Taiwan

Hsing-Chun Lin, Lin-Chun Chung and Ruey-Wan Liou

This documentation outlines the main procedure followed by the Directorate-General of Budget, Accounting and Statistics (DGBAS), Executive Yuan, Republic of China in preparing an updated Taiwan I-O table for GTAP. The 1996 Taiwan I-O table was obtained directly from the Division of Industrial Relations of DGBAS. The 1996 I-O data base is based on the 1996 R.O.C. Standard Industrial Classification. It is a 596 by 160 I-O table. The list of commodities in the 1996 DGBAS data base and the concordance to the GSC2 classification is given in Appendix table 11.F.A1.

The major steps involved in preparing a Taiwan I-O table for the GTAP data base from the existing Taiwanese I-O table involved:

— establishing a concordance between the Taiwan I-O table header arrays with the GTAP header arrays, and
— establishing a concordance for both commodities and industries between the Taiwan I-O table and the GTAP sectoral classification (GSC2).

References


### Appendix

**Table 11.F.A1 Commodity Concordance between GTAP GSC2 and 1996 Taiwan I-O**

<table>
<thead>
<tr>
<th>GTAP GSC2</th>
<th>1996 Taiwan I-O (3-digit)</th>
<th>1996 Taiwan I-O(5-digit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 Paddy rice</td>
<td>001 Paddy rice</td>
<td>01020 Services of agricultural machines</td>
</tr>
<tr>
<td>02 Wheat</td>
<td>00210 Wheat</td>
<td></td>
</tr>
<tr>
<td>03 Cereal grains n.e.c.</td>
<td>00230 Corn</td>
<td>00295 By-products</td>
</tr>
<tr>
<td>04 Vegetables, fruit, nuts</td>
<td>005 Fruit</td>
<td>00220 Sweet-potatoes</td>
</tr>
<tr>
<td></td>
<td>006 Vegetable</td>
<td>01030 Irrigation</td>
</tr>
<tr>
<td></td>
<td>007 Other Horticultural Crops</td>
<td></td>
</tr>
<tr>
<td>05 Oil seeds</td>
<td></td>
<td>00431 Peanuts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>00439 Misc. crops for oil-making or beverage purpose</td>
</tr>
<tr>
<td>06 Sugar cane, sugar beet</td>
<td>003 Sugarcane</td>
<td></td>
</tr>
<tr>
<td>07 Plant-based fibers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>08 Crops n.e.c.</td>
<td></td>
<td>00441 Raw cotton</td>
</tr>
<tr>
<td></td>
<td></td>
<td>00449 Misc. fiber</td>
</tr>
<tr>
<td>09 Bovine cattle, sheep and goats, horses</td>
<td>00410 Tea leaves</td>
<td>00420 Tobacco</td>
</tr>
<tr>
<td></td>
<td></td>
<td>00490 Other crops for processing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>00495 By-products</td>
</tr>
<tr>
<td>10 Animal products n.e.c.</td>
<td>008 Hogs</td>
<td>00910 Cattle</td>
</tr>
<tr>
<td></td>
<td></td>
<td>01010 Services of draft animals</td>
</tr>
<tr>
<td></td>
<td></td>
<td>01090 Other agricultural services</td>
</tr>
<tr>
<td>11 Raw milk</td>
<td></td>
<td>00940 Eggs</td>
</tr>
<tr>
<td>12 Wool, silk-worm cocoons</td>
<td></td>
<td>00951 Chickens</td>
</tr>
<tr>
<td></td>
<td></td>
<td>00959 Other poultry</td>
</tr>
<tr>
<td></td>
<td></td>
<td>00960 Honey</td>
</tr>
<tr>
<td></td>
<td></td>
<td>00990 Other livestock, hunting prod. &amp; by-products</td>
</tr>
<tr>
<td></td>
<td></td>
<td>01840 Animal hide &amp; skins</td>
</tr>
<tr>
<td>13 Forestry</td>
<td>011 Forestry</td>
<td>00930 Milk</td>
</tr>
<tr>
<td>14 Fishing</td>
<td>012 Fisheries</td>
<td>00920 Wool &amp; hair, unkempt</td>
</tr>
<tr>
<td>15 Coal</td>
<td>013 Coal</td>
<td></td>
</tr>
<tr>
<td>16 Oil</td>
<td></td>
<td>01410 Crude oil</td>
</tr>
<tr>
<td></td>
<td></td>
<td>01440 Exploration expense</td>
</tr>
<tr>
<td>17 Gas</td>
<td></td>
<td>01420 Natural gas</td>
</tr>
<tr>
<td></td>
<td></td>
<td>01430 Geothermal energy</td>
</tr>
<tr>
<td>18 Minerals n.e.c.</td>
<td>015 Metallic Minerals</td>
<td></td>
</tr>
<tr>
<td></td>
<td>016 Salt</td>
<td></td>
</tr>
<tr>
<td></td>
<td>017 Other Non-Metallic Minerals</td>
<td></td>
</tr>
</tbody>
</table>

