Available online at www.sciencedirect.com
SCIENCE DIRECT®
Explorations in Economic History 43 (2006) 280–308
Explorations in Economic History
www.elsevier.com/locate/eeh

International comparison in historical perspective: Reconstructing the 1934–1936 Benchmark purchasing power parity for Japan, Korea, and Taiwan

Kyoji Fukao, Debin Ma *, Tangjun Yuan [1]

GRIPS/FASID Joint Graduate Program, 7-22-1 Roppongi, Minato-ku, Tokyo 106-8677, Japan

Received 29 February 2004
Available online 25 April 2005

Abstract

This article provides the first expenditure-based estimate of purchasing power parity (PPP) converters for 1934–1936 Japan, Korea, and Taiwan. We match all together 70–80 types of goods and services for private consumption, government expenditure and investment using three levels of weights derived from various expenditure surveys. We find that the 1934–1936 average prices of Korea for private consumption, investment, and government expenditure were about 0.86, 0.89, and 0.98 times that of Japan, respectively; and for Taiwan 0.84, 0.87, and 0.95, respectively. This gives the 1934–1936 Korea and Taiwan overall GDE average

* Corresponding author. Fax: +81 3 5413 0016.
E-mail address: debinma@grips.ac.jp (D. Ma).

[1] Kyoji Fukao is professor of Economics at the Institute of Economic Research, Hitotsubashi University. Debin Ma is faculty fellow of the Foundation for Advanced Studies on International Development (FASID), Tokyo, Japan. Tangjun Yuan is research fellow of the Graduate School of Economics at Hitotsubashi University. We want to thank Toshiyuki Mizoguchi, Yasuhirou Terasaki, Konosuke Odaka, Osamu Saito, Tetushi Sonobe, Jean-Pascal Bassino, and Myunsoo Cha for comments. We benefited from comments by the Editor and two anonymous referees of this Journal, and the participants of the research workshops at Hosei University, the Institute of Economic Research at Hitotsubashi University, FASID and the 5th World Cliometrics Congress in Venice in 2004. Research funding from the Japanese Ministry of Education and FASID are gratefully acknowledged. We alone are responsible for all errors.

0014-4983/$ - see front matter
doi:10.1016/j.eeh.2005.02.005

price levels of 0.87 and 0.86 that of Japan, respectively. Our new benchmark estimate is an improvement over existing converters based either on exchange rates or the 1990 backward projection method, which is embedded with index number biases. It provides a vital link for a long-term overview of structural change, ethnic income distribution, and the historical convergence for these three economies.

Keywords: Purchasing power parity; International comparison; Convergence; Index number bias; Backward projection

1. Introduction

The rejuvenation of growth theories and the rise of the ''new'' growth theories in the past decade have revolutionalized our intellectual thinking on issues of long-term economic development. Central to the empirical works of this burgeoning theoretical literature is the compilation of historical national accounts data in purchasing power parity (PPP) terms, exemplified by the masterly scholarship of the Penn World Table group and Angus Maddison.

While the debate on whether global economies are converging or diverging over time is still on-going, the miraculous rise of Japan, Korea, and Taiwan from the aftermath of WWII has been undoubtedly a source of inspiration for the convergence school, as well as other aspiring developing economies. The past two decades have also seen a flourishing of scholarly works on the role of historical factors—particularly their shared colonial heritage in the pre-WWII period—in the long-term economic development of these three economies. An important milestone in this literature is the systematic reconstruction of times series macroeconomic indicators of Korea and Taiwan in the Japanese colonial era using detailed statistics compiled by the Japanese colonial administrations. This culminated in the publication of the statistical volume compiled by Mizoguchi and Umemura (hereafter referred to as M&U) and published in 1988, which provided annual estimates of GDP and its various components for Taiwan and Korea in the colonial period.

The GDP series of these three economies in the M&U volume, based on the official one to one exchange rate, shows the Taiwanese and Korean per-capita GDP at about 60 and 40%, respectively, of the Japanese level in the 1930s. It has long been revealed by the purchasing power parity (PPP) doctrine that exchange rate conversion of international per-capita income, which fails to incorporate relative price level differences in the non-tradable sector, tends to systematically underestimate the real per-capita income level of the lower income countries (in this case Taiwan and Korea) (Balassa, 1964; Bhagwati, 1984).

The GDP series in the M&U volume also formed the basis of Angus Maddison's national accounts series for the colonial period. To arrive at globally comparable series, Maddison consistently used the 1990 benchmark PPP to project backward using domestic real GDP growth rates. Surprisingly, the Maddison backcast series based on the original M&U data, gives the Taiwanese and Korean per-capita GDP at 63