

United Arab Emirates

David Green

1. Abstract

This paper describes the production of a 31 sector input-output table for the United Arab Emirates for 2005.

The National Bureau of Statistics of the UAE are completing a program of harmonizing statistics from the seven emirates of the UAE, and it is only relatively recently that consolidated detailed economic data for the country has been available.

While the National Bureau of Statistics is now working on developing a fully-detailed I-O table for the country, which will have a base year of 2010, this will not be available for some time.

The current I-O table for the UAE has been developed as an interim measure using an I-O table for Kuwait as a template. This was then adjusted for the UAE economy by using UAE National Accounts and trade data as well as factors from an earlier, limited I-O table, and SAM for the UAE.

The completed I-O table is in thousand Emirati dirham (AED), producer prices.

2. Source Data

Three key sources of data were used to produce the input-output table:

- Kuwait I-O table for 2005 with 44 sectors, developed or use in GTAP in 2011.
- Ten-sector I-O table for the UAE, 2003.
- Nine-Sector Social Accounting Matrix of the UAE Economy, 2006, Working Paper by Nico Vellinga, Economic Policy Research Unit, Zayed University.
- National Accounts Data, 2005, from the UAE Ministry of Economy.
- UN trade data (Comtrade) for 2005 for imports, exports and re-exports.

2.1 Kuwait 2005 I-O Table

The Kuwait 2005 44-sector I-O table was developed by the author for use in GTAP. The table was constructed from a detailed 54-sector I-O table for 2000, in combination with 29-sector I-O table for 2005 and detailed national accounts.

The final table comprised a matrix of 44 input sectors (listed in Table 1) together with labour and capital inputs. Final demand was disaggregated by, investment, private household consumption, government consumption, changes in stocks and exports.

Table 1**Kuwait 44 I/O Sectors****No. Description**

- 1 Agriculture and livestock
- 2 Fishing
- 3 Extraction of crude petroleum and natural gas
- 4 Service activities incidental to oil and gas extraction excluding surveying
- 5 Other mining & quarrying
- 6 Manufacture of food products and beverages
- 7 Manufacture of textiles
- 8 Manufacture of wearing apparel, dressing and dyeing of fur
- 9 Tanning and dressing of leather, manufacture of luggage, hand bags, saddlery and harness
- 10 Manufacture of wood & of products of wood crok, except furniture manufacture of article of straw
- 11 Manufacture of paper and paper products
- 12 Publishing, printing and reproduction of recording media
- 13 Manufacture of coke, refined petroleum products and nuclear fuel
- 14 Manufacture of chemical and chemical products
- 15 Manufacture of rubber and plastic products
- 16 Manufacture of other non-metallic mineral products
- 17 Manufacture of basic metals
- 18 Manufacture of fabricated metal products, except machinery and equipment
- 19 Manufacture of machinery and equipment
- 20 Manufacture of electric machinery and apparatus
- 21 Manufacture of medical, precision and optical instruments, watches and clocks
- 22 Manufacture of motor vehicles, trailers and semitrailers
- 23 Manufacture of other transport equipment, n.e.c.
- 24 Manufacture of furniture
- 25 Manufacture, n.e.c.
- 26 Recycling
- 27 Electricity and gas
- 28 Water works and supply
- 29 Construction
- 30 Wholesale and retail trade
- 31 Restaurants and hotels
- 32 Transport and storage
- 33 Communication
- 34 Financial institutions
- 35 Insurance
- 36 Real estate
- 37 Business services
- 38 Sanitary services
- 39 Educational services
- 40 Medical and health services
- 41 Social and community services
- 42 Recreational & cultural services
- 43 Personal and household services
- 44 Public administration and defence

2.2 UAE 10-sector I-O Table

The sectoral breakdown for the 2003 10-sector I-O table, comprised the following:

- Primary
- Crude oil & natural gas
- Manufacturing
- Electricity, gas and water
- Construction
- Wholesale & retail trade, repair services, restaurants, hotels
- Transport, Communication and Storage
- Finance, insurance & real estate
- Government services
- Personal services

The table was based on a similar I-O table for 1995 developed for just the Abu Dhabi emirate, which was updated for the UAE for 2003 using the RAS method.

