Asian Historical Statistics: Taiwan

(Abstracts)

This volume presents a compilation of long-term economic time- series data for Taiwan for the period 1890-2000 in accordance with the rules and definitions of the System of National Accounts (SNA)[1].

[Introduction and Chapter 1]

Following the general introduction, Chapter 1 by Masahiro Sato and Hiroshi Ikegami provides an overview of the development of the statistical survey system during Japanese occupation (1895-1945) and under the Government of Taiwan (1945-2000).

[Chapter 2]

Chapter 2 by Osamu Saito and Tadayoshi Taniguchi deals with population and vital statistics. Not much effort has been made to compile a set of new time series of population and vital statistics, since the reliability of government statistics in both prewar and postwar times has long been considered generally high.

However, there are four areas where correction is necessary. First, the aboriginal population living in "aboriginal" districts was not covered by censuses before 1930; second, military personnel were not included in the 1956 census; third, the prewar census reports tabulated age groups by the traditional method of counting age; and fourth, published infant mortality rates before 1916 were apparently understated.

Having carefully examined contemporary materials in relation to the first three points, we set out an annual series of population totals with census years used as benchmarks and revised age-specific population tables in census years. As for the infant mortality rate, a new series is estimated for 1906-1916 based on statistics of cause-specific deaths broken down by type of medical doctor who issued the death certificates. This enables us to set out revised series of crude birth and death rates for the same 1906-1916 period.

Major tables in Chapter 2 include the following:

(1) Male and female population totals,

(2) Age-specific and sex-specific population totals in census years,

(3) Crude birth and death rates, and

(4) Infant mortality rate.

[1] "Taiwan" in the present volume refers to the "Taiwan area," as defined in the postwar Taiwan official statistical volumes, " and includes Penghu.

[Chapter 3]

Authored by Tadayoshi Taniguchi, Tangjun Yuan, and Konosuke Odaka, this chapter presents a systematic attempt at constructing annual time-series data on working population, employment, and wages by major (two-digit) industrial categories. Briefly presented are also descriptions of their estimating procedures as well as the nature of the data sources used. These data suggest that (a) the labor force participation rate of men declined markedly in the 1960s and the 1970s, while that of women showed an upward trend during the same period, and (b) rapid economic development has gone hand-in-hand with a decreasing trend in earning inequality, which, however, was accompanied by short-term, counter-cyclical fluctuations. Due attention was paid to the wide practice of having secondary occupations (*fukugyō*) in the pre-WWII decades. Attempts have been also made to include working hour statistics after WWII.

Major tables in Chapter 3 include the following:

(1) Employment by industry,

(2) Labor force and unemployment, and

(3) Work remuneration.

[Chapter 4]

It should be noted that the following explanatory notes on Chapter 4 concern mainly the estimate of pre-1960 series, as SNA production accounts for the period 1961-2000 have been published by the Taiwan Statistical Office (Directorate-General of Budget, Accounting and Statistics, hereinafter abbreviated as DGBAS).

Chapter 4 by Toshiyuki Mizoguchi deals with the production statistics for the primary industry (agriculture, forestry, fishing, and animal husbandry). Reliable agricultural production statistics by commodity are available for the period 1905-2000 from the *Yearbook of Agriculture*, which were used in earlier systematic studies on agricultural total production. Among others, Shigeru Ishikawa estimated time-series data of nominal and real values of agricultural production while the Joint Committee on Rural Research (JCRR) calculated value-added data, both of which have subsequently been revised, on the basis of detailed reexamination of historical data, by a group of economists at the National Taiwan University led by Tsong-ming Wu. In the present volume, these series are linked to agricultural accounts of SNA accounts for the period 1961-2000.

The production data on forestry and fishing are estimated using fragmentary information.

Major topics covered in the tables in this chapter include the following:

(1) Nominal production and value added in the primary industry,

(2) The composition of agricultural products,

(3) Long-term production indexes for the primary industry,

(4) Production and real value added in the primary industry in constant prices,

(5) Production and value added in the primary industry in constant prices, estimated by the Fisher chain-index method,

(6) Basic statistics on the primary industry.

[Chapter 5]

It should be noted that the following explanatory notes on Chapter 5 concern mainly the estimate of pre-1960 series, as SNA production accounts for the period 1961-2000 have been published by the Taiwan Statistical Office.

