Reflections on Taiwan’s Higher Education Policies for Productivity Growth

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Aims

This paper seeks to answer two questions:

- How have Taiwan’s higher education policies responded to the forces of globalization, the neo-liberal economic ideology, and the world-class university ranking competition?

- What are the implications for productivity growth and economic prosperity of the country?
OVERVIEW

- Taiwan
  - Country Profile
  - Historical Context
  - Higher Education Significance

- Global Trends
  - Effects
  - The SSCI syndrome

- Local Impacts
  - Relevance
  - Gender Equity

- Conclusions
TAIWAN: COUNTRY PROFILE

- Population: **23.3 million** (2013)
- GDP, per capita: **$20,930 (#40)** (2013)
- Literacy rate: **98.04%** (2010)
- Urbanization: **70%** (2010)
- Demographics:
  - 98% Han Chinese
  - 2% Indigenous
TAIWAN: HISTORICAL CONTEXT

-1895  Qing Dynasty Era
- Education primarily for elite

1895-1945  Japanese Colonial Era
- Development of modern education system
- Japanese language in schools

1949-1987  Republic of China, Martial Law Era
- Emphasis on “Chinese” aspects of Taiwanese history and culture

1987-  Republic of China, Democratic Era
- Education increasingly “Taiwanese”
- Still primarily centralized
Zheng Chenggong (鄭成功) landing in Taiwan in 1662.

Taipei South Gate in 1896 (22nd year of the Guangxu reign)

View of Datun Mountain from inside Taipei City (1930)
Taipei, 1960s

Source: taipics.com
Taipei, early 1980s

Source: taipics.com
Taipei, 2010s
Taipei Universiade, August 2017
WHY DOES TAIWAN’S HIGHER EDUCATION MATTER?

- **Globally**
  1. The second highest higher education admission rate (70%) in the world
  2. Model of economic success
  3. Example of impacts of neoliberalism and marketization on HE

- **Locally**
  1. Rapid university expansion and upcoming closures
  2. Cost-efficient university model
  3. Increasing cross-strait exchanges between China and Taiwan
GLOBAL TRENDS AFFECTING TAIWAN’S ACADEMIA

- Neoliberal turn since the 1990s.
- Expansion of higher education systems.
- Drive for ‘global excellence in world-class university ranking.
- Desire to boost national competitiveness.
Why ‘World-Class’?

*Rankings as both goal and measure (World-Class Research University Project, 2003; ‘Five Year, Fifty Billion’ plan). *Research output is the key

1. Globalization

2. Government Preference for neo-liberal, market-based solutions

3. Internationalization

4.*

5.*
In the name of being as standardized and objective as possible to avoid academic bias accusations

- University Quality Assurance, used as benchmark for budget allocation
- Monitor the publication records among individual faculty members
  - New hiring practices
  - 6-year probation
  - Performance and evaluation systems
EFFECTS – ‘ACADEMIC DRIFT’

- University Human Resource (HR) policies amended to enhance research output.
  - Rely on quantitative metrics, rewarding high outputs. (esp. journal publication)
  - Hiring, probation, promotion and rewards all depend on journal publication and journal ‘impact factors.’
- Academic career structure has geared toward research publication record.
- Academics increasingly select mainstream research topics to increase acceptance rate rather than social relevancy
- Other areas such as book publication and teaching are considered secondary.
Effects are not consistent across academic disciplines

- Staff with **quantitative backgrounds** publish more than qualitative.
- **Interdisciplinary subjects** experience greater hardship placing articles.
- **Humanities/Social Sciences research** forced away from ‘local’ norms and topics more than physical sciences/engineering.

- Faculty with excellent teaching performance cannot succeed in academic promotion without research output – ‘**publish or perish**’.
Institutions experience greater disparity in resources between elite and non-elite universities.

Non-elite (esp. private) universities whose students mostly from lower SES rely more heavily on tuition fee incomes.
Despite, academic productivity has increased as a result...
**Relative Publication Growth**

- In 1981, only 543 academic papers were published in Taiwan, accounting for only 0.12% globally.
- In 2012, there were more than 26,000, 2.07% of global publication.
- As we see in the previous figure, except for Japan and the US, other countries have a obviously increasing trend.
- Korea, China, Singapore, and Taiwan have seen the greatest relative growth in publication.
NUMBER OF PAPERS PUBLISHED

In thousands

Number of Paper Publishing

- EU
- USA
- ASIA
- Mainland China
- Japan
- India
- Korea
- Taiwan
- Singapore

The previous figure shows the number of publications by country from 1993 to 2012 every five years.

Japan has slowed down; Taiwan, Singapore, Korea and India are slowly on the rise while Mainland China has grown rapidly.
If we connect publications with population, Taiwan has excellent performance.

Taiwan publishes 1,131 papers per million people, which is more than Korea, Japan and Mainland China, and even the US.

Between 2008 and 2012, publication growth rate was around 18.29%, much higher than its total birth rate of 1.21%.
PATENTS CITING PAPERS

Data from: USPTO; Web of Science
In Taiwan, the percentage of patents citing papers increased by 90% from 2001–2010, much more quickly than the global growth rate of 41%.

This suggests that academic papers have been useful in patent applications.
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<tr>
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<td>66,174/8</td>
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<td>28,618/17</td>
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</table>
SCI PAPERS PUBLISHED

- Taiwan’s publication in SCI has been U-shaped, declining after 2013 and then increasing again.

- In 2015, Taiwan published 26,715 SCI papers, ranking 21st in the world.

- USA was ranked 1st during these years.