2.3 2006 SAM

The 2006 social accounting matrix for the UAE has a total of nine sectors:

- Agriculture
- Crude oil and natural gas, and quarrying
- Manufacturing and electricity
- Construction
- Real estate
- Trade and transport
- Restaurants and hotels
- Financial corporations sector
- Government, social and personal services

The SAM was developed from an original 8-sector SAM developed for 2004, with the additional sector resulting from a separation of the real estate and construction sectors.

2.4 National Accounts Data

Consolidated national accounts data for the UAE are available, with GDP, compensation to employees and gross fixed capital formation, disaggregated into the following eleven sectors:

- Agriculture
- Petroleum and mining
- Manufacturing
- Electricity, gas and water
- Construction

- Wholesale and retail trade, hotels and restaurants
- Transport, communication and storage
- Finance and insurance services
- Real estate services
- Other services
- Government services.

In addition, some limited data at the 2-digit ISIC level is also available. Specifically this includes investment and employment (number) disaggregated into the following manufacturing sectors:

- Manufacture of food, beverages and tobacco
- Textile and wearing apparel industries
- Manufacture of wood and wood products including furniture
- Manufacture of paper and paper products and printing
- Manufacture of chemicals and chemical, petroleum and plastic products
- Manufacture of non-metallic mineral products, excluding petroleum products
- Basic metal industries
- Manufacture of fabricated metal products, machinery and equipment
- Other manufacturing industries.

3. *Process*

The UAE I-O table was developed by combining the 44-sector I-O table for Kuwait with disaggregated national accounts and trade data for the UAE. For major sectors, (e.g. oil and gas production, refining, etc.) inputs were adjusted to reflect 2005 relative production and processing levels.

3.1 *Applying GDP Sector Ratios*

As a first step, each of the 44 I-O sectors was matched against one of the eleven GDP sectors (see Table 2 for concordances). The inputs into each of the 44 sectors are then multiplied by the ratio of UAE to Kuwaiti GDP for the associated sector, taking into account differences in the exchange rate.

These multipliers were subject to an initial reality check as they were applied. For example, the contribution of the construction sector to UAE GDP is 6.5 times greater than that for Kuwait. While this may seem excessive, there are several key factors that support this much higher level of construction activity:

- While the UAE's total population in 2005 was only slightly higher than Kuwait's (21%), household sizes are much smaller (5.5 people per household in the UAE compared with 9.2 in Kuwait). Population growth is also higher in the UAE.
- Higher income levels
- A rapidly developing tourism sector which is supported by massive construction projects.

The relative sectoral breakdown was also applied to final demand for investment, private consumption and public consumption, as well as inputs of labour and capital into each sector.

Table 2

Concordance: Kuwait 44 I/O Sectors to UAE GDP Sectors	
Kuwait 44 I/O Sectors	UAE GDP Sectors
No. Description	
1 Agriculture and livestock	Agriculture
2 Fishing	Agriculture
3 Extraction of crude petroleum and natural gas	Petroleum and mining
4 Service activities incidental to oil and gas extraction excluding surveying	Petroleum and mining
5 Other mining & quarrying	Petroleum and mining
6 Manufacture of food products and beverages	Manufacturing
7 Manufacture of textiles	Manufacturing
8 Manufacture of wearing apparel, dressing and dyeing of fur	Manufacturing
9 Tanning and dressing of leather, manufacture of luggage, hand bags, saddlery and harness	Manufacturing
10 Manufacture of wood & of products of wood crok, except furniture manufacture of article of straw	Manufacturing
11 Manufacture of paper and paper products	Manufacturing
12 Publishing, printing and reproduction of recording media	Manufacturing
13 Manufacture of coke, refined petroleum products and nuclear fuel	Manufacturing
14 Manufacture of chemical and chemical products	Manufacturing
15 Manufacture of rubber and plastic products	Manufacturing
16 Manufacture of other non-metallic mineral products	Manufacturing
17 Manufacture of basic metals	Manufacturing
18 Manufacture of fabricated metal products, except machinery & equipment	Manufacturing
22 Manufacture of motor vehicles, trailers and semitrailers	Manufacturing
23 Manufacture of other transport equipment, n.e.c.	Manufacturing
20 Manufacture of electric machinery and apparatus	Manufacturing
19 Manufacture of machinery and equipment	Manufacturing
21 Manufacture of medical, precision / optical instruments, watches & clocks	Manufacturing
24 Manufacture of furniture	
25 Manufacture, n.e.c.	
26 Recycling	
27 Electricity and gas	Electricity, gas and water
28 Water works and supply	Electricity, gas and water
29 Construction	Construction
30 Wholesale and retail trade	Wholesale and retail trade, hotels and restaurants
31 Restaurants and hotels	Transport, Comms., Storage
32 Transport and storage	
33 Communication	
34 Financial institutions	Finance and Insurance services
35 Insurance	Finance and Insurance services
37 Business services	Real estate services
36 Real estate	
42 Recreational & cultural services	Other services
43 Personal and household services	
44 Public administration and defence	Government services
38 Sanitary services	
39 Educational services	
40 Medical and health services	
41 Social and community services	