Chapter 5 by Yasuhiro Hara and Toshiyuki Mizoguchi presents long-term series on the values of production and value-added in the secondary industry in nominal and real terms, using production series estimated by Miyohei Shinohara. The value added in manufacturing has been estimated for the period 1912-1940 according to the International Standard Industrial Classification (ISIC), by using the worksheets on manufacturing production by Miyohei Shinohara. The series have then been linked to the official data for post-1961, making use of semi-official data compiled by DGBAS for 1940-51 and the authors' estimates for 1951-61.

Data on value added in mining are based on statistics collected from reports to the Bureau of Mining, Office of the Governor General of Taiwan (until 1945), and the Government of Taiwan (after 1945).

To estimate value added on electricity, gas, and water supply before WWII, the authors have used data on electricity generation by the Taiwan Electric Company.

Data for the construction industry are scarce, and its value added has been estimated by relying on our own estimates of construction investment (reported in Chapter 8), which are derived by the commodity-flow method.

Major tables in Chapter 5 include the following:

(1) Nominal production and value added in the secondary industry

(2) The composition of manufacturing production

(3) Production indexes for the secondary industry

(4) Production and real value added in the secondary industry in constant prices, estimated by constant price evaluation

(5) Production and real value added in the secondary industry in constant prices, estimated by the Fisher chain-index method

(6) Basic statistics on the secondary industry.

[Chapter 6]

It should be noted that the following explanatory notes on Chapter 6 concern mainly the estimate of pre-1960 series, as SNA production accounts for the period 1961-2000 have been

published by the Taiwan Statistical Office (DGBAS).

Chapter 6, by Toshiyuki Mizoguchi, examines statistics on activities in the tertiary industry (wholesale and retail trades, transport and communication, finance and real estate, and services). Generally speaking, statistics on these industries are scarce, and fragmentary data have been utilized to supplement whatever information available.

Relatively abundant are data on the transport and the communication industries, which are composed of "modern" and "traditional" sectors. The data on the modern sector (i.e., the sector with modern, imported technology) are easily available from administrative reports of the public transport and communication agencies for the entire period. In contrast, systematic surveys on the traditional, or indigenous, sector before WWII are scarce, so that administrative reports by police agencies have been used wherever possible to fill the lack of information.

Statistics on wholesale and retail trades are just as scarce. Fortunately, however, censuses on these industries are available for some years (1944 and then every five years after 1961), so that the time-series data have been estimated by extrapolation.

Value added in the private financial sector has been adopted from Chapter 7.

Value-added statistics of real estate and service industries have been estimated utilizing relevant information from the expenditure accounts.

Major tables in Chapter 6 include the following:

(1) Nominal production and value added in the tertiary industry,
(2) The composition of production by type of commercial activity,
(3) The composition of production by type of transport and communication activities,
(4) Production and value added on the tertiary industry in constant prices, and
(5) Production and value added in the tertiary industry in constant prices, estimated by Fisher chain-index method.

[Chapter 7]

Chapter 7 by Toshiyuki Mizoguchi focuses on the statistics on public financing. While an abundance of data on public finances is available in administrative reports, painstaking work has been required to compile public accounts data on an SNA basis. Fortunately, reliable SNA-based data are available for the post-WWII period in the Official Report of SNA compiled by DBGAS so that it has been necessary only to estimate the corresponding data for the pre-WWII period using the budgetary reports by the Office of the Governor General of Taiwan. The data include government consumption in the expenditure accounts and government service production in the production accounts.

The original plan to include in this chapter a set of statistics on private financial institutions has been abandoned, since a separate set of volumes on financial statistics in Asian

countries have been published from the same publisher.[2] The present chapter restricts itself to reporting some major statistics of private financial institutions including that of currency in circulation.

Major tables for the government activities and the financial institutions are as follows.

(1) Government consumption and the provision of government services in nominal and real terms,

(2) The composition of government expenditures by purpose,

(3) The number of private financial institutions, and

(4) Nominal and real value added of private financial institutions.

[Chapter 8]

It should be noted that the following explanatory notes on Chapter 8 concern mainly the estimate of pre-1940 series, as the Taiwan Statistical Office (DBGAS) publishes the SNA nominal and real expenditure accounts for the period 1951-2000.

Chapter 8, by Toshiyuki Mizoguchi, provides estimates of the expenditure accounts on an SNA basis. As government consumption and foreign trade are examined in Chapter 7 and Chapter 9 respectively, this chapter covers private consumption and gross capital formation.

Nominal private consumption in the pre-1940 period is estimated relying on Yasuhiro Terasaki's estimates, which have used the commodity-flow method. However, the following items have been replaced by new estimates by the present author:

(a) Tobacco consumption expenditure,

(b) Housing rent, and

(c) Transport and communication expenditures.

