

Switzerland

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This paper describes the construction of the Swiss input-output table for the year 2008 for the GTAP 8 Data Base.

1. Background

Switzerland does not have a long history in estimating input-output tables. In the past input-output tables have been estimated approximately every 5 – 10 years [1]. The estimation of these tables was based on various domestic statistics and on information from foreign input-output tables. Some of the input-output tables were updated from prior tables by using RAS techniques, and were compiled either by universities or private companies. The most recent input-output table (1995) was an updated version of the table of 1990.

The lack of official input-output tables based on primary data is twofold:

- Missing data: Important data sources usually available for compiling input-output tables, such as commodity statistics or statistics describing the cost structure of enterprises or the use of intermediate goods, is missing in Switzerland.
- Missing political pressure: The European Union has made the regular compilation of input-output tables mandatory for its member countries. Although Switzerland is not a member of the EU, it has close relations with the European Union on the political, economic and cultural levels. The Agreement with the EU on cooperation in the field of statistics provides the basis for harmonizing the compilation of data and making Switzerland's statistics comparable with those of its partners from the European Economic Area. However, Switzerland is exempted from providing input-output tables to the EU [3], [2].

The last contribution of a Swiss IOT to the GTAP Data Base goes back to the 1997. In 2004 a small consortium of people from the University of Zürich and the consultancy firm Ecoplan [7] decided not to update the existing 1995 table, but to estimate a new one for the year 2001. An update was seriously hampered by a change of the statistical industry classification and the change from a sales tax to a value added tax system in 1995. Furthermore, the data underlying the 1995 table reflected the state of the mid 1980s. The project was partially funded by the Swiss Federal Statistics Office (SFSO).

In 2006 the SFSO commissioned the estimation of a new input-output table for the year 2005 to the same consortium.[5] Instead of applying the cross-entropy method for balancing (which was used for the 2001 tables), they applied a modified RAS method.¹ The tables for the year 2005 were taken as the basis for the input-output table for the GTAP 7 Data Base. In 2009 the SFSO commissioned the estimation of the input-output table for the year 2008 [6]. These tables served as the basis for the GTAP 8 Data Base.

¹ For consistency reasons the tables for 2001 were recalculated using the same procedure.

2. Source Data and Adjustments

The main source for the Swiss contribution to the GTAP Data Base is the IOT for the year 2008 mentioned above. Because data definitions and classifications of the Swiss IOT do not match precisely with the requirements of GTAP, a concordance between the two classifications was constructed. This concordance allows for a total of 30 sectors.

The Swiss IOT does not make a distinction between use in imported and domestic goods. We followed one of the procedures described in [4]. The IOT was made consistent using a least square model.

3. Mapping the I-O Tables to a Common Valuation

The concordance between the Swiss IOT and GTAP is given in Table 1.