3.2 Trade Data

Detailed trade data for the UAE for 2005 was taken from Comtrade. The trade data was reported in HS-2002 nomenclature and mapping between HS-2002 and the 44 sectors in the I-O table followed the "HS2002-CPC 1.1-ISIC, Rev3-GTAP Concordance" by Thomas Hutcheson¹.

The trade data was then mapped into the 44 I-O sectors using the concordance detailed in Table 3. While most of the GTAP sectors mapped discreetly into the 44 I-O sectors, the following splits had to be made:

- GTAP sectors 15 "coal," 16 "oil" and 17 "gas" were matched against sectors 3 "extraction of crude petroleum and natural gas" and 4 "service activities incidental to oil and gas extraction excluding surveying." The split between the two sectors was according to relative shares of total intermediate inputs (from the Kuwait I-O table).
- GTAP sector 31 "paper products, publishing" was split between sector 11 "manufacture of paper and paper products" and sector 12 "Publishing, printing and reproduction of recording media" according to relative shares of total intermediate inputs.
- GTAP sector 42 "manufactures, nec" was split between sectors 21 "manufacture of medical, precision and optical instruments, watches and clocks," 24 "manufacture of furniture," 25 "manufacture, nec" and 26 "recycling" according to relative shares of total intermediate inputs.
- GTAP sector 47 "trade" was split between sectors 30 "wholesale and retail trade" and 31 "restaurants and hotels" according to relative shares of total intermediate inputs.
- GTAP sector 55 "recreational and other services" was split between sectors 42 "recreational and cultural services" and 43 "personal and household services" according to relative shares of total intermediate inputs.
- GTAP sector 56 "public administration, defence, education, health" was split between sectors 38 "sanitary services," 39 "educational services," 40 "medical and health services," 41 "social and community services" and 44 "public administration and defence" according to relative shares of total intermediate inputs.

¹ https://www.gtap.agecon.purdue.edu/resources/res_display.asp?RecordID=1916

Table 3

Concordance: 57 GTAP Sectors to 44 I/O Sectors			
57 GTAP Sectors		44 I/O Sectors	
No. Code	Description	No.	Description
1 PDR	Paddy rice	1	Agriculture and livestock
2 WHT	Wheat		
3 GRO	Cereal grains nec		
4 V F	Vegetables, fruit, nuts		
5 OSD	Oil seeds		
6 C B	Sugar cane, sugar beet		
7 PFB	Plant-based fibers		
8 OCR	Crops nec		
9 CTL	Bovine cattle, sheep and goats, horses		
10 OAP	Animal products nec		
11 RMK	Raw milk		
12 WOL	Wool, silk-worm cocoons		
13 FRS	Forestry		
14 FSH	Fishing	2	Fishing
15 COA	Coal	3	Extraction of crude petroleum and natural gas
16 OIL	Oil		
17 GAS	Gas	4	Service activities incidental to oil and gas extraction excluding surveying
18 OMN	Minerals nec	5	Other mining & quarrying
19 CMT	Bovine meat products	6	Manufacture of food products and beverages
20 OMT	Meat products nec		
21 VOL	Vegetable oils and fats		
22 MIL	Dairy products		
23 PCR	Processed rice		
24 SGR	Sugar		
25 OFD	Food products nec		
26 B T	Beverages and tobacco products		
27 TEX	Textiles	7	Manufacture of textiles
28 WAP	Wearing apparel	8	Manufacture of wearing apparel, dressing and dyeing of fur
29 LEA	Leather products	9	Tanning and dressing of leather, manufacture of luggage, hand bags, saddlery and harness
30 LUM	Wood products	10	Manufacture of wood & of products of wood crok, except furniture manufacture of article of straw
31 PPP	Paper products, publishing	11	Manufacture of paper and paper products
32 P_C	Petroleum, coal products	12	Publishing, printing and reproduction of recording media
		13	Manufacture of coke, refined petroleum products and nuclear fuel
33 CRP	Chemical, rubber, plastic products	14	Manufacture of chemical and chemical products
34 NMM	Mineral products nec	15	Manufacture of rubber and plastic products
		16	Manufacture of other non-metallic mineral products
35 I S	Ferrous metals	17	Manufacture of basic metals
36 NFM	Metals nec	18	Manufacture of fabricated metal products, except machinery and equipment
37 FMP	Metal products		

