



Korea's first industrial revolution, 1911–1940[☆]

Myung Soo Cha^{a,*}, Nak Nyeon Kim^b

^a School of Economics and Finance, Yeungnam University, 214-1 Dae-dong, Kyungsan, 712-749, South Korea

^b Department of Economics, Dongguk University (Seoul Campus), 1-30 Pildong-ro, Seoul, 100-715, South Korea

ARTICLE INFO

Article history:

Received 23 November 2010

Available online 22 September 2011

Keywords:

Population

Economic growth

Structural change

Growth accounting

ABSTRACT

We estimate output and population of colonial Korea to show that per capita output grew 2.3% with population expanding 1.3% per year from 1911 to 1940. Growth accounting indicated that productivity advance accounted for roughly one half of the per capita output growth. Primary production as a share of GDP fell from 69% to 42% during the period. Rapid productivity improvement caused nontradable sectors to become increasingly important, while capital accumulation drove industrialization. Demographic expansion, per capita output growth, and structural change occurred at considerably faster rates in northern than in southern provinces.

© 2011 Elsevier Inc. All rights reserved.

1. Introduction

The economic history of modern Korea offers a series of interesting natural experiments for growth economists. Having forced Korea to be open to international trade in 1876, Japan annexed the country in 1910, replacing the decrepit government of the Yi dynasty with an efficient, if not democratic, colonial state. Thirty five years later, Korea regained independence, but was split into two separate regimes, one adopting a market system and the other a command economy. Growth performance differed radically under the four different policy regimes — a pattern of laboratory outcome that seems likely to help one to assess the importance of different growth-affecting shocks and institutions.

However, the amount of information available on growth-affecting variables under each of the four regimes varies widely, which limit the kinds of comparison that can be made across the growth episodes. One major objective of this article is to allow more interesting questions to be asked on the causes of Korea's economic growth by estimating the country's aggregate output and population during the colonial era. Not being the first to try to estimate the national accounts of colonial Korea, we begin in the second section by explaining why the calculation is well worth carrying out all over again and how we did it. Population growth before the first census in 1925 has so far been extrapolated from demographic trends observed during the post-census decades. In the third section of this article, we present the first estimate of pre-census population growth based upon direct observation, which is vital data collected from genealogies. As the outcome of these two sections indicates, per capita output grew 2.3% with population expanding 1.3% per year, and primary production as a share of GDP fell from 69% to 42% from 1911/3 to 1938/40. In the fourth section, we carry out growth accounting in the aggregate, as well as by sector, which allows us to assess the role of productivity advance and capital accumulation in the colonial growth and structural change. The fifth section discusses the implications of our estimate for the economic history of colonial Korea and the impact of colonialism on growth. The final section summarizes and concludes.

[☆] This study draws on collaborative efforts of researchers participating in the Historical Statistics of Korea Project at Naksungdae Institute of Economic Research. They include Kazuo Hori, Ikjong Joo, Jae Ho Kim, Woo Youn Lee, Heejin Park, Yi Taek Park, Ki Joo Park, Sub Park, and Kyoung Eun Song. We gratefully acknowledge financial support of the Korea Research Foundation (KRF-2002-073-AS1004, KRF-2007-322-B00010, NRF-2010-32A-B0035).

* Corresponding author. Fax: +82 53 810 4651.

E-mail addresses: mscha@ynu.ac.kr (M.S. Cha), nnkim@dongguk.edu (N.N. Kim).

2. Gross domestic expenditure and product, 1911–1940

Statistical legacy of Japanese rule has so far prompted three separate attempts to estimate the size and structure of colonial Korea's aggregate output, which generated outcomes that are inadequate in varying degrees. Lee (1971) was the first to calculate the aggregate output of colonial Korea, but his estimation dealt only with the decade from 1926 to 1936. Suh (1978) then estimated gross and value-added output from 1910 to 1940 for agriculture and manufacturing, leaving out service production. Finally, Mizoguchi and Umemura (1988) published the national accounts of Korea from 1911 to 1938, which represented the first ever calculation covering the whole economy and the best part of the colonial period.