- Manland China has had amazing publication growth and ranks 2nd globally.
<table>
<thead>
<tr>
<th>Location</th>
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<th>2013</th>
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<td>16,713/4</td>
<td>16,058/4</td>
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<tr>
<td>Germany</td>
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<td>13,367/5</td>
<td>14,521/5</td>
<td>15,207/5</td>
<td>14,732/5</td>
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<tr>
<td>Mianland China</td>
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<td>8,180/8</td>
<td>9,244/7</td>
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<td>8,319/7</td>
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<td>4,004/14</td>
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<td>3,833/16</td>
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</table>
SSCI Papers Published

- Taiwan’s publication in SSCI journals has varied.
- Publication peaked in 2012 with over 4,000 papers published. It has since dropped to less than 3,700.
- Taiwan’s rank has also decreased, dropping to 17th in 2015.
EI Papers Published in Taiwan

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<tr>
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<th>2013</th>
<th>2014</th>
<th>2015</th>
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<td>22,819</td>
<td>20,729</td>
<td>24,415</td>
<td>22,706</td>
<td>19,822</td>
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</table>

- EI paper publication in Taiwan has varied, peaking in 2013 with 24,415 articles and then dropping to less than 20,000 in 2015.
- Taiwan’s ranking has fallen to 14th, its worst performance in five years.
Taiwan’s Impact Factor

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<tbody>
<tr>
<td>参考计数</td>
<td>483,745</td>
<td>539,955</td>
<td>603,848</td>
<td>646,805</td>
<td>691,290</td>
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<td>影响因子</td>
<td>4.28</td>
<td>4.60</td>
<td>4.87</td>
<td>5.06</td>
<td>5.31</td>
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</table>

Reference count vs. Impact factor graph showing an increasing trend.
The impact factor of Taiwan increased from 4.28 in 2007–2011 to 5.31 in 2011–2015.

The reference count also increased from 483,745 to 691,290.
## QS Ranking of Taiwan’s Universities

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<th>2016</th>
<th>2017</th>
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<td>70</td>
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<td>National TsingHua University</td>
<td>199</td>
<td>167</td>
<td>155</td>
<td>151</td>
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<tr>
<td>National ChiaoTung University</td>
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<td>202</td>
<td>182</td>
<td>174</td>
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<tr>
<td>National Chengkung University</td>
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<td>232</td>
<td>224</td>
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<tr>
<td>National Taiwan University of Science and Technology</td>
<td>420</td>
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<td>260</td>
<td>243</td>
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<tr>
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<td>National TsingHua University</td>
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<td>Technology</td>
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### CWTS Leiden Ranking of Taiwan’s Universities

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<td>43</td>
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<td>National TsingHua University</td>
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<td>272</td>
<td>274</td>
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<td>National ChiaoTung University</td>
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<td>National Taiwan University of Science and Technology</td>
<td>474</td>
<td>371</td>
<td>455</td>
<td>473</td>
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</table>
**Rankings? The Winners Take All Effect**

- Tsinghua University of China is 24th
- NCCU’s QS Ranking is 701+

<table>
<thead>
<tr>
<th># Rank</th>
<th>University</th>
<th>Location</th>
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</thead>
<tbody>
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<td>701+</td>
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### QS Ranking in Education

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<td>151-200</td>
<td>National Chengchi University</td>
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<tr>
<td>151-200</td>
<td>North Carolina State University</td>
<td>USA</td>
<td></td>
</tr>
<tr>
<td>151-200</td>
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<td>UK</td>
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<td>151-200</td>
<td>Radboud University</td>
<td>Netherlands</td>
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<tr>
<td>151-200</td>
<td>San Diego State University</td>
<td>USA</td>
<td></td>
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<tr>
<td>151-200</td>
<td>Simon Fraser University</td>
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<tr>
<td>151-200</td>
<td>Tsinghua University</td>
<td>China</td>
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</table>
THE SSCI SYNDROME

University evaluation depended on Research performance in terms of *number of articles published in SCI, SSCI, EI and A&HCI indexed journals*, as well as *citation rates and associated impact factors*.

Evaluation has taken on *a highly quantitative dimension* since 2005.
LOCAL IMPACTS: RELEVANCE

- Local relevance of research called into question.
  - ‘Public intellectual’ role diminishing.
- Themes selected are ‘global’ for publication reasons.
  - ‘Global audience’ is, in effect, journal editors – ‘gatekeeper effect.’
- Publication in English less accessible for local audiences.
- English language writing ability now acts as proxy measure for academic merit in non-English-speaking academic communities.
Local Impacts: Gender Equity

- The new system of rewards based on journal publication has crippled the status of female faculty in Taiwan since 2005.
- Junior female faculty in social sciences and humanity encounter even more barriers in promotion and publication.
- More gender disparity among ‘elite’ universities.
NEW GENDER DISCREPANCY – ACADEMIC POSITIONS

- 162 colleges and universities in Taiwan, only 14 headed by female presidents (2016)

- Percentage of female faculty at universities or colleges only slowly increasing (2007, 34.14%; 2014, 35.21%)
CONCLUSIONS

- Unexpected consequences in academic culture
The winners take all effect...

- Who benefits from this global competition? (Science, business, and others with quantitative backgrounds that excel at paper publication.)
- More collaboration or competition internationally and nationally
- Latent animosity between academic fields (e.g., social sciences and hard sciences)
- Increased focus on quantity of papers over quality
- Decreased focus on meeting local needs
Thank you.

Questions and Comments:

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CHOU’S WORK


- 台灣教育怎麼辦？臺北：心理。
- 誰捉弄了台灣改？臺北：心理。