

Comments on Estimates of the Long-run Economic Growth of Taiwan Based on Revised SNA Statistics

Tsong-Min Wu
National Taiwan University

September 2005

Prof. Mizoguchi's paper:

- ▶ Summarizing Taiwan's long-run GDP estimation

Prof. Mizoguchi's paper:

- ▶ Summarizing Taiwan's long-run GDP estimation
- ▶ Revising Mizoguchi and Umemura (1988) and other series

Prof. Mizoguchi's paper:

- ▶ Summarizing Taiwan's long-run GDP estimation
- ▶ Revising Mizoguchi and Umemura (1988) and other series
- ▶ GDP time series are extended to 1901–2000 (was 1903–1938)

There are many estimation details in this paper, but we would:

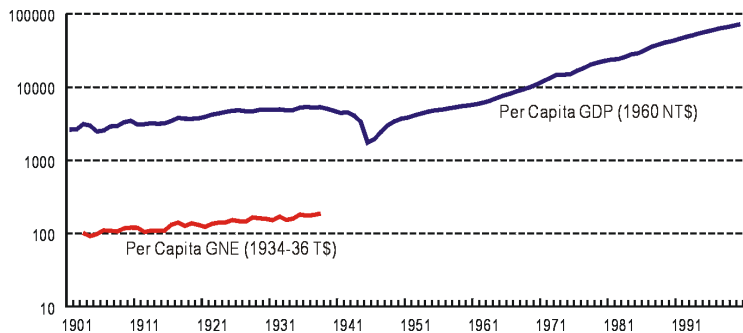
There are many estimation details in this paper, but we would:

- ▶ Provide an interpretation of why the estimates are important. It is also a way of checking the estimates

There are many estimation details in this paper, but we would:

- ▶ Provide an interpretation of why the estimates are important. It is also a way of checking the estimates
- ▶ Suggest a data set that might improve on the estimation

Taiwan's Per Capita GDP (1960 NT\$)



Per capita GDP increase by 29.3 times

- ▶ Per capita GDP was **2,466 dollars in 1905** (in 1960 NT\$), it increased to 72,264.7 dollars in 2000.
An increase of **29.3 times**.

Per capita GDP increase by 29.3 times

- ▶ Per capita GDP was **2,466 dollars in 1905** (in 1960 NT\$), it increased to 72,264.7 dollars in 2000.
An increase of **29.3 times**.
- ▶ The link of pre-WWII GDP series to the post-War series makes it possible for international comparison

Per capita GDP increase by 29.3 times

- ▶ Per capita GDP was **2,466 dollars in 1905** (in 1960 NT\$), it increased to 72,264.7 dollars in 2000.
An increase of **29.3 times**.
- ▶ The link of pre-WWII GDP series to the post-War series makes it possible for international comparison
- ▶ Converting the unit to Maddison's (2001) GDP data set [1951–1999], per capita GDP in 1905 was **536.5 dollars** (in 1990 international dollars)

A traditional agricultural economy

- ▶ Maddison (2001): per capita GDP of a traditional agricultural economy was about 600 dollars

A traditional agricultural economy

- ▶ Maddison (2001): per capita GDP of a traditional agricultural economy was about 600 dollars
- ▶ Lucas (2002): 600 dollars plus or minus 200 dollars

A traditional agricultural economy

- ▶ Maddison (2001): per capita GDP of a traditional agricultural economy was about 600 dollars
- ▶ Lucas (2002): 600 dollars plus or minus 200 dollars
- ▶ Pritchett (1997): the lowest subsistence level in any human society was about 300 dollars. For example, Tanzania in 1998: 553 dollars.

A traditional agricultural economy

- ▶ Maddison (2001): per capita GDP of a traditional agricultural economy was about 600 dollars
- ▶ Lucas (2002): 600 dollars plus or minus 200 dollars
- ▶ Pritchett (1997): the lowest subsistence level in any human society was about 300 dollars. For example, Tanzania in 1998: 553 dollars.
- ▶ Per capita GDP was 536.5 dollars in 1905, so Taiwan was a traditional agriculture economy in 1900

A traditional agricultural economy

- ▶ The conclusion is not surprising, but ...

A traditional agricultural economy

- ▶ The conclusion is not surprising, but ...
- ▶ Growth rate of per capita GDP is near zero for a traditional economy. So ...