contd
<table>
<thead>
<tr>
<th>GTAP GSC2</th>
<th>1996 Taiwan I-O (3-digit)</th>
<th>1996 Taiwan I-O (5-digit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>19 Bovine cattle, sheep, goat, horse meat products</td>
<td></td>
<td>01820 Beef</td>
</tr>
<tr>
<td></td>
<td></td>
<td>01830 Other meat</td>
</tr>
<tr>
<td></td>
<td></td>
<td>01895 By-products</td>
</tr>
<tr>
<td>20 Meat products n.e.c.</td>
<td></td>
<td>01810 Pork</td>
</tr>
<tr>
<td></td>
<td></td>
<td>02430 Canned meat &amp; fish</td>
</tr>
<tr>
<td></td>
<td></td>
<td>02520 Frozen vegetables &amp; fruit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>03010 Processed fish &amp; meat (exclude canned &amp; frozen)</td>
</tr>
<tr>
<td>21 Vegetable oils and fats</td>
<td>019 Edible Oil &amp; Fat By-Products</td>
<td></td>
</tr>
<tr>
<td>22 Dairy products</td>
<td>028 Dairy products</td>
<td></td>
</tr>
<tr>
<td>23 Processed rice</td>
<td>021 Rice</td>
<td></td>
</tr>
<tr>
<td>24 Sugar</td>
<td>022 Sugar</td>
<td></td>
</tr>
<tr>
<td>25 Food products n.e.c.</td>
<td>020 Flour</td>
<td></td>
</tr>
<tr>
<td></td>
<td>023 Animal feeds</td>
<td></td>
</tr>
<tr>
<td></td>
<td>024 Canned foods (excluding 02430)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>025 Frozen foods (excluding 02520)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>027 Seasonings</td>
<td></td>
</tr>
<tr>
<td></td>
<td>029 Sugar confectionery &amp; bakery products</td>
<td></td>
</tr>
<tr>
<td></td>
<td>030 Misc. food products</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(excluding 03010)</td>
<td></td>
</tr>
<tr>
<td>26 Beverages and tobacco products</td>
<td>031 Non-Alcoholic Beverages</td>
<td></td>
</tr>
<tr>
<td></td>
<td>032 Alcoholic Beverages</td>
<td></td>
</tr>
<tr>
<td></td>
<td>033 Tobacco</td>
<td></td>
</tr>
<tr>
<td>27 Textiles</td>
<td>034 Cotton &amp; Cotton Fabrics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>035 Wool &amp; Worsted Fabrics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>036 Artificial Fabrics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>037 Knitted Fabrics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>038 Other Fabrics &amp; Fabric Products</td>
<td></td>
</tr>
<tr>
<td></td>
<td>039 Printing, Dyeing &amp; Finishing</td>
<td></td>
</tr>
<tr>
<td>28 Wearing apparel</td>
<td>040 Tatted Garments</td>
<td></td>
</tr>
<tr>
<td></td>
<td>041 Knitted Garments</td>
<td></td>
</tr>
<tr>
<td></td>
<td>042 Fabric Products, Wearing Apparel &amp; Accessories</td>
<td></td>
</tr>
<tr>
<td>29 Leather products</td>
<td>043 Leather</td>
<td></td>
</tr>
<tr>
<td></td>
<td>044 Leather Footwear</td>
<td></td>
</tr>
<tr>
<td></td>
<td>045 Other Leather Products</td>
<td></td>
</tr>
<tr>
<td>30 Wood products</td>
<td>046 Lumber</td>
<td></td>
</tr>
<tr>
<td></td>
<td>047 Plywood</td>
<td></td>
</tr>
<tr>
<td></td>
<td>048 Wood, Bamboo &amp; Rattan Products</td>
<td></td>
</tr>
<tr>
<td>32 Petroleum, coal products</td>
<td>066 Petroleum Refining Products</td>
<td></td>
</tr>
<tr>
<td></td>
<td>067 Coal Products</td>
<td></td>
</tr>
</tbody>
</table>

