Part),		osg

92313(Part), 92391(Part),
92399(Part), 93399(Part),
95001, 95002, 95009(Part)

¹⁵⁵ Ownership of dwellings

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