

Switzerland

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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. 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, 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 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.

In 2004 a small consortium of people from the University of Zürich and the consultancy firm Ecoplan 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. 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.

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

2. Source Data

In line with GTAP requirements, as outlined in, the data for Switzerland were provided in four matrices:

- the supply and use of the products and three primary factors of production (land, labor and capital) *without* product taxes (GTAP matrix UF);
- the supply and use of the GTAP products and three primary factors *with* product taxes (GTAP matrix UP);
- output of the GTAP products (GTAP vector OP); and
- imports of the GTAP products (GTAP vector MF).

3. Disaggregation of the imports

* Non-commodity indirect taxes, net, by industry'

Employment of capital, by industry'

* Employment of land, by industry'

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

Because data definitions and classifications of the input-output-table do not match precisely with the requirements of GTAP, a mapping between the two classifications was constructed. An estimation of the input-output table according to the GTAP classification (GSC) was not possible because of the lack of funding.

References

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- Karen Huff, Terry L. Wamsley, and Robert A. McDougall. Contributing input-output tables to the gtap data base. Technical report, 2002.
- Carsten Nathani, Robert Wickart, Marcel Oleschak, and Renger van Nieuwkoop. Estimation of a swiss input-output table for 2001. Technical report, 2006.

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

GSC	BeschreibungGTAP	Swiss IOT	Description (NACE Rev 1)	Nace Rev 1	Mapping
1	Paddy rice	S01	Agriculture, hunting and related service activities	01-05	21
2	Wheat	S01	Agriculture, hunting and related service activities	01-05	21
3	Cereal grains nec	S01	Agriculture, hunting and related service activities	01-05	21
4	Vegetables, fruit, nuts	S01	Agriculture, hunting and related service activities	01-05	21
5	Oil seeds	S01	Agriculture, hunting and related service activities	01-05	21
6	Sugar cane, sugar beet	S01	Agriculture, hunting and related service activities	01-05	21
7	Plant-based fibers	S01	Agriculture, hunting and related service activities	01-05	21
8	Crops nec	S01	Agriculture, hunting and related service activities	01-05	21
10	Animal products nec	S01	Agriculture, hunting and related service activities	01-05	21
11	Raw milk	S01	Agriculture, hunting and related service activities	01-05	21
12	Wool, silk-worm cocoons	S01	Agriculture, hunting and related service activities	01-05	21
13	Forestry	S01	Agriculture, hunting and related service activities	01	21
14	Fishing	S01	Agriculture, hunting and related service activities	01	21
15	Coal	S14	Mining and quarrying (includes also NOGA 10-13)	14	18
16	Oil	S14	Mining and quarrying (includes also NOGA 10-13)	14	18
17	Gas	S14	Mining and quarrying (includes also NOGA 10-13)	14	18
18	Minerals nec	S26	Manufacture of other non-metallic mineral products	26	18
19	Bovine meat products	S15	Manufacture of food products and beverages	15	19
20	Meat products nec	S15	Manufacture of food products and beverages	15	19
21	Vegetable oils and fats	S15	Manufacture of food products and beverages	15	19
22	Dairy products	S15	Manufacture of food products and beverages	15	19
23	Processed rice	S15	Manufacture of food products and beverages	15	19
24	Sugar	S15	Manufacture of food products and beverages	15	19
25	Food products nec	S01	Agriculture, hunting and related service activities	01	21
26	Beverages and tobacco products	S16	Manufacture of tobacco products	16	19
27	Textiles	S17	Manufacture of textiles	17	21
28	Wearing apparel	S18	Manufacture of wearing apparel; dressing and dyeing of fur	18	1
29	Leather products	S19	Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear	19	2
30	Wood products	S20	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	20	9
30	Wood products	S36	Manufacture of furniture; manufacturing n.e.c.	36	9
31	Paper products, publishing	S29	Manufacture of machinery and equipment n.e.c.	29	17
31	Paper products, publishing	S34	Manufacture of motor vehicles, trailers and semi-trailers	34	17
31	Paper products, publishing	S35	Manufacture of other transport equipment	35	17
32	Petroleum, coal products	S23	Manufacture of coke, refined petroleum products and nuclear fuel	23	22
32	Petroleum, coal products	S23	Manufacture of coke, refined petroleum products and nuclear fuel	23	22
33	Chemical, rubber, plastic products	S23	Manufacture of coke, refined petroleum products and nuclear fuel	23	22
33	Chemical, rubber, plastic products	S24	Manufacture of chemicals and chemical products	24	22
33	Chemical, rubber, plastic products	S25	Manufacture of rubber and plastic products	25	22
34	Mineral products nec	S17	Manufacture of textiles	17	21
35	Ferrous metals	S27	Manufacture of basic metals	27	18