contd
Table 11.F.A1 Commodity Concordance between GTAP GSC2 and 1996 Taiwan I-O (continued)

<table>
<thead>
<tr>
<th>GTAP GSC2</th>
<th>1996 Taiwan I-O (3-digit)</th>
<th>1996 Taiwan I-O(5-digit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>33 Chemical, rubber, plastic products</td>
<td>054 Other Industrial Chemicals</td>
<td></td>
</tr>
<tr>
<td></td>
<td>055 Petrochemical Raw Materials</td>
<td></td>
</tr>
<tr>
<td></td>
<td>056 Chemical Fertilizers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>057 Synthetic Fibers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>058 Other Artificial Fibers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>059 Plastics (Synthetic Resins)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>060 Other Chemical Materials</td>
<td></td>
</tr>
<tr>
<td></td>
<td>061 Coatings</td>
<td></td>
</tr>
<tr>
<td></td>
<td>062 Medicines</td>
<td></td>
</tr>
<tr>
<td></td>
<td>063 Pesticides and Herbicides</td>
<td></td>
</tr>
<tr>
<td></td>
<td>064 Synthetic Detergents and Washing Preparations and Cosmetics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>065 Misc. Chemical Manufactures</td>
<td></td>
</tr>
<tr>
<td></td>
<td>068 Rubber &amp; Rubber Products</td>
<td></td>
</tr>
<tr>
<td></td>
<td>069 Plastic footwear</td>
<td></td>
</tr>
<tr>
<td></td>
<td>070 Other Plastic Products</td>
<td></td>
</tr>
<tr>
<td>34 Mineral products n.e.c.</td>
<td>071 Ceramics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>072 Glass &amp; Glass Products</td>
<td></td>
</tr>
<tr>
<td></td>
<td>073 Cement</td>
<td></td>
</tr>
<tr>
<td></td>
<td>074 Cement Products</td>
<td></td>
</tr>
<tr>
<td></td>
<td>075 Misc. Non-Metallic</td>
<td></td>
</tr>
<tr>
<td>35 Ferrous metals</td>
<td>076 Pig Iron &amp; Crude Steel</td>
<td></td>
</tr>
<tr>
<td></td>
<td>077 Primary Iron &amp; Steel Products</td>
<td></td>
</tr>
<tr>
<td>36 Metals n.e.c.</td>
<td>078 Aluminum</td>
<td></td>
</tr>
<tr>
<td></td>
<td>079 Miscellaneous Metals</td>
<td></td>
</tr>
<tr>
<td>37 Metal products</td>
<td>080 Metallic Products for Household Use</td>
<td></td>
</tr>
<tr>
<td></td>
<td>081 Metallic Hand Tools</td>
<td></td>
</tr>
<tr>
<td></td>
<td>082 Iron and Steel Products</td>
<td></td>
</tr>
<tr>
<td></td>
<td>083 Aluminum Products</td>
<td></td>
</tr>
<tr>
<td></td>
<td>084 Misc. Metallic Products</td>
<td></td>
</tr>
<tr>
<td></td>
<td>085 Surface Treating of Metal Products</td>
<td></td>
</tr>
<tr>
<td>38 Motor vehicles and parts</td>
<td>107 Motor Vehicle</td>
<td></td>
</tr>
<tr>
<td>39 Transport equipment n.e.c.</td>
<td>106 Shipbuilding</td>
<td></td>
</tr>
<tr>
<td></td>
<td>108 Motorcycles</td>
<td></td>
</tr>
<tr>
<td></td>
<td>109 Bicycles</td>
<td></td>
</tr>
<tr>
<td></td>
<td>110 Other Transport Equipment</td>
<td></td>
</tr>
<tr>
<td>40 Electronic equipment</td>
<td>096 Computer Products</td>
<td></td>
</tr>
<tr>
<td></td>
<td>097 Computer Peripheral Equipment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>098 Data Storage Media</td>
<td></td>
</tr>
<tr>
<td></td>
<td>099 Computer Components</td>
<td></td>
</tr>
<tr>
<td></td>
<td>100 Video and Radio Electronic Products</td>
<td></td>
</tr>
<tr>
<td></td>
<td>101 Communication Apparatus</td>
<td></td>
</tr>
<tr>
<td></td>
<td>102 Electronic Tube</td>
<td></td>
</tr>
<tr>
<td></td>
<td>103 Semi-conductors</td>
<td></td>
</tr>
</tbody>
</table>