Continued....			
57 GTAP Sectors		44 I/O Sectors	
No.	Code	Description	No. Description
38	MVH	Motor vehicles and parts	22 Manufacture of motor vehicles, trailers and semitrailers
39	OTN	Transport equipment nec	23 Manufacture of other transport equipment, n.e.c.
40	ELE	Electronic equipment	20 Manufacture of electric machinery and apparatus
41	OME	Machinery and equipment nec	19 Manufacture of machinery and equipment
42	OMF	Manufactures nec	21 Manufacture of medical, precision and optical instruments, watches and clocks
			24 Manufacture of furniture
			25 Manufacture, n.e.c.
			26 Recycling
43	ELY	Electricity	27 Electricity and gas
44	GDT	Gas manufacture, distribution	
45	WTR	Water	28 Water works and supply
46	CNS	Construction	29 Construction
47	TRD	Trade	30 Wholesale and retail trade
			31 Restaurants and hotels
48	OTP	Transport nec	32 Transport and storage
49	WTP	Water transport	
50	ATP	Air transport	
51	CMN	Communication	33 Communication
52	OFI	Financial services nec	34 Financial institutions
53	ISR	Insurance	35 Insurance
54	OBS	Business services nec	37 Business services
57	DWE	Dwellings	36 Real estate
55	ROS	Recreational and other services	42 Recreational & cultural services
			43 Personal and household services
56	OSG	Public Administration, Defense, Education, Health	44 Public administration and defence
			38 Sanitary services
			39 Educational services
			40 Medical and health services
			41 Social and community services

3.3 Zero Settings

The other components of final demand, notably import taxes, import tariffs and consumption taxes were left blank, as no data was available for the UAE. In addition, in the absence of any data, the value of land inputs and producer taxes was set to zero.

3.4 Secondary Adjustments

The initial estimates for the I-O table were then compared with the ten-sector I-O and SAM, and adjustments were made where discrepancies were substantial and such changes could be justified in terms of the UAE's manufacturing base. Additional adjustments were also made to industrial sub-sectors where known UAE capacity was substantially different from Kuwait's. For example, non-petroleum mining and quarrying activities are substantially higher in the UAE than Kuwait, and the country has a world-scale aluminium smelter and extensive downstream aluminium capacity, while there is no smelting capacity in Kuwait and only limited extrusion.

3.5 Balancing the Table

Each of the input sectors was then balanced in turn (by row), from sector 1 through 44. Though as the sectors are connected, some sectors had to be adjusted several times.

The adjustments focussed on ensuring that the following balancing criteria were met:

- Imports do not exceed domestic demand

- Exports do not exceed domestic production
- Sum of rows = sum of columns

To meet the criteria and balance the table, adjustments were made to:

- The multiplier for inputs into the sector
- The multiplier for the components of final demand
- The level of labour and capital inputs.

The adjustments made took into account a number of factors including differences in the resource base and industrialisation in the UAE compared with Kuwait. In addition, where relevant, levels of final consumption (per capita) were checked to see if they remained in line with relative per capita GDP (for example, the consumption of food and beverages).

The final detailed balancing of the table rows and columns was achieved through micro adjustments to the multiples used for the components of final demand.

3.6 Disaggregating Imported Inputs

The input values used in the 29 sector 2005 I-O table represent total intermediate use. The matrix was split into domestic and imported inputs, in line with GTAP approach when a vector of import data is available. In this way total imports were pro-rated across the sectors in line with total inputs per sector.

An additional check was then made to ensure that the total of disaggregated imports by sector equalled initial total of imports by sector.