Whereas Yasuhiro Terasaki estimated real values (in constant terms) only for aggregate consumption expenditure, its breakdowns by separate expenditure categories have been attempted by estimating respective consumption deflators, and linked to the post-1951 data available from the SNA Report by DGBAS.

Data on gross capital formation in the pre-1940 period have been adopted from previous work by the Toshiyuki Mizoguchi, which made use of the commodity flow method. They are also linked to the post-1951 data by DGBAS.

Major tables compiled in Chapter 8 include the following:

(1) Nominal and real expenditure accounts,

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[2] Jūro Teranishi, Shin'ichi Fukuda, Hidenobu Okuda, and Fumiharu Mieno, *Asia no keizai hatten to kin'yū shisutemu* [The economic development and financial system in Asia], 2 volumes (vol. 1 on Northeast Asia and vol. 2 on Southeast Asia), Tokyo: Toyo Keizai Inc., 2007; chapter 2 and 5 and statistical appendix tables 2-1 through 2-11, authored by Shin'ichi Fukda, deal with post-W.W.II Taiwan

(2) Nominal and real private consumption by expenditure category, and

(3) Nominal and real gross capital formation.

[Chapter 9]

Taiwanese foreign trade data are collected and tabulated as long-term series from 1900 to 2000 in Chapter 9, authored by Noriyuki Nojima. Considering the sizable quantity of foreign trade statistics, the period has been divided into four periods, i.e., 1900-1943, 1944-1948, 1949-1962, and 1963-2000.

Taiwanese official foreign trade statistics for the post-1963 period are available on magnetic tapes held by the Institute of Developing Economies. Kozo Kiyota and Kyoji Fukao reclassified these IDE data on the basis of the 1960 Standard International Trade Classification (SITC). Official foreign trade statistics were published in the period 1949-1962 (*The Trade of China (Taiwan), 1950-61)*, but some additional work has been required to make them comparable to the data for the post-1963 period, based on SITC.

Statistics during the period 1944-1948 are incomplete, and available data are of limited reliability because of the upheaval caused by WWII and the civil war in China.

Data for the pre-1943 period are available from the reports of the Office of the Governor General of Taiwan (i.e., *Annual Return of the Foreign Trade of Taiwan*[3]). The data have been re-tabulated in accordance to the SITC standard.

The reader should note that the foreign trade statistics of Taiwan for the pre-1945 period are defined as trade with the rest of the world, including Japan and its colonies. More specifically, exports and imports in the pre-1945 decades are defined as follows:

Total exports = Exports to foreign countries + Exports to the Imperial Japan

= Exports to foreign countries including Kwantong Province, Manchuria, and the area under the control of the South Manchuria Railway + Exports to the Imperial Japan including Japan proper, Korea (1913 and after), the Southern Karafuto and the South Sea Islands,

Total imports = Imports from foreign countries + Imports from the Imperial Japan

= Imports from foreign countries including Kwantong Province, Manchuria, and the area under the control of the South Manchuria Railway + Imports from the Imperial Japan including Japan proper, Korea (1913 and after), the Southern Karafuto and the South Sea Islands,

Value and quantity series for imports and exports are available by commodity. Nominal

[3] The present work depends mainly on the 1917 and newer editions of the report, although earlier editions have been used to fill data deficiency.

and real series are shown in accordance with the SITC, being classified by principal countries. For the pre-WWII period figures are shown only for the years 1903, 1908, 1913, 1918, 1923, 1928, 1933, and 1938, while annual data are tabulated for the post-1950 period.

Major tables compiled in Chapter 9 include the following:

(1) Total export and total import,
(2) Exports and imports of SITC 10 commodities
(3) Exports and imports of SITC 57 commodities,
(4) Exports and imports by country,
(5) Exports and imports of SITC 10 commodities by country (before WWII), and
(6) Export and import price indexes of SITC 10 commodities (before WWII)

[Chapter 10]

In Chapter 10 Toshiyuki Mizoguchi has consolidated the SNA tables. For nominal accounts, the estimates of production and expenditure in previous chapters are adjusted in such a way that statistical discrepancies are nil. In order to obtain long-term real national accounts series, it has been necessary to link time-series data, which are compiled on different base years. Three alternative estimating methods have been used and tabulated separately, namely,

(a) Constant price evaluation method, which keeps 1960 as the base year throughout ,
(b) Semi-official SNA method, which changes base years in accordance to the GDBAS rules (every 5 years, in principle), and
(c) Fisher chain-index method, which changes base year annually.