Innovation Policy for ASEAN from the Economic Perspective

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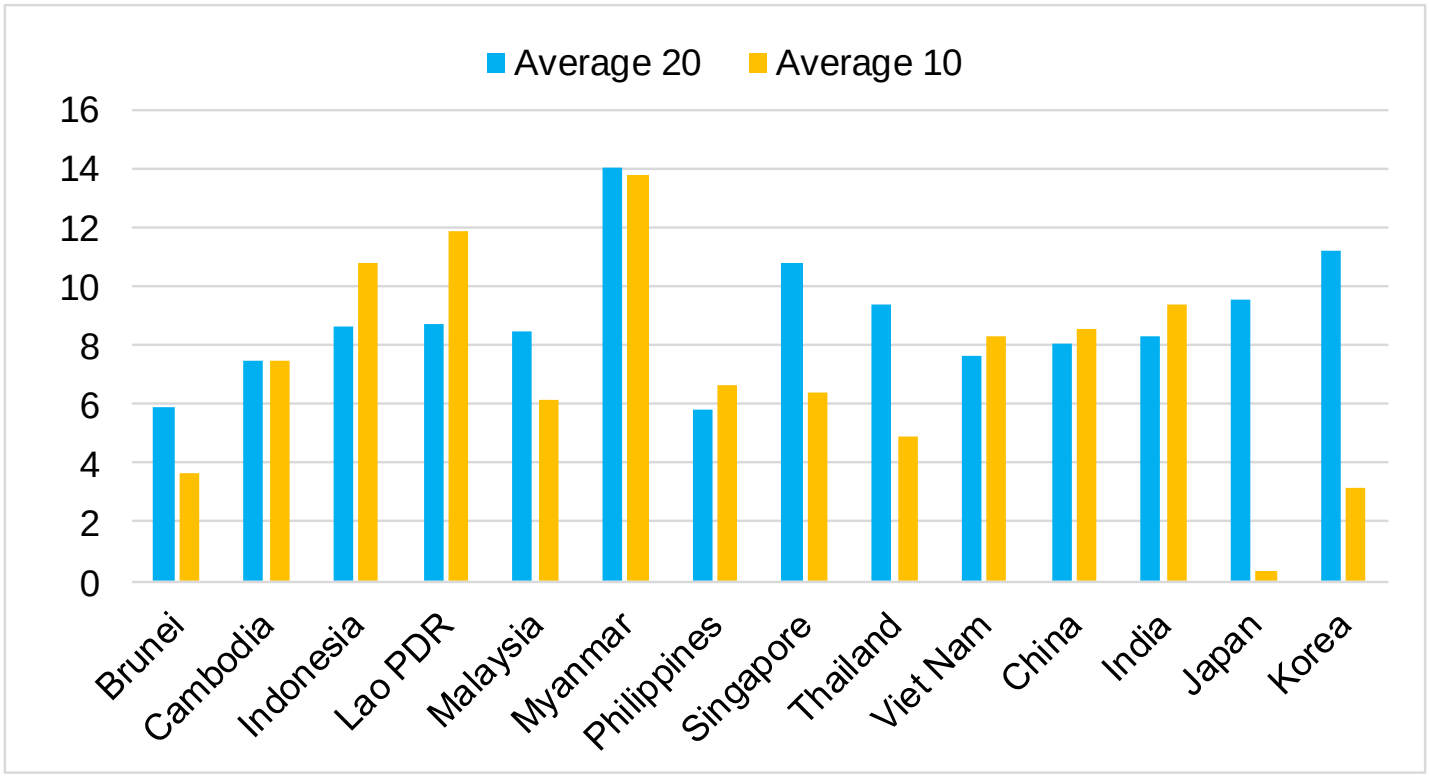
Middle-Income Trap?

