



# Invited Article: Contribution of Universal Health Coverage to Thailand 4.0

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## Abstract

Thailand 4.0 is a new development model for the country introduced by the General Prayut Chan-o-cha's government. Under this concept, the present-day Thailand is called Thailand 3.0, characterized by heavy industry and export-oriented economy. Unfortunately, Thailand 3.0 has been caught in three traps, namely middle income trap, inequality trap, and imbalance trap. To escape from these traps, the most tangible proposal so far is that Thailand 4.0 will be led by five industrial clusters based on innovation and service sector. In addition to promote these industrial clusters, this article showed that an investment in health human capital is another key investment for government to achieve Thailand 4.0. Several studies demonstrate a positive association between health human capital and the national income level. Moreover, the investment in health human capital evidently reduces inequalities. Therefore, the health human capital investment can help the country escape both middle income trap and inequality trap. The Universal Health Coverage (UHC) policy is arguably the most crucial way for government to invest in health human capital. UHC is endorsed and promoted by the World Health Organization (WHO), the World Bank, and the United Nations (UN). Achieving UHC is Target 3.8 of the UN Sustainable Development Goals (SDGs). Although Thailand has implemented UHC since 2002, the current government, the one which proposes the Thailand 4.0 model, seems to regard UHC as the fiscal burden rather than a key investment to achieve Thailand 4.0. This article proposed further that, to accelerate the escape from the inequality trap, the government should support the decentralization of UHC through two existing mechanisms, i.e., district health system and community health fund.

**Keywords:** Thailand 4.0, Human capital, Health, Universal health coverage, Public policy

## Thailand 4.0

Thailand 4.0 is a new development model for the country introduced by the General Prayut Chan-o-cha's government. It has been publicly launched about the end of 2015. Thailand is portrayed according to the model as follows:

Thailand 1.0: Agriculture-oriented economy

Thailand 2.0: Light industry for domestic consumption

Thailand 3.0: Heavy industry and export-oriented economy

Thailand 4.0: Innovation- and service-oriented economy

This model refers to the present-day Thailand as Thailand 3.0, which is characterized by heavy industry and export-oriented economy. Thailand 3.0 has been caught in three traps—namely, middle income trap, inequality trap, and imbalance trap. The goal of Thailand 4.0 is therefore to escape from these traps (Ministry of Industry, 2016; The Secretariat of the House of Representatives, 2016).

The most tangible proposal so far is that Thailand 4.0 will be led by five industrial clusters including biotechnology (food and agriculture), biomedical science (health and wellness), mechatronics (smart devices and robotics), embedded technology (internet of things), and high-value services (creativity and culture). In addition, it is indicated that the development under Thailand 4.0 will be participatory and environmentally friendly. However, the proposal for these are less clear (Ministry of Industry, 2016).

Although Thailand 4.0 is supposed to be free from all three traps, the way the issue is framed as well as the proposed solutions is mainly related to the middle income trap; proposals for other two traps are barely mentioned. It might be the influence of the United Nations Sustainable Development Goals (SDGs) that puts pressure on the government to include inequality and imbalance in development into the model without deliberate considerations. The middle income, inequality, and imbalance traps are more or less equivalent to economic, social, and environmental dimensions of the SDGs, respectively (Economic & Council, 2016).

## Escape from middle income trap and health human capital

To escape from the middle income trap is to become a high income country. According to the World Bank, high income country is defined as a country with gross national income (GNI) per capita equal to 12,476 USD or more in 2015 (The World Bank, 2017b). In 2015, the per capita GNI for Thailand was 5,720 USD (The World Bank, 2017a). Thailand needs to approximately double its income to escape from this trap.

To raise a national income level, a key investment is indeed an investment in human capital (Krugman & Wells, 2012; Schultz, 1961). Human capital consists of two major dimensions: education and health. This article focuses on the health dimension of human capital and demonstrates its contribution to national income, then Thailand 4.0.

In the early days, studies concerning effects of human capital on economic growth focused primarily on education (Bloom et al., 2001; Knowles & Owen, 1995). Thus positive associations between education and economic growth have been demonstrated in several studies (Barro, 1998; Cohen & Soto, 2007). Until recently, a relationship between health human capital and economic growth has been explored.