Undoubtedly a significant advance made on the shoulder of earlier efforts, Mizoguchi and Umemura (1988) left ample room for improvement. First, Mizoguchi and Umemura (1988) calculated nontradable output (including construction, public utilities and service) by first deriving underestimates using a fraction of available information and then blowing them up with multipliers lacking empirical basis (Mizoguchi and Nojima (1988, p. 141)). Second, drawing primarily on *Chōsen sōtokufu tōkei nenpō* (Statistical Yearbook of Colonial Korea, Statistical Yearbook hereafter) to estimate manufacturing output, Mizoguchi and Umemura (1988) replaced missing observations with values obtained by interpolation and extrapolation, although the holes could have been filled with direct observations available from other sources than the Statistical Yearbook. Third, the Mizoguchi and Umemura (1988) dataset includes component series that are mutually inconsistent: for instance, fixed capital consumption exceeds gross fixed capital formation until as late as 1934, while the capital stock estimate follows an uninterrupted growth path.¹ Fourth, the dataset uses imprecise and non-standard definitions, one important example being the current account that excludes bullion and service trade. Finally, Mizoguchi and Umemura (1988)'s procedure does not conform either to the 1968 System of National Accounts (SNA 68) or SNA 93 developed by the United Nations, which makes it difficult to link the colonial with South Korean macroeconomic time series.

This section presents a fresh estimate of the national accounts of Korea from 1911 to 1940 that incorporate major improvements in at least four areas. First, we sought to avoid the use of multipliers with little empirical basis by broadening data base, which improved the reliability of estimate of public spending and service output, among others. Second, service output also benefited from superior method of evaluation: in particular, to estimate output from trade and transportation sectors we used information on markup ratios. Third, rather than drawing primarily on the Statistical Yearbook, we compared multiple data sources to enhance the accuracy and consistency of underlying data, which resulted in considerably more reliable estimates of manufacturing output and overseas trade. Finally, we estimated both gross domestic product and expenditure (GDP and GDE, respectively, hereafter) in a consistent framework, SNA 93, thereby reducing the discrepancy between the two measures of the aggregate economic activity substantially. We have prepared a Technical Note, which is available upon request, to explain these issues in detail.

We derived GDP by summing up gross value-added output from fifteen different branches of economic activity. For sectors other than agriculture, construction, and the government, value-added output was obtained by multiplying sectoral gross output with sectoral value-added ratios.² While both Suh (1978) and Mizoguchi and Umemura (1988) borrowed the Japanese value-added ratios in 1930, we chose to use the value-added ratios for South Korea in 1966, for colonial Korea looked far closer to South Korea in the mid-1960s than Japan in 1930 in terms of living standards and economic structure.³ Value-added output for agriculture was set equal to the difference between estimated gross output and the sum of intermediate input use. Gross and value-added output of construction was derived by combining information on wage payments and intermediate input with assumptions on profit. Value-added output of the public sector equals the sum of wages paid to public servants and capital consumption, which amounts to assuming that the operating profits and indirect tax payments are zero.⁴

GDE includes public and private consumption, investment and net exports. Value of exports and imports are readily available from official statistics, which we adjusted for omission and inconsistency.⁵ As the SNA 93 stipulates, public consumption was set equal to gross government service output, which can be derived by adding intermediate input use to the estimated value-added output of the public sector.⁶ We derived investment and private consumption by applying investment and consumption ratios, respectively, to domestic supply – the sum of gross output and net imports – by sector. For most of goods and services, we applied sectoral consumption and investment ratios as read off the 1966 input–output table for South Korea. Exceptions to this procedure include construction investment and consumption ratios for primary products, rubber goods, and electricity, which were derived using relevant information based on direct observation.⁷

To convert values into volumes, we used the geometric mean of chained Laspeyres and Paasche price index, a deflator known as the chained Fisher index. The United Nations recommends the use of this deflator, both because its growth rate (i.e. rate of inflation) is not susceptible to base year shifts, and because the index can readily incorporate the impact of entry and exit of goods. Our GDP deflator follows a familiar pattern of fluctuations, which includes inflation during the First World War, the

¹ The origin of this inconsistency is to be found in Mizoguchi and Umemura's (1988) use of Japanese depreciation rates in deriving capital stock from his capital formation estimate for colonial Korea. As explained in the fourth section, we could avoid this incongruity by letting the depreciation rate be determined endogenously by the estimated amount of capital consumption. It should also be noted that agricultural capital stock, a component of Mizoguchi and Umemura's (1988) capital stock estimate, refers to agricultural capital stock in southern Korea, which was estimated by Ban (1979).

² The first section of Technical Note explains the procedure followed to estimate sectoral gross output.

³ See page 12 of Technical Note for empirical basis for this claim.

⁴ Pages 5, 6, 9, and 10 of Technical Note describe the procedure followed to calculate value-added output of construction and the public sector.

⁵ See pages 14 and 15 of Technical Note for details on trade statistics.

⁶ Some government services (e.g. public education) are sold on the market (frequently at heavily subsidized prices), which was subtracted from government to be attributed to private consumption.

⁷ Page 13 of Technical Note takes the case of rice consumption to illustrate this procedure.

Download English Version:

<https://daneshyari.com/en/article/5068839>

Download Persian Version:

<https://daneshyari.com/article/5068839>

[Daneshyari.com](https://daneshyari.com)