Comparison of Real GDP Growth Rate (%)



Brunei = Brunei Darussalam, GDP = gross domestic product, Korea = Republic of Korea, Lao PDR = Lao People's Democratic Republic. Note: The table compares the average growth rate between the 'highest growth rate for 20 years' (Average 20) and 'recent 10-year growth rate between 2005 and 2014' (Average 10). The 20-year period is as follows for each country: Brunei Darussalam, 1989–2008; Cambodia, 1994–2013; Indonesia, 1972–1991; Lao PDR, 1995–2014; Malaysia, 1965–1984; Myanmar, 1965–1985; the Philippines, 1952–1971; Singapore, 1965–1985; Thailand, 1959–1978; Viet Nam, 1995–2014; China, 1992–2011; India, 1992–2012; Japan, 1951–1970; Republic of Korea, 1969–1988.

Source: University of Groningen, Groningen Growth and Development Centre, The Database, Penn World Table version 9.0.

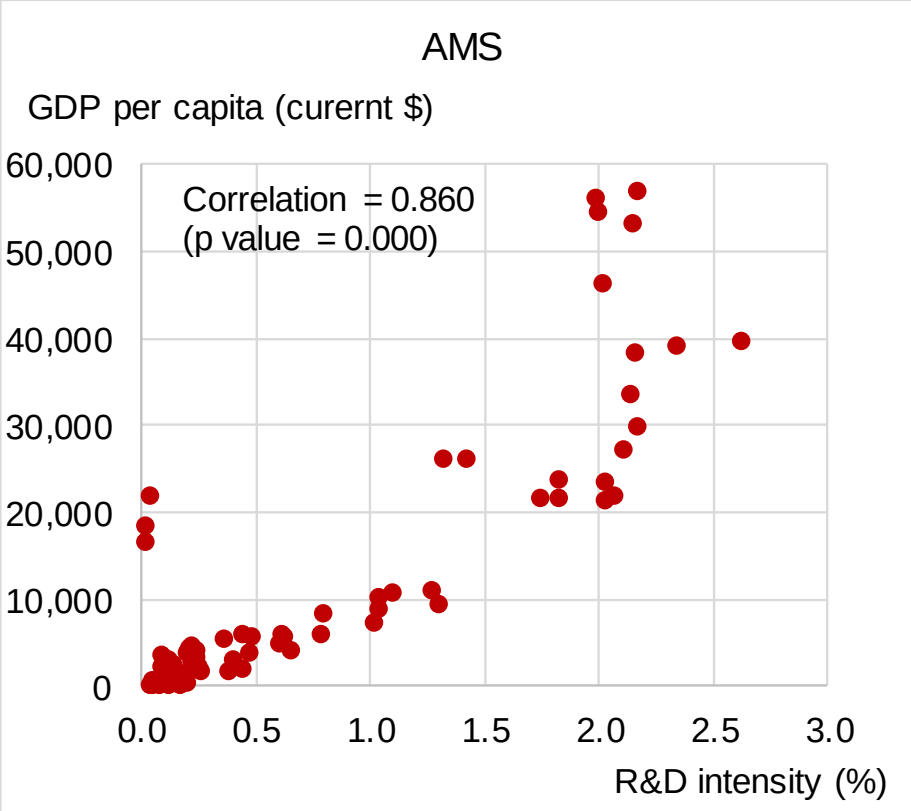
Current Status of Innovation in ASEAN

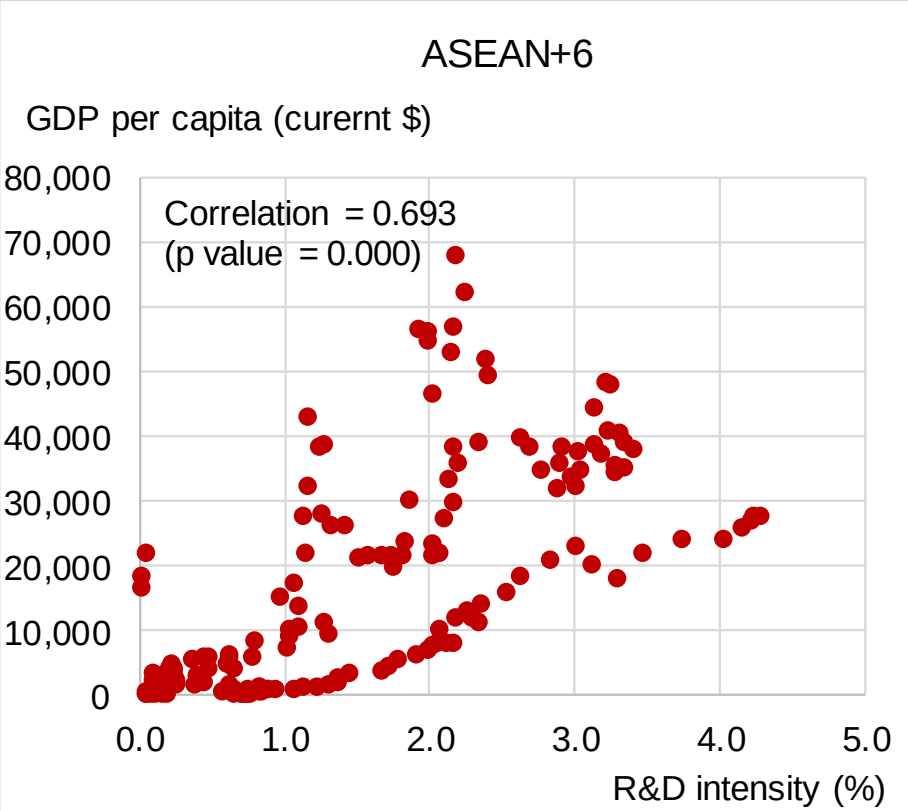
Gross Domestic Expenditure on R&D per GDP (%)