Howitt (2005) applied the Schumpeterian growth theory to explain the effect of population health on long-run economic growth. Healthier population exerts a positive effect on economic growth through six channels: increased productive efficiency, increased life expectancy, increased learning capacity, increased creativity, increased coping skill, and decreased inequality (Howitt, 2005). According to this theoretical finding, an improvement in health human capital could facilitate Thailand to escape from both middle income and inequality traps.

Several pieces of empirical evidence support the theoretical finding. Knowles and Owen (1995) used life expectancy as a variable representing health human capital. They found a positive and significant effect of life expectancy on per capita national income. In this study, the effect of health on

national income was even stronger than the effect of education (Knowles & Owen, 1995). An analysis of data from 43 countries—including 21 African countries and 22 members of Organization for Economic Co-operation and Development (OECD) showed a positive association between health human capital and per capita national income. In addition, a positive relationship between investment in health human capital and national income was demonstrated. This study estimated that improvement in health was contributed to 22% of economic growth in African countries and 30% in OECD countries (Gyimah-Brempong & Wilson, 2004).

A study reported a positive association between population health and gross domestic product (GDP). This study estimated that a one-year increase in life expectancy of population contributes to 4% increase in GDP (Bloom et al., 2001). Hence, investment in health human capital is likely to pay for itself. Another study found that a reduction in mortality raising population levels of education and consumption. The authors argued that an increase in life expectancy, due to decreased mortality, makes education more valuable since a person has a longer expected period to receive benefits from education (Kalemli-Ozcan et al., 2000).

A study from Thailand compared concentration indices (an indicator for inequality) before and after the implementation of the universal health coverage (UHC) policy, which is a form of investment in health human capital. After the UHC implementation, a utilization of outpatient services was more equitable at sub-district, district, and provincial levels. For inpatient services, it was significantly more equitable at the provincial level (Limwattananon et al., 2011).

In summary, the positive effect of health human capital on national income level has been demonstrated in several studies. Improved health also has a positive effect on education, another dimension of human capital. Furthermore, an improvement in health human capital also contributes to a decrease in inequality. Hence, investment in health human capital potentially helps the country to escape from at least two out of three traps mentioned in the Thailand 4.0 model.

## Universal health coverage (UHC) policy

The UHC policy is a form of public investment in health human capital. It has been promoted and endorsed by the World Health Organization (WHO), the World Bank, and the United Nations (The World Bank, 2016; World Health Organization, 2016). UHC has been set as the Target 3.8 of the SDGs—“Achieve universal health coverage, including financial risk protection, access to quality essential healthcare services and access to safe, effective, quality and affordable essential medicines and vaccines for all”—to be achieved in 2030 (Economic & Council, 2016).

The UHC policy has been fully implemented in Thailand since 2002. Accordingly, Thai UHC has been praised as a successful case study for middle income countries (Tangcharoensathien et al., 2010; Tangcharoensathien et al., 2007). In this regard, Thailand has achieved the Target 3.8 of the SDGs even before the UN sets up the SDGs.

According to the current proposal for Thailand 4.0, health-related investment is narrowly focused on biomedical technology as an industrial cluster. At the same time, the government regards UHC, an internationally-endorsed investment in health human capital, as a fiscal burden (Hfocus, 2015; Thai Government, 2015). Thai authorities might be unaware of the positive effects of investment in health human capital on national income and inequality (Howitt, 2005; World Health Organization, 2016).

## Community health system under UHC

With respect to the inequality trap, aside from having UHC at the national level, promoting decentralization of health system could accelerate a decrease in health inequality. With respect to the decentralization, the Ministry of Public Health (MoPH)—a main healthcare provider in Thai health system—employs the district health system policy (Ministry of Public Health, 2014). The National Health Security Office (NHSO)—a public body acting as a third-party payer under UHC—has set

up community health funds since 2002 in cooperation with MoPH and the Department of Local Administration, Ministry of Interior (National Health Security Office, 2014). These two existing mechanisms could strengthen community health system.

In practice, a number of challenges make these mechanisms underutilized. For instance, local administration organizations—a key player at the community level—has lack of understanding about health and healthcare; management tools for utilizing community funds are lacking; and different rules for reimbursement (one used by NBSO, another used by Ministry of Interior), which are sometimes conflicting, have been simultaneously applied for community health funds makes it difficult to use the funds (National Health Security Office, 2014). The government should address these challenges to support those two existing mechanisms. This will strengthen community health system and accelerate the escape from the inequality trap.