3.7 Mapping to GTAP

As a final step, the 44 I-O sectors were then mapped to a final set of 31 GTAP sectors, as detailed in Table 4.

With reference to the GTAP sectors, it should be noted that the following sectors are either non-existent in the United Arab Emirates or where they do exist they are insignificant economically:

5	OSD	Oil seeds
6	CB	Sugar cane
7	PFB	Plant-based fibres
12	WOL	Wool, silkworm cocoons
13	FRS	Forestry
15	COA	Coal

Table 4

Concordance: Kuwait 44 I/O Sectors to UAE 31 I/O Sectors		
Kuwait 44 I/O Sectors		UAE 31 I/O Sectors
No.	Description	No. Code Description
1	Agriculture & livestock	1 A_L Agriculture & livestock
2	Fishing	2 FSH Fishing
3	Extraction of crude petroleum & natural gas	3 O_G Extraction of crude petroleum & natural gas
4	Service activities incidental to oil & gas extraction excluding surveying	
5	Other mining & quarrying	4 OMN Other mining & quarrying
6	Manufacture of food products & beverages	5 F_B Manufacture of food products & beverages
7	Manufacture of textiles	6 TEX Manufacture of textiles
8	Manufacture of wearing apparel, dressing & dyeing of fur	7 WAP Manufacture of wearing apparel, dressing & dyeing of fur
9	Tanning & dressing of leather, manufacture of luggage, h& bags, saddlery & harness	8 LEA Tanning & dressing of leather, manufacture of luggage, h& bags, saddlery & harness
10	Manufacture of wood, wood & cork products, except furniture manufacture of article of straw	9 LUM Manufacture of wood, wood & cork products, except furniture manufacture of article of straw
11	Manufacture of paper & paper products	10 PPP Manufacture of paper & paper products, publishing
12	Publishing, printing & reproduction of recording media	
13	Manufacture of coke, refined petroleum products & nuclear fuel	11 P_C Manufacture of coke, refined petroleum products & nuclear fuel
14	Manufacture of chemical & chemical products	12 CRP Manufacture of chemicals, rubber & plastic products
15	Manufacture of rubber & plastic products	
16	Manufacture of other non-metallic mineral products	13 NMM Manufacture of other non-metallic mineral products
17	Manufacture of basic metals	14 I_S Manufacture of basic metals
18	Manufacture of fabricated metal products, except machinery & equipment	15 NFM Manufacture of fabricated metal products, except machinery & equip.
22	Manufacture of motor vehicles, trailers & semitrailers	19 MVH Manufacture of motor vehicles, trailers & semitrailers
23	Manufacture of other transport equipment, n.e.c.	20 OTN Manufacture of other transport equipment, n.e.c.
20	Manufacture of electric machinery & apparatus	17 ELE Manufacture of electric machinery & apparatus
19	Manufacture of machinery & equipment	16 OME Manufacture of machinery & equipment
21	Manufacture of medical, precision & optical instruments, watches & clocks	18 OMF Manufactures nec
24	Manufacture of furniture	
25	Manufacture, n.e.c.	
26	Recycling	
27	Electricity & gas	21 E_G Electricity & gas
28	Water works & supply	22 WTR Water works & supply
29	Construction	23 CNS Construction
30	Wholesale & retail trade	24 TRD Wholesale & retail trade, restaurants & hotels
31	Restaurants & hotels	
32	Transport & storage	25 T_S Transport & storage
33	Communication	26 CMN Communication
34	Financial institutions	27 OFI Financial institutions
35	Insurance	28 ISR Insurance
37	Business services	29 OBS Real estate & other business services
36	Real estate	
42	Recreational & cultural services	31 ROS Recreational & cultural services
43	Personal & household services	
44	Public administration & defence	30 OSG Public administration, defence, education, health
38	Sanitary services	
39	Educational services	
40	Medical & health services	
41	Social & community services	

