

## 論 文 概 評

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学位の種類	博士（経済学）
学位記番号	博人社甲 16 号
学位授与年月日	令和元年 9 月 20 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	Macroeconomic Management for Sustainable Development in the Selected Resource-rich ASEAN Economies: Lessons from experienced countries to Lao PDR
論文審査委員	委員長 田口博之 委 員 伊藤修 委 員 広田幸紀 委 員 長島正治

### 論文の内容の要旨

This dissertation aimed to examine the applicability of the resource curse hypothesis focusing on the selected resource-rich ASEAN (the Association of Southeast Asian Nations) economies by using a vector auto-regression (VAR) model as a quantitative analytical method.

The backgrounds of the dissertation was summarized as follows. The economies of ASEAN have been a center of economic growth in Asia as well as in the world for the past decades. The annual growth rate of ASEAN economies recorded 5.0 percent on average during the period from 1990 to 2016, while those of Asian and the world economies showed 4.2 and 2.7 percent, respectively. The ASEAN, at the same time, contains a variety of economies with different stages of development. According to the World Bank Analytical Classifications in 2016, Brunei and Singapore are classified into “High income”; Malaysia and Thailand into “Upper middle income”; Cambodia, Indonesia, Lao PDR, Myanmar, Philippines and Vietnam into “Lower middle income”. Among the middle-income economies, Malaysia, Thailand, Indonesia, and the Philippines have become middle incomers earlier than Cambodia, Lao PDR, Myanmar, and Vietnam, and so the former group is called “forerunners” while the latter is called “latecomers.”

The heterogeneity in the ASEAN economies is also found from the perspectives of their abundance of natural resources and industrial structures. The contribution of resource sector in each ASEAN economy by the GDP share of mining and utility sectors

indicated much difference in the GDP share of resource sector from Brunei (43.5%) to Singapore (1.5%). Focusing on the middle-income economies that have the resource contribution to their GDP by around 10 to 20 percent: Indonesia, Lao PDR, Malaysia, and Myanmar, their industrial structures in 2015 could be compared with those in 1980 as follows. The forerunners, Malaysia and Indonesia, reduced the GDP share of mining and utility sectors, and instead raised that of the manufacturing sector. In particular, Indonesia now has the larger share in manufacturing than in mining and utility sector, though she previously had a dominant share of mining and utility as an oil-producing country. The latecomers, Lao PDR and Myanmar, on the other hand, raised their shares of mining and utility as well as their manufacturing sector's shares. The critical question is, then, in what way the industrial structure should be designed in the future for the latecomers who are expected to sustain their economic growth, in other words, whether the latecomers should continue to depend heavily on the resource sector or transform their industrial structures towards manufacturing-oriented ones just like the cases of forerunners of Malaysia and Indonesia.

From a theoretical perspective, this issue could be discussed in the context of the "resource curse" hypothesis initially proposed by Auty (1993): resource-rich countries tend to grow more slowly than resource-poor countries. The logic of this hypothesis is a "crowding-out", following Sachs and Warner (2001): natural resources crowd-out activity  $x$ ; activity  $x$  drives growth; therefore, natural resources harm growth. As there is a diversity of views regarding what drives growth, a similar diversity of views could be discussed on the natural resource question. As far as purely economic issues are concerned, however, the leading explanations could be summarized into two kinds of crowding-out logics as follows. One logic is that natural resources crowd-out manufacturing activities from a sectoral perspective, which has been often referred to as the applicability of the "Dutch Disease". The other logic is that natural resources crowd-out savings and investment from an intertemporal perspective, which has been argued in the context of capital accumulation such as the Hartwick rule.

Under these backgrounds, this dissertation targeted the four middle-income economies for the analytical samples, in which the GDP share of resource sector accounts for around 10 to 20 percent in 2015: Malaysia and Indonesia as the forerunners, and Lao PDR and Myanmar as the latecomers. There is a contrast in the trends in their industrial structures for 1980-2015: the forerunners experienced the decline in the resource sector and the increase in manufacturing sector instead, and the latecomers showed the expansion in the resource sector. If the resource curse effect is found in the latecomers but not in the forerunners through the VAR model estimation, some lessons from the forerunners could be extracted to apply to the latecomers on the future design of the industrial strategies. The dissertation also discussed how to

mobilize the resource revenues for a productive use in the context of public financial management focusing on Lao PDR, in other words, how the current public financial management in Lao PDR should be transformed from resource-curse form to resource-blessing one.