contd
### Table 11.F.A1 Commodity Concordance between GTAP GSC2 and 1996 Taiwan I-O (continued)

<table>
<thead>
<tr>
<th>GTAP GSC2</th>
<th>1996 Taiwan I-O (3-digit)</th>
<th>1996 Taiwan I-O (5-digit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>41 Machinery and equipment n.e.c.</td>
<td>086 General Industrial Machinery</td>
<td></td>
</tr>
<tr>
<td></td>
<td>087 Metal Processing Machinery</td>
<td></td>
</tr>
<tr>
<td></td>
<td>088 Industrial Machinery</td>
<td></td>
</tr>
<tr>
<td></td>
<td>089 Other Machinery</td>
<td></td>
</tr>
<tr>
<td></td>
<td>090 Machinery Parts, Repair &amp; Maintenance</td>
<td></td>
</tr>
<tr>
<td></td>
<td>091 Household Electrical Appliances</td>
<td></td>
</tr>
<tr>
<td></td>
<td>092 Lighting Equipment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>093 Power Generation, Transmission and Distribution Machinery</td>
<td></td>
</tr>
<tr>
<td></td>
<td>094 Wires &amp; Cables</td>
<td></td>
</tr>
<tr>
<td></td>
<td>095 Other Electrical Materials</td>
<td></td>
</tr>
<tr>
<td>42 Manufactures n.e.c.</td>
<td>049 Non-Metallic Furniture</td>
<td></td>
</tr>
<tr>
<td></td>
<td>112 Education &amp; Entertainment Articles</td>
<td></td>
</tr>
<tr>
<td></td>
<td>113 Other Manufactures</td>
<td></td>
</tr>
<tr>
<td>43 Electricity</td>
<td>114 Electricity</td>
<td></td>
</tr>
<tr>
<td>44 Gas manufacture, distribution</td>
<td>115 Gas</td>
<td></td>
</tr>
<tr>
<td>45 Water</td>
<td>116 City Water, Steam &amp; Hot Water</td>
<td></td>
</tr>
<tr>
<td>46 Construction</td>
<td>117 Residential Building Construction</td>
<td></td>
</tr>
<tr>
<td></td>
<td>118 Nonresidential Building Construction</td>
<td></td>
</tr>
<tr>
<td></td>
<td>119 Public Works</td>
<td></td>
</tr>
<tr>
<td></td>
<td>120 Other Construction</td>
<td></td>
</tr>
<tr>
<td>47 Trade</td>
<td>121 Wholesale Trade</td>
<td>16020 Scrap &amp; second-hand goods</td>
</tr>
<tr>
<td></td>
<td>122 Retail Trade</td>
<td></td>
</tr>
<tr>
<td></td>
<td>123 Foreign Trade</td>
<td></td>
</tr>
<tr>
<td></td>
<td>124 Food &amp; Beverage Services</td>
<td></td>
</tr>
<tr>
<td></td>
<td>138 Hotel Services</td>
<td></td>
</tr>
<tr>
<td></td>
<td>156 Vehicles Services</td>
<td></td>
</tr>
<tr>
<td></td>
<td>157 Other Repair Services</td>
<td></td>
</tr>
<tr>
<td>48 Transport n.e.c.</td>
<td>125 Railway Transportation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>126 Other Land Transportation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>129 Services Incidental to Transport</td>
