

論 文 概 評

氏 名	KETSAWA WANWIWAT		
学位の種類	博士（経済学）		
学位記番号	博人社甲第 25 号		
学位授与年月日	令和 2 年 9 月 23 日		
学位授与の要件	学位規則第 3 条第 3 項該当		
学位論文題目	Roles of Human Capital Growth on Industrial Development in Thailand		
論文審査委員	委員長	長島	正治
	委員	田口	博之
	委員	広田	幸紀
	委員	Kitti LIMSKUL	

論文の内容の要旨

The epoch of economic development of Thailand in the past has relied much on physical capital investments and abundant cheap labors to support the labor-intensive industry. However, by the Asian Financial Crisis in 1997, the financial system and capital accumulation processes collapsed suddenly. Thailand lost the ability to build and support the capital-intensive industries. Although Thailand had to advance its production, she then turned to delay the necessary investment, and eventually replaced it with cheap and abundant of low skilled labors from neighboring countries. The investment in human capital seems to be improved since it has been reported by the World Bank (2015) that there was the rising of the average year of schoolings and the mean wages of labor. However, low academic achievements passed negative consequences for students' future labor-market and income prospects. Hence, the author hypothesized that educational investment intensity and transition of labor in term of quality improvement from low-education to higher education in Thailand was inactive to support advanced industries and to yield higher growth. The objectives and scopes of this dissertation are to comprehensibly investigate the growth determinants by human capital along with the counterfactual scenarios of human capital growth and the potential growth path of Thai economy throughout 1980-2010, and to distinctly examine the role of human capital and the sources of growth demand-supply side integration within the Macroeconomic input-output framework in Thailand during 1980-2010.

The dissertation consists of five chapters and four appendices.

Chapter 1 is an introduction part of the dissertation. The author states the objectives and scopes of

the study here. According to Chapter 1, the first objective is to comprehensively investigate the growth determinants by human capital along with the counterfactual scenarios of human capital growth and the potential growth path of Thai economy throughout 1980-2010. The second objective is to distinctly examine the role of human capital and the sources of growth within the macroeconomic input-output framework in Thailand during 1980-2010. The third objective is to deliberately provide empirical evidences, analyses, and policy intelligences to support academic researchers, practitioners, policy makers and government.

Chapter 2 reviews preceding studies related to this study. At first, literatures on the industrial development in Thailand in terms of inter-industry analyses are introduced. Literatures on the sources of growth and structural change from the demand side are followed. The biggest part of chapter 2 is devoted to review of literatures in the field of human capital and economic growth. Continuously, related literatures on East Asian economies and Thailand are referred at the end of the chapter.

Chapter 3 aims to quantitatively examine the contribution of education investment intensity on economic growth of Thailand. In this chapter, it is assumed that human capital stock can be accumulated from the investment on education merely whereas ignoring the investment on health, training and others. On this assumption, it is hypothesized that education investment intensity and transition of labor in terms of quality improvement from low education to higher education in Thailand was too slow to support advanced industries and produce higher economic growth. This chapter applies the human-capital-augmented Solow growth model to investigate the contribution of human capital in Thailand during 1980-2010. Furthermore, in this study, the author restricts focus to human capital investment in the form of education. As a result, it is confirmed that human capital growth positively and significantly raised per-capita income and economic development in Thailand during 1980-2010. Nevertheless, it also comes to be clear that the rate of return to the human capital investment was relatively small compared to the rate of return labor and capital input.

Besides, the author benchmarks the development of Thailand with forerunner countries such as OECD and more developed countries in East Asia. In this comparison, the panel data cross-countries analysis with pooled regression methodology is applied to investigate the relationship between education which is represented by the mean years of schooling and the epoch of economic advancement. This comparison confirms in case of Thailand that, assumed at the equilibrium, growth of per-capita income is significantly positive with the growth of mean years of schooling.