GSC	BeschreibungGTAP	Swiss IOT	Description (NACE Rev 1)	Nace Rev 1	Mapping
36	Metals nec	S28	Manufacture of fabricated metal products, except machinery and equipment	28	18
37	Metal products	S14	Mining and quarrying (includes also NOGA 10-13)	14	18
38	Motor vehicles and parts	S22	Publishing, printing and reproduction of recorded media	22	17
39	Transport equipment nec	S29	Manufacture of machinery and equipment n.e.c.	29	17
39	Transport equipment nec	S34	Manufacture of motor vehicles, trailers and semi-trailers	34	17
39	Transport equipment nec	S35	Manufacture of other transport equipment	35	17
40	Electronic equipment	S30	Manufacture of office machinery and computers	30	17
40	Electronic equipment	S31	Manufacture of electrical machinery and apparatus n.e.c.	31	17
40	Electronic equipment	S32	Manufacture of radio, television and communication equipment and apparatus	32	17
41	Machinery and equipment nec	S21	Manufacture of pulp, paper and paper products	21	17
42	Manufactures nec	S33	Manufacture of medical, precision and optical instruments, watches and clocks	33	17
43	Electricity	S40	Electricity, gas, steam and hot water supply	40	3
44	Gas manufacture, distribution	S40	Electricity, gas, steam and hot water supply	40	10
45	Water	S41	Collection, purification and distribution of water	41	4
46	Construction	S45	Construction	45	11
47	Trade	S50	Sale, maintenance and repair of motor vehicles and motorcycles; retail sale of automotive fuel	50	12
47	Trade	S52	Retail trade, except of motor vehicles and motorcycles; repair of personal and household goods	52	12
47	Trade	S55	Hotels and restaurants	55	12
48	Transport nec	S60	Land transport; transport via pipelines	60	13
48	Transport nec	S63	Supporting and auxiliary transport activities; activities of travel agencies	63	13
49	Water transport	S61	Water transport	61	5
50	Air transport	S62	Air transport	62	6
51	Communication	S64	Post and telecommunications	64	7
52	Financial services nec	S65	Financial intermediation, except insurance and pension funding (includes also part of NOGA 67)	65	14
52	Financial services nec	S65	Financial intermediation, except insurance and pension funding (includes also part of NOGA 67)	65	14
53	Insurance	S66	Insurance and pension funding, except compulsory social security (includes also part of NOGA 67)	66	8
54	Business services nec	S70	Real estate activities (including NOGA 97)	70	20
55	Recreational and other services	S92	Recreational, cultural and sporting activities	92	15
55	Recreational and other services	S93	Other service activities	93	15
55	Recreational and other services	S95	Activities of households as employers of domestic staff	95	15
56	Public Administration, Defense, Education, Health	S75	Public administration and defence; compulsory social security	75	16
56	Public Administration, Defense, Education, Health	S80	Education	80	16
56	Public Administration, Defense, Education, Health	S85	Health and social work	85	16
56	Public Administration, Defense, Education, Health	S90	Sewage and refuse disposal, sanitation and similar activities	90	16

GSC	BeschreibungGTAP	Swiss IOT	Description (NACE Rev 1)	Nace Rev 1	Mapping
56	Public Administration, Defense, Education, Health	S91	Activities of membership organizations n.e.c.	91	16
56	Public Administration, Defense, Education, Health	S95	Activities of households as employers of domestic staff	95	16
57	Dwellings	S71	Renting of machinery and equipment without operator and of personal and household goods	71	20
57	Business services nec	S72	Computer and related activities	72	20
57	Business services nec	S73	Research and development	73	20
57	Business services nec	S74	Other business activities	74	20