Country	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Brunei	..	..	..	..	..	..	..	..	..	..	..	..
Cambodia	..	..	..	..	..	..	..	..	..	..	0.12	..
Indonesia	..	..	..	..	0.08	..	..	..	0.08	..	..	..
Lao PDR	..	..	..	..	..	..	..	..	..	..	..	..
Malaysia	..	0.61	..	0.79	1.01	1.04	1.03	1.09	..	1.26	1.30	..
Myanmar	..	..	..	..	..	..	..	..	..	..	..	..
Philippines	0.11	..	0.11	..	0.11	..	0.12	..	0.14	..	..	..
Singapore	2.16	2.13	2.34	2.62	2.16	2.01	2.15	1.99	1.99	2.16	..	..
Thailand	0.22	0.23	0.20	0.20	0.23	..	0.36	..	0.44	0.48	0.62	0.78
Viet Nam	..	..	..	..	..	..	0.19	..	0.37	..	0.44	..
China	1.31	1.37	1.37	1.44	1.66	1.71	1.78	1.91	1.99	2.02	2.06	2.11
India	0.84	0.82	0.82	0.87	0.84	0.82	0.83	..	..	..	0.62	..
Japan	3.18	3.28	3.34	3.34	3.23	3.14	3.24	3.21	3.31	3.40	3.28	3.14
Korea	2.63	2.83	3.00	3.12	3.29	3.47	3.74	4.03	4.15	4.29	4.22	4.23
Australia	..	2.19	..	2.41	..	2.38	2.24	..	2.18	..	1.92	..
New Zealand	1.12	..	1.16	..	1.25	..	1.23	..	1.15	..	1.26	..

Source: UNESCO Institute for Statistics, Data for the Sustainable Development Goals.

