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Convergence in Income Inequality and Growth under Public Investment in Human Capital:
The Case of Thailand

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Abstract

In this paper, I examine convergence in income inequality and economic growth under two governmental regimes on human capital where the first one has only education subsidy and the second one has education subsidy and research & development investment. This study using endogenous growth framework with human capital and technological progress hypothesized that, under education and research & development investment, human capital and technological progress can produce a higher global effect to the country in the long run. This will result in the convergence in income where poor dynasty/regions grow faster than rich dynasty/regions in the long run. From model simulation, I found that, in the poor economy, when adding a research & development investment in addition to education subsidy, convergence in income and long-run economic growth perform better than another scenario which has only education subsidy. Empirically, this pattern has been validated on Thailand's provincial level where conditional convergence of growth rate per capita among these provinces tends to converge faster between the periods of 2000 – 2009.

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1. Introduction

During the past two decades of Thailand National Development Plan evolution, the concerns of issues in human capital development and long-run country economic growth are higher when the topics of income inequality and competitiveness are written down by numerous researchers nowadays as the country's major economic structural problems.

While the situation of income inequality looked severed in the mid ninety century as the historic world indicators shown, there were numerous attempts to restructure the education system in order to provide equal chance of education for all children which this embodied human capital could help increase their lifetime income and improve the standards of living for the people in the country. According to the Ministry of

Education, the system itself failed to improve the quality of provided education as the dropout from school rate was about 50 per cent and proficiency tests scores were below the expected standards although education budget was spent aggressively compared to other branches of development.

For growth development, Thai economic growth depends largely on investments which consist of domestic and foreign direct investment. According to the data cited from the Thailand Bureau of Budget and Board of Investment, domestic investment budget has been declined and decentralized since the beginning of the year 2000 while foreign direct investment increased from promotions over the same period of time. Growth was stimulated from funds outside its economy. In the long-run economy, this scenario looked ambiguous when the labour force survey over the year 2000 to 2009 showed that most labour forces are concentrated in low-income jobs and they are not well educated as represented in worsen science & technology competitiveness indicators, according to data from the National Research Council of Thailand and The National Statistics Office. This also resulted in higher income for the highly educated workers that can engage in a proper industry while it leaves the others to be involuntarily poor. This resulted in a higher income inequality as was represented in the Gini coefficient by the end of year 2009.

For provincial level, it depicts the same picture as in the individual aspect. There are many provinces in the Central region and some provinces in the other regions that received an advantage of capitals agglomeration and grew rapidly over this period, while many rural provinces in the Northern, Northeastern and Southern parts have been left undeveloped and still remain poor. In some developing countries, many countries in this region and China boost up their education and science & development budget in the late twentieth century. This questioned Thai policy makers about whether or not Thailand should invest more on research & development in addition to education policies and these policies will give us a convergence in income and growth.

2. Methodology

2.1. Endogenous Growth Model with Human Capital Accumulation and Technological Progress

The model is closely developed to the works of Galor and Tsiddon, 1997 and Schäper, 2003. The model presented here is a small open overlapping-generations economy (OLG) model which assuming basic classical economic assumptions as following; perfect market competitions, sticky physical rental price, constant population size, heterogeneous human capital and income in initial stage, all transactions occur at the end of each period, and externality effect of parental human capital on human capital accumulation; income distribution; and growth.

2.1.1. Production

Production technology is assumed constant return with endogenous technological progress, neoclassical and stationary across time. In each period, a good has been produced homogenously, which can be consumed, invested, or saved.

$$Y_t = (A_t L_t)^{1-\kappa-\eta} H_t^\eta K_t^\kappa \quad (1)$$

Where Y_t is the output produced at time t as the function of the amounts of labour and human and physical capital employed at time t , L_t , H_t , and K_t , corresponds to the technology, A_t . The small letters denote to per effective unit of labour. The parameter η and κ capture the partial production elasticity of each input. This function also satisfied the Inada conditions. Moreover, physical capital K_t depreciates after each period.

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