A traditional agricultural economy

- ▶ The conclusion is not surprising, but ...
- ▶ Growth rate of per capita GDP is near zero for a traditional economy. So ...
- ▶ Assuming that per capita GDP in 1624 (Dutch period) was 500 dollars, then the average growth rate from 1624 to 1900 was 0.026%.

Per capita GDP and growth

1624–1900	1902–1940	1950–2000
0.026%	1.73%	6.21%

Per capita GDP and growth

1624–1900	1902–1940	1950–2000
0.026%	1.73%	6.21%

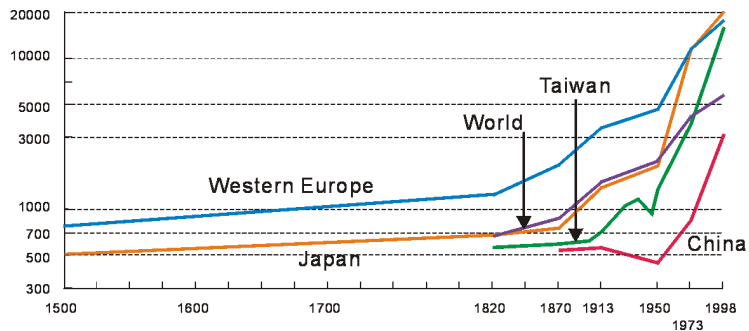
- ▶ There was **A structural change in 1900** (or modern economic growth) in the beginning of the Japanese administration

Per capita GDP and growth

1624–1900	1902–1940	1950–2000
0.026%	1.73%	6.21%

- ▶ There was **A structural change in 1900** (or modern economic growth) in the beginning of the Japanese administration
- ▶ How did it happen?

Per capita GDP



Comparing with Fukien or Kwangtung

- ▶ In 1895, per capita GDP was the same

Comparing with Fukien or Kwangtung

- ▶ In 1895, per capita GDP was the same
- ▶ In 1940, Taiwan was twice of Fukien or Kwangtung

Comparing with Fukien or Kwangtung

- ▶ In 1895, per capita GDP was the same
- ▶ In 1940, Taiwan was twice of Fukien or Kwangtung
- ▶ In 2000, Taiwan was four times of Fukien or Kwangtung

Comparing with Fukien or Kwangtung

- ▶ In 1895, per capita GDP was the same
- ▶ In 1940, Taiwan was twice of Fukien or Kwangtung
- ▶ In 2000, Taiwan was four times of Fukien or Kwangtung
- ▶ Why? **Institutional change** by the colonial government? For example, land tax reform of 1898–1904.

A data set

- ▶ The above interpretation depends on the accuracy of the GDP estimation
- ▶ Mizoguchi (2005): “Data are scarce and less reliable for period [1901–1911], so our estimates here remain preliminary.”

Land Tax Reform: 1898–1904

- ▶ Taiwan was ceded to Japan in 1895
- ▶ Land Survey Bureau was established in 1898
- ▶ To assign a tax rate to a land, the Bureau had to estimate the crop value of the land

Land Tax Reform: 1898–1904

- ▶ Taiwan was ceded to Japan in 1895
- ▶ Land Survey Bureau was established in 1898
- ▶ To assign a tax rate to a land, the Bureau had to estimate the crop value of the land
- ▶ Survey was done in 1903–1904, price data from 1898–1902, and we have crop value of each paddy and dry field in Taiwan

Comparing crop production of 1904

	total	paddy field	dry field
Mizoguchi (2005)	36.13		
Wu (2001)	38.58	23.90*	–
Land survey	50.72	33.13	17.60

- ▶ Both Mizoguchi (2005) and Wu (2001) use *Annual Statistics of TGG*
- ▶ A puzzle: Why Land survey estimate was so much bigger?

How the interpretation affected?

- ▶ Using the estimate of Land Survey Bureau for crop value, per capita GDP in 1905 would be 606.7 dollars. So the interpretation about the structural change is still valid.

How the interpretation affected?

- ▶ Using the estimate of Land Survey Bureau for crop value, per capita GDP in 1905 would be 606.7 dollars. So the interpretation about the structural change is still valid.
- ▶ There were four surveys in 1898–1945, and the data might be used to improve the GDP estimation.

Mizoguchi, Toshiyuki and Umemura, Mataji (1988), *Basic Economic Statistics of Former Japanese Colonies, 1895–1938*, Tokyo: Toyo Keizai Shinposha.