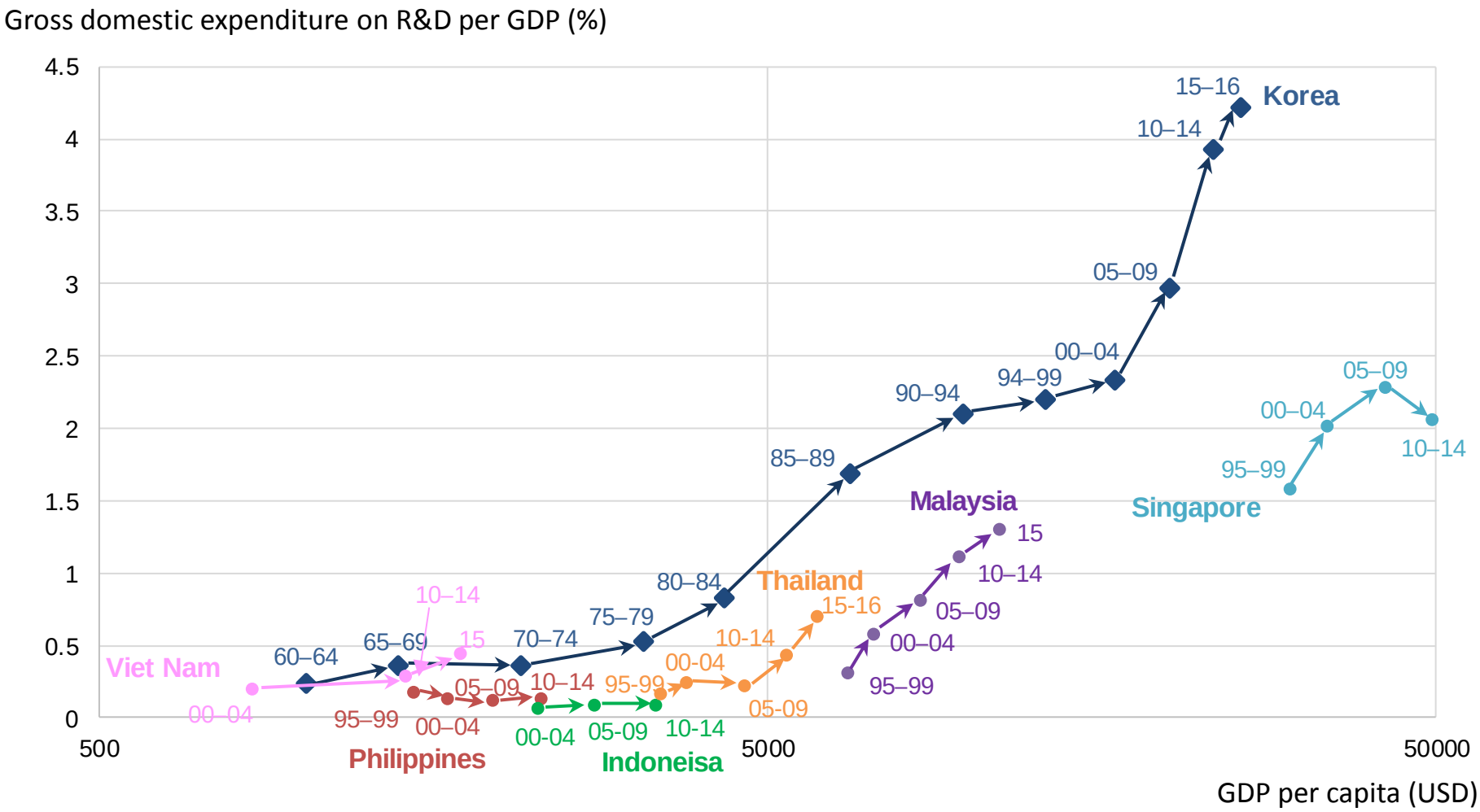
R&D Intensity and GDP per Capita





GDP per capita: left axis (current USD), R&D intensity, right axis (%). AMS = ASEAN member states, ASEAN + 6 = AMS plus Australia, China, India, Japan, Korea, and New Zealand. GDP = gross domestic product.
Source: UNESCO Institute for Statistics, Data for the Sustainable Development Goals; World Bank, World Development Indicators