Followed by Introduction in Chapter I, Chapter II reviewed the literature on the resource curse hypothesis including its mechanism and channels and also the literature on the application of the hypothesis to the ASEAN economies, and then demonstrated this study's contributions. The contributions of this study were to deal with a group of resource-abundant economies in the ASEAN by applying a common analytical methodology for the comparison of the applicability of the resource curse effect, to adopt a comprehensive approach for the resource curse issue, containing the sectoral approach to examine the Dutch Disease effect and the intertemporal approach to examine the capital accumulation effect, and to analyze directly the causality and dynamic responsive effect of resource curse by using a VAR model as an analytical method.

Chapter III turned to the empirics for examining the resource curse effect, namely, the Dutch Disease effect and the capital accumulation effect, focusing on the four selected resource-rich ASEAN economies by utilizing a VAR estimation method. In this section, the study clarified the key variables and methodology for the estimation and the estimation outcomes with their policy implications. The empirical study found that the latecomers of Lao PDR and Myanmar seemed to suffer from the Dutch Disease over the sample period for 1980-2015 and 1986-2015 respectively; and the forerunners of Indonesia and Malaysia, on the other hand, appeared to have no Dutch Disease effect at least in the post-crisis period of 1997-2015, although Indonesia had experienced the Dutch Disease in the pre-crisis period of 1970-1996. The capital accumulation effect was found in Indonesia, Lao PDR, and Malaysia but not in Myanmar. In sum, the resource-rich latecomers of Lao PDR and Myanmar still stay at the phase of the resource curse. On the contrary, the forerunners of Indonesia and Malaysia have had no Dutch Disease effect at least in the post-crisis period and instead have enjoyed the capital accumulation effect, although Indonesia had experienced the Dutch Disease during the pre-crisis period. Thus, the forerunners of Indonesia and Malaysia that were previously resource-rich have transformed their economic structure from the Dutch Disease phase to manufacturing-oriented one through the capital accumulation effect. The lessons from the forerunners' experiences for the latecomers to escape from the Dutch Disease could be extracted as follows. First, some public financial system of allocating resource revenues for investment and development projects should be urgently established in Lao PDR and Myanmar, who have a rising share of resource sector and also get the Dutch Disease effect. Second, the diversification of industries by improving business environments should be facilitated for the latecomers of Lao PDR

and Myanmar. Third, the latecomers of Lao PDR and Myanmar who suffer from the Dutch Disease could turn out to enjoy resource blessing with the improvement of their institutional qualities.

Chapter IV aimed to discuss how to mobilize the resource revenues for a productive use in the context of public financial management focusing on Lao PDR. The current budget system in Lao PDR have mixed up the resource revenues with the ordinary budget, and it has brought about such difficulties as the volatility in revenue sources, the prevention of capital accumulation and the high risk of enlarging overall budget deficit. Thus the dissertation proposed to set up natural resource funds to insulate the resource revenues from the ordinary budget for Lao budget system. Regarding the functions of the funds, they should focus on stabilization and investments. For the stabilization fund, the Chile's fund with a flexible operational rule could be a good reference, while the investment should concentrate on education, health and economic infrastructure to diversify the industries for the sustainable development. As for the institutional arrangements of the fund, the type of "virtual" funds is recommendable considering the Lao institutional quality, and the Special Account system in Japan could be a good reference.

### 論文審査の結果の要旨

In the final examination, the following suggestions including those for the future research works were pointed out.

First, the study could take the agriculture sector into account in theoretical and empirical frameworks. To be specific, how the decline in the agriculture-GDP share has affected the Dutch Disease and capital accumulation effects is a question in sample economies including Lao PDR.

Second, the study could enrich the VAR estimation outcomes by showing the "variance decomposition", in addition to the analyses of Granger causality and impulse responses. When the analysis skips this component, the study should add some explanation for that.

Third, there is a room where the study further examines the recent declining trends in the manufacturing-GDP ratio in Indonesia and Malaysia. The points are whether these declines have been related to the Dutch Disease effect or to the deindustrialization effect, and what methodologies can identify the factors to explain these recent trends.

Fourth, the study could further consider the financial management on the revenues from hydroelectric power energy in Lao PDR. The hydroelectric power energy and the other natural resources have a different characteristic in the sense

that the revenues from the former would be stable and predictable since the selling prices of electricity are not affected by international commodity prices. Since Lao PDR has a large share for hydroelectric power in the resource revenues, the functions of natural resources fund should be focused more on “development” rather than “stability”.

Fifth, the study could be developed more towards the detailed analyses of industrial structure. The resources themselves have a variety of components from usual ones to rare metals and electricity. The manufacturing structure itself would be evolved according to the development stage. In addition, the relationship between resource sector and manufacturing sector, namely, substitutional one or complementary one, could be investigated in accordance with the development stage and to find out some possible turning point in the relationship.

Although there has been much room for improvements, the dissertation is considered to have contributions enough to deserve a doctorate dissertation. Through the comprehensive consideration, consequently, the committee unanimously agreed that the dissertation meets the requirement for the doctorate’s degree.