Table 5

Concordance: Kuwait 44 I/O Sectors to Final 3 Sectors				
Kuwait 44 I/O Sectors		10 Sector UAE 2003	GDP Sectors	UAE 31 I/O Sectors
No.	Description			No. Code Description
1	Agriculture & livestock	Primary	Agriculture	1 A_L Agriculture & livestock
2	Fishing	Primary	Agriculture	2 FSH Fishing
3	Extraction of crude petroleum & natural gas	Crude oil & natural gas	Petroleum & mining	3 O_G Extraction of crude petroleum & natural gas
4	Service activities incidental to oil & gas extraction excluding surveying			
5	Other mining & quarrying	Primary	Petroleum & mining	4 OMN Other mining & quarrying
6	Manufacture of food products & beverages	Manufacturing	Manufacturing	5 F_B Manufacture of food products & beverages
7	Manufacture of textiles	Manufacturing	Manufacturing	6 TEX Manufacture of textiles
8	Manufacture of wearing apparel, dressing & dyeing of fur	Manufacturing	Manufacturing	7 WAP Manufacture of wearing apparel, dressing & dyeing of fur
9	Tanning & dressing of leather, manufacture of luggage, h& bags, saddlery & harness	Manufacturing	Manufacturing	8 LEA Tanning & dressing of leather, manufacture of luggage, h& bags, saddlery & harness
10	Manufacture of wood & of products of wood crok, except furniture manufacture of article of straw	Manufacturing	Manufacturing	9 LUM Manufacture of wood & products of wood & cork, except furniture manufacture of article of straw
11	Manufacture of paper & paper products	Manufacturing	Manufacturing	10 PPP Manufacture of paper & paper products, publishing
12	Publishing, printing & reproduction of recording media			
13	Manufacture of coke, refined petroleum products & nuclear fuel	Manufacturing	Manufacturing	11 P_C Manufacture of coke, refined petroleum products & nuclear fuel
14	Manufacture of chemical & chemical products	Manufacturing	Manufacturing	12 CRP Manufacture of chemicals, rubber & plastic products
15	Manufacture of rubber & plastic products			
16	Manufacture of other non-metallic mineral products	Manufacturing	Manufacturing	13 NMM Manufacture of other non-metallic mineral products
17	Manufacture of basic metals	Manufacturing	Manufacturing	14 I_S Manufacture of basic metals

Table 1

Continued:

Kuwait 44 I/O Sectors		10 Sector UAE 2003	GDP Sectors	UAE 31 I/O Sectors	
No.	Description			No.	Code Description
18	Manufacture of fabricated metal products, except machinery & equipment	Manufacturing	Manufacturing	15	NFM Manufacture of fabricated metal products, except machinery & equip.
22	Manufacture of motor vehicles, trailers & semitrailers	Manufacturing	Manufacturing	19	MVH Manufacture of motor vehicles, trailers & semitrailers
23	Manufacture of other transport equipment, n.e.c.	Manufacturing	Manufacturing	20	OTN Manufacture of other transport equipment, n.e.c.
20	Manufacture of electric machinery & apparatus	Manufacturing	Manufacturing	17	ELE Manufacture of electric machinery & apparatus
19	Manufacture of machinery & equipment	Manufacturing	Manufacturing	16	OME Manufacture of machinery & equipment
21	Manufacture of medical, precision & optical instruments, watches & clocks	Manufacturing	Manufacturing	18	OMF Manufactures nec
24	Manufacture of furniture				
25	Manufacture, n.e.c.				
26	Recycling				
27	Electricity & gas	Electricity, gas & water	Electricity, gas & water	21	E_G Electricity & gas
28	Water works & supply	Electricity, gas & water	Electricity, gas & water	22	WTR Water works & supply
29	Construction	Construction	Construction	23	CNS Construction
30	Wholesale & retail trade	Wholesale & retail trade, repair services, restaurants, hotels	Wholesale & retail trade, hotels & restaurants	24	TRD Wholesale & retail trade, restaurants & hotels
31	Restaurants & hotels				
32	Transport & storage	Transport, Communication & Storage	Transport, Communication & Storage	25	T_S Transport & storage
33	Communication			26	CMN Communication
34	Financial institutions	Finance, insurance & real estate	Finance & Insurance services	27	OFI Financial institutions
35	Insurance	Finance, insurance & real estate	Finance & Insurance services	28	ISR Insurance
37	Business services	Finance, insurance & real estate	Real estate services	29	OBS Real estate & other business services
36	Real estate				
42	Recreational & cultural services	Personal services	Other services	31	ROS Recreational & cultural services
43	Personal & household services				
44	Public administration & defence	Government services	Government services	30	OSG Public administration, defence, education, health
38	Sanitary services				
39	Educational services				
40	Medical & health services				
41	Social & community services				