<td></td>
</tr>
<tr>
<td></td>
<td>130 Travel Agency Services</td>
<td></td>
</tr>
<tr>
<td></td>
<td>131 Warehousing</td>
<td></td>
</tr>
<tr>
<td>49 Water transport</td>
<td>127 Water Transportation</td>
<td></td>
</tr>
<tr>
<td>50 Air transport</td>
<td>128 Air Transportation</td>
<td></td>
</tr>
<tr>
<td>51 Communication</td>
<td>132 Postal Services</td>
<td></td>
</tr>
<tr>
<td></td>
<td>133 Telegram &amp; Telephone</td>
<td></td>
</tr>
<tr>
<td>52 Financial services n.e.c.</td>
<td>134 Finance</td>
<td>135 Security &amp; Future</td>
</tr>
</tbody>
</table>
| 53 Insurance              | 136 Insurance             |                          | contd
<table>
<thead>
<tr>
<th>GTAP GSC2</th>
<th>1996 Taiwan I-O (3-digit)</th>
<th>1996 Taiwan I-O(5-digit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>54 Business services n.e.c.</td>
<td>137 House Services</td>
<td></td>
</tr>
<tr>
<td></td>
<td>139 Real Estate Services</td>
<td></td>
</tr>
<tr>
<td></td>
<td>140 Legal and Accounting Services</td>
<td></td>
</tr>
<tr>
<td></td>
<td>141 Consulting Services</td>
<td></td>
</tr>
<tr>
<td></td>
<td>142 Data processing &amp; information services</td>
<td></td>
</tr>
<tr>
<td></td>
<td>143 Advertising Services</td>
<td></td>
</tr>
<tr>
<td></td>
<td>144 Renting &amp; Lousing Services</td>
<td></td>
</tr>
<tr>
<td></td>
<td>145 Misc. Services For Business</td>
<td></td>
</tr>
<tr>
<td></td>
<td>149 Scientific Research &amp; Services</td>
<td></td>
</tr>
<tr>
<td>55 Recreational and other services</td>
<td>154 Radio, Television &amp; Movies Services</td>
<td></td>
</tr>
<tr>
<td></td>
<td>155 Recreational &amp; Cultural Services</td>
<td></td>
</tr>
<tr>
<td></td>
<td>158 Household Services</td>
<td></td>
</tr>
<tr>
<td></td>
<td>159 Other Personal Services</td>
<td></td>
</tr>
<tr>
<td>56 Public administration and defense, education, health</td>
<td>146 Public Administration Services</td>
<td></td>
</tr>
<tr>
<td></td>
<td>147 Environmental Sanitary Services</td>
<td></td>
</tr>
<tr>
<td></td>
<td>148 Educational Training Services</td>
<td></td>
</tr>
<tr>
<td></td>
<td>150 Medical &amp; Health Services</td>
<td></td>
</tr>
<tr>
<td></td>
<td>151 Social Welfare Services</td>
<td></td>
</tr>
<tr>
<td></td>
<td>152 Services of Civil Association</td>
<td></td>
</tr>
<tr>
<td></td>
<td>153 Other Social Services</td>
<td></td>
</tr>
<tr>
<td>57 Dwellings(n.a.)</td>
<td></td>
<td>16010 Undistributed</td>
</tr>
</tbody>
</table>