Chapter 4 aims to integrate demand-supply of human capital and economic growth by using a macroeconomic input-output framework to estimate roles of human capital in the manufacturing sectors in Thailand. Firstly, the author reviews the industrial development in Thailand during 1980-2010 by investigating the equilibrium in product market using the input-output framework. After that, the author applies the 'Inter-Industry' relationship under the Input-Output tables' framework to estimate the demand for labor and human capital of Thailand 1980-2010. Since then, the author analyzes the partial equilibrium of demand with the supply of human capital during the historical path of Thailand.

After establishing the baseline path for the key variables, the effect of the counterfactual scenario is analyzed. Real output in constant price of 2000 of all key industries respond to the shock by a gradual increase from the baseline since 1975. Heavy manufacturing and services industries respond significantly and their real outputs rise sharply from the baseline throughout the historical path. Real average wages of all industries, especially light, heavy manufacturing and services clearly respond to the disturbance of human capital accumulation. On the other hand, real wages of labor in agricultures, light and heavy manufacturing are declined. However, real wages of services sectors increase.

The above result can imply that employment of educated and skilled labor has strongly affected income growth and industrial development. Services and heavy manufacturing sectors which have employed moderate and high level educated and skilled workers extremely contributed to industrial growth in Thailand. Average income of labor in the market would be adjusted and converted to the equilibrium level. The human capital or quality of labor has been assumed more important in Thailand during the aged society and labor supply scarcity. Thus, the implication of human capital growth should not be ignored in terms of expanding the sectoral growth, for example, improvement in quality of education, skills development and training. However, it should be noted that the resources enhancement on human capital, quality of education system, skills development and training practices and other factors for stimulating economic growth have not been accessed.

Chapter 5 is the final chapter of this dissertation and conclusions. In this chapter, the author describes the conclusion of each chapter again and derives policy implications as follows. Firstly, the author insists that Thai government should provide to increase the stock of human capital, and upgrade worker's productivity through additional years of secondary or tertiary education and training with capability to be able to handle more advance equipment and production technologies. Secondly, Thai government should find a direct policy to improve the quality of education rather than just the number of student's head passing through the same education system in the short term. Related essential factors such as quality of schools, teachers, teaching materials, accessibilities and education development policy and budget allocation are also the decisive determinants of human capital growth that needed weight of further research evidences.

論文審査の結果の要旨

The final examination was held by using Zoom system connecting Tokyo, Yokohama, Fukuoka and Bangkok on 18th July 2020. In the final examination, the following suggestions and comments including those for the future research works were pointed out.

First, a question about simultaneity in the model and estimation in Chapter 4 is raised. Concretely, labor demand function is not proper, and it might be contradicted with the conceptual framework. If the system is a general equilibrium, endogenous variables of the system must be

solved simultaneously. Therefore, in Chapter 4, the labor market and goods market must be solved simultaneously, so that there could be two simultaneous and unique solutions in the system. This can be either numerical or graphical exposition for the future research works. And the author should add more descriptive analysis and stories on this aspect.

Second, there is a suggestion on the policy implications. Though the author derives two policy implications in Chapter 5 as a result of the whole analysis, these policy implications are slight and ambiguous, and so the author should present concrete implications and add more significant and meaningful recommendations.

Third, regarding the counterfactual analyses in Chapter 3 and 4, two questions are raised as follows. It seems to be impossible to realize that suboptimal mean years of schooling is 17 years. What should be the rational policies to achieve this sub-optimality? Furthermore, the changes in real wages for agriculture, light and heavy manufacturing turn negative, whereas the results of the changes in real outputs for all industries are positive. What should be the logical interpretation on this matter?

Although there has been much room for improvements, the dissertation is considered to have a lot of contributions to the existing literature on the roles of human capital for economic development in Thailand. Through comprehensive considerations, consequently, the committee unanimously agreed that the dissertation meets the requirement for the Doctorate's degree.