Table 1: Mapping between GSC, Swiss IOT and the aggregation

CHG	Nr	GTAP	Description
CH01	1	pdr	Paddy Rice: rice, husked and unhusked
	2	wht	Wheat: wheat and meslin
	3	gro	Other Grains: maize (corn), barley, rye, oats, other cereals
	4	v_f	Veg & Fruit: vegetables, fruitvegetables, fruit and nuts, potatoes, cassava, truffles,
	5	osd	Oil Seeds: oil seeds and oleaginous fruit; soy beans, copra
	6	c_b	Cane & Beet: sugar cane and sugar beet
	7	pfb	Plant Fibres: cotton, flax, hemp, sisal and other raw vegetable materials used in textiles
	8	ocr	Other Crops: live plants; cut flowers and flower buds; flower seeds and fruit seeds; vegetable seeds, beverage and spice crops, unmanufactured tobacco, cereal straw and husks, unprepared, whether or not chopped, ground, pressed or in the form of pellets;
	9	ctl	Cattle: cattle, sheep, goats, horses, asses, mules, and hinnies; and semen thereof
	10	oap	Other Animal Products: swine, poultry and other live animals; eggs, in shell (fresh or cooked), natural honey, snails (fresh or preserved) except sea snails; frogs' legs, edible products of animal origin n.e.c., hides, skins and furskins, raw , insect wax
	11	rmk	Raw milk
	12	wol	Wool: wool, silk, and other raw animal materials used in textile
CH02	13	frs	Forestry: forestry, logging and related service activities
CH03	14	fsh	Fishing: hunting, trapping and game propagation including related service activities, fishing, fish farms; service activities incidental to fishing
CH04	15	col	Coal: mining and agglomeration of hard coal, lignite and peat
	16	oil	Oil: extraction of crude petroleum and natural gas (part), service activities incidental to oil and gas extraction excluding surveying (part)
	17	gas	Gas: extraction of crude petroleum and natural gas (part), service activities incidental to oil and gas extraction excluding surveying (part)
	18	omn	Other Mining: mining of metal ores, uranium, gems. other mining and quarrying
CH05	19	cmt	Cattle Meat: fresh or chilled meat and edible offal of cattle, sheep, goats, horses, asses, mules, and hinnies. raw fats or grease from any animal or bird.
	20	omt	Other Meat: pig meat and offal. preserves and preparations of meat, meat offal or blood, flours, meals and pellets of meat or inedible meat offal; greaves
	21	vol	Vegetable Oils: crude and refined oils of soya-bean, maize (corn),olive, sesame, ground-nut, olive, sunflower-seed, safflower, cotton-seed, rape, colza and canola, mustard, coconut palm, palm kernel, castor, tung jojoba, babassu and linseed, perhaps partl
CH05	22	mil	Milk: dairy products
	23	pcr	Processed Rice: rice, semi- or wholly milled
	24	sgf	Sugar
	25	ofd	Other Food: prepared and preserved fish or vegetables, fruit juices and vegetable juices, prepared and preserved fruit and nuts, all cereal flours, groats, meal and pellets of wheat, cereal groats, meal and pellets n.e.c., other cereal grain products (inc
	26	b_t	Beverages and Tobacco products
CH06	27	tex	Textiles: textiles and man-made fibres
CH07	28	wap	Wearing Apparel: Clothing, dressing and dyeing of fur

CH08	29	lea	Leather: tanning and dressing of leather; luggage, handbags, saddlery, harness and footwear
CH09	30	ppp	Paper & Paper Products: includes publishing, printing and reproduction of recorded media
CH10	31	p_c	Petroleum & Coke: coke oven products, refined petroleum products, processing of nuclear fuel
CH11	32	crp	Chemical Rubber Products: basic chemicals, other chemical products, rubber and plastics products
CH12	33	nmm	Non-Metallic Minerals: cement, plaster, lime, gravel, concrete
CH13	34	i_s	Iron & Steel: basic production and casting
	35	nfm	Non-Ferrous Metals: production and casting of copper, aluminium, zinc, lead, gold, and silver
	36	fmp	Fabricated Metal Products: Sheet metal products, but not machinery and equipment
CH14	37	ome	Other Machinery & Equipment: electrical machinery and apparatus n.e.c., medical, precision and optical instruments, watches and clocks
CH15	38	ele	Electronic Equipment: office, accounting and computing machinery, radio, television and communication equipment and apparatus
	39	omf	Other Manufacturing: includes recycling
CH16	40	lum	Lumber: wood and products of wood and cork, except furniture; articles of straw and plaiting materials
CH17	41	mvh	Motor Motor vehicles and parts: cars, lorries, trailers and semi-trailers
CH18	42	otn	Other Transport Equipment: Manufacture of other transport equipment
CH19	43	ely	Electricity: production, collection and distribution
	44	gdt	Gas Distribution: distribution of gaseous fuels through mains; steam and hot water supply
CH20	45	wtr	Water: collection, purification and distribution
CH21	46	cns	Construction: building houses factories offices and roads
CH22	47	trd	Trade: all retail sales; wholesale trade and commission trade; hotels and restaurants; repairs of motor vehicles and personal and household goods; retail sale of automotive fuel
CH23	48	otp	Other Transport: road, rail ; pipelines, auxiliary transport activities; travel agencies
	49	wtp	Water transport
CH23	50	atp	Air transport
CH24	51	cmn	Communications: post and telecommunications
CH25	52	ofi	Other Financial Intermediation: includes auxiliary activities but not insurance and pension funding
CH26	53	isr	Insurance: includes pension funding, except compulsory social security
CH27	54	dwe	Dwellings: ownership of dwellings (imputed rents of houses occupied by owners)
CH28	55	obs	Other Business Services: real estate, renting and business activities
CH29	56	osg	Other Services (Government): public administration and defense; compulsory social security, education, health and social work, sewage and refuse disposal, sanitation and similar activities, activities of membership organizations n.e.c., extra-territorial
CH30	57	ros	Recreation & Other Services: recreational, cultural and sporting activities, other service activities; private households with employed persons (servants)

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