## Conclusions

In the Thailand 4.0 model, the government refers to three traps to be escaped from. In practice, the government only has solid proposal for the middle income trap (i.e., the five industrial clusters) and leaves behind other two.

This article showed that investment in health human capital is a key investment, aside from investment in industrial clusters, for government to achieve Thailand 4.0. Theoretical and empirical findings showed positive effects of health human capital on national income and inequality. Hence, investment in health human capital could help the country escaping both middle income and inequality traps. The Universal Health Coverage (UHC) policy is a crucial way for government to invest in health human capital. To accelerate the escape from the inequality trap, the government should support the decentralization of health system through two existing mechanisms, i.e., district health system and community health fund.

UHC should not be regarded as fiscal burden since it is likely to pay itself off due to its effect on national income. UHC could have a substantial contribution to the transition of Thailand 3.0 into Thailand 4.0.

## References

Barro, R. J. 1998. **Human capital and growth in cross-country regressions**. Paper presented at the Economic Growth–Literature Surveys. Downloadable at <http://hassler-j.iies.su.se/conferences/papers/barro.pdf> (January 18, 2006).

Bloom, D. E. et al. 2001. **The effect of health on economic growth: theory and evidence**.

Cohen, D. & Soto, M. 2007. **Growth and human capital: good data, good results**. *Journal of Economic Growth*. 12(1); 51–76.

Economic, U. & Council, S. 2016. **Report of the inter-agency and expert group on sustainable development goal indicators**.

Gyimah-Brempong, K. & Wilson, M. 2004. **Health human capital and economic growth in Sub-Saharan African and OECD countries**. *The Quarterly Review of Economics and Finance*. 44(2); 296–320.

Hfocus. (2015). **14 years of UHC: Rights or Aid**. Retrieved from <https://www.hfocus.org/content/2015/05/9924>. (in Thai).

Howitt, P. 2005. **Health, human capital and economic growth: A schumpeterian perspective**. Health and economic growth: Findings and policy implications. 19–40.

Kalemli-Ozcan, S. et al. 2000. **Mortality decline, human capital investment, and economic growth**. *Journal of Development Economics*. 62(1); 1–23.

Knowles, S. & Owen, P. D. 1995. **Health capital and cross-country variation in income per capita in the Mankiw–Romer–Weil model**. *Economics Letters*. 48(1); 99–106.

Krugman, P. & Wells, R. 2012. **Economics (3rd ed.)**. Worth Publishers.

Limwattananon, S. et al. 2011. **The equity impact of Universal Coverage: health care finance, catastrophic health expenditure, utilization and government subsidies in Thailand**. Consortium for Research on Equitable Health Systems, Ministry of Public Health, <http://r4d.dfid.gov.uk/Output/188980>.

Ministry of Industry. 2016. **20-year Strategies for Industrial Development under Thailand 4.0 (2017–2036)**. (in Thai).

Ministry of Public Health. 2014. **Implementation of District Health System in Thailand**. (in Thai).

National Health Security Office. 2014. **Manual for community health funds (revised 2014)**. Sahamitr Printing and Publishing. Bangkok. (in Thai).

Schultz, T. W. 1961. **Investment in human capital**. *The American Economic Review*. 1–17.

Tangcharoensathien, V. et al. 2007. **Achieving universal coverage in Thailand: what lessons do we learn**. Social Science Research Network Working Paper.

Tangcharoensathien, V. et al. 2010. **Thailand health financing review 2010**.

Thai Government. 2015. **Thai News: National Broadcast by General Prayut Chan-o-cha, Prime Minister (24th April 2015)**. Retrieved from <http://www.thaiembassy.org/islamabad/th/news/>. (in Thai).

The Secretariat of the House of Representatives. 2016. **Thailand 4.0**. (in Thai).

The World Bank. 2016. **Universal Health Coverage: Overview**. Retrieved from <http://www.worldbank.org/en/topic/universalhealth-coverage/overview#1>.

The World Bank. 2017a. **DataBank: Thailand**. <http://data.worldbank.org/country/thailand>.

The World Bank. 2017b. **World Bank Country and Lending Groups**. Retrieved from <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>.

World Health Organization. 2016. **Universal health coverage (UHC)**. Retrieved from <http://www.who.int/mediacentre/factsheets/fs395/en/>.