R&D Intensity and GDP per Capita in East Asian Countries



Source: UNESCO Institute for Statistics, Data for the Sustainable Development Goals; World Bank, World Development Indicators

Government Initiatives Matter

Responsible Government Organization in Innovation Policy

- Important! **Give responsibility for innovation policy** to preferably a single body in a government organization.
- This government body should hold **unified authority** with strong leadership under government control to lead and coordinate innovation policies developed across various departments.
- Example of **Japan's national innovation system**:
  - In 2001, Japan set up the Council for Science, Technology and Innovation (CSTI), with great responsibility for setting and evaluating STI policy, under the Cabinet Office to strengthen the coordination function within the government.
  - The CSTI is attended by relevant ministers and professionals from academia and the private sector and chaired by the prime minister.

Policy Recommendations

1. Encourage the private sector (including both domestic and foreign firms) to invest more in R&D and innovative activities

- How to incentivize? Provide subsidy and tax credits for R&D and human resources development, grants for targeted innovative activities, patent granting, and others.
- Promote **collaborative R&D between domestic and foreign firms** in industrial clusters which accelerate **technology transfer**.
- Implement strategic measures to ensure **competitive and fair markets** and **ease of doing business**.
  - Good regulatory practices
  - Harmonization of standards and regulations

2. Elaborate on a conducive innovation ecosystem

- Create specialized public research institutes with the primary mission of conducting providing technical support related to the **commercialization of innovation achievements**.
  - e.g. Exploit Technologies Pte Limited of A*STARS in Singapore.
- Nurture **university-industry collaboration** to enhance university-launched innovations and to disseminate and commercialize them for private sectors
  - e.g. Introduce “Technology License Organization Law” and “Bayh-Dole Act”.
- Organize local public technology centers in industrial clusters, as **innovation intermediaries** to help private manufacturing firms (particularly SMEs) innovate.
  - *Kosetsushi* in Japan: The main roles are to (i) diffuse technological knowledge through testing, technical consultation, joint research, and seminars for engineering education; (ii) license patents, mainly to local SMEs; and (iii) act as network mediators connecting SMEs with external sources of knowledge (Fukugawa and Goto, 2016). https://voxeu.org/article/japan-s-local-public-technology-centres-and-sme-innovation

3. Accelerate services trade liberalization

- Observation: The source of innovations is moved to **service sector** due to digital technology.
- Consider further **eliminating services trade restrictions** in the ASEAN Framework Agreement on Services and the ASEAN Trade in Services Agreement.
- Enhance the **free movement of professional workers** (especially with STEM) in the mutual recognition agreements to work overseas.
  - Immigrants with STEM expertise have a positive impact on productivity and innovation through transferring advanced knowledge.
  - The study shows that a country accepting more business travelers from developed countries such as the United States significantly increases patent granting (Hovhannisyan and Keller, 2015).
  - Facilitate the smooth movement of business people across borders by accelerating open-sky agreements and easing immigration visa acquisition.

ERIA Publication

For more details, please visit the ERIA website.
http://www.eria.org/

ERIA innovation study:
Ambashi, M. (ed.) (2018), *Innovation Policy in ASEAN*.
http://www.eria.org/research/innovation-policy-in-asean/

Fukugawa, N., M. Ambashi, and Y. Suhud (2018), "Division of Labour Amongst Innovation Intermediaries in Agricultural Innovation Systems: The Case of Indonesia" ERIA Discussion Paper
http://www.eria.org/publications/division-of-labour-amongst-innovation-intermediaries-in-agricultural-innovation-systems-the-case-of-indonesia/

Ambashi, M (2019). "Government Initiatives Matter for Innovation in ASEAN", ERIA Policy Brief.
http://www.eria.org/publications/government-initiatives-matter-for-innovation-in-asean/