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主 論 文 の 要 旨

論文題目

Natural Resources and Economic Development:
Cross-Country Experiences and Implications for Cambodia's
Potential Oil and Gas Industry
(天然資源と経済発展：諸外国の経験とカンボジアの原油・天然
ガス産業への含意)

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論 文 内 容 の 要 旨

This PhD dissertation has its motivation from the announcement of the first oil and gas discovery in 2005 by Chevron. However, since then, the government has been tight-lipped about the detailed information related to the size, the definition, and the revenues of this new industry. Although it is still at the exploration stage, some revenue streams have already started flowing, and the production stage is expected to start in 2016. Based on this timeline, international organization such as the UNDP and the World Bank have been actively providing management and policy advice to the government, which has constantly refused to make any official preparation and argued that the oil and gas industry is still very uncertain.

The seemingly neglecting behavior of the government and the lack of transparency about the potential of this industry have led to a fading public attention, which is a central part of an accountable and effective resource management. More importantly, the relationship between natural resources and economic development in many resource-rich countries is a strong reminder that natural resources require a proper preparation to truly realize their potential. With this background, this PhD dissertation has three main objectives:

1. To project the potential of oil and gas industry on Cambodia's economy: the GDP contribution, employment creation, and the government's revenues
2. To investigate the relationship between natural resource and economic development by a literature survey, a cross-country empirical study, and a macroeconometric comparison between resource-blessed and resource-cursed countries.
3. To recommend best resource management policies to Cambodia, as well as new resource-rich countries

Based on its research objectives, this PhD dissertation has used different methodologies

and found important findings as follows.

Chapter 2 used the Input-Output analysis to project the potential of oil and gas industry on Cambodia's economy. It has found that Cambodia has a potential economic contribution from oil and gas industry. Using the 2008 input-output table and with various plausible assumptions, the projection shows that this industry can contribute up to 15 per cent of 2010 GDP annually and provides around 300,000 new jobs through linkage effects. Nevertheless, even in an optimistic scenario, national income from oil and gas industry will be small and mainly flow through the government's revenues. Every year oil and gas industry can contribute more than one fifth of 2010 revenues and grants in an average-case scenario. The downstream sectors present a different set of challenges, if successfully developed. A small refinery, with the capacity of 40,000 bpd, can additionally contribute about 223.4 million US dollars to Cambodia's GDP.

Chapter 3 surveys the literature on the link between natural resources and economic development. One of the most surprising facts in the economic growth models is the finding that natural resource abundance has had negative impacts on economic growth in many works. However, previous studies have some methodological mistakes such as the measurements of natural resources, the time dimension, and the endogeneity problems, which bias the existence of the negative relationship between natural resource abundance and economic growth. More recent works, therefore, try to minimize methodological mistakes and radically provide contrasting findings that there is no resource curse by the traditional standards.

So, is there no resource curse? The answer is yes, there is. There seems to be a consensus that there is a conditional curse rather than an absolute curse. However, there was never a consensus on what really lead to the negative relationship between natural resource abundance and economic growth. There are many different transmission channels, which can be clustered into economic and politico-economic channels.

Chapter 4 takes account of methodological mistakes in earlier works. Particularly, the measurements of natural resources, the time dimension, and the endogeneity problems were handled with appropriate estimation techniques by respectively introducing different measurements of natural resources, comparing their effects between 1970-89 and 1990-09 periods, and using the Three-Stage Least Squares estimator. More importantly, the conditional relationship between natural resources and economic growth is clearly explained by collective macroeconomic and politico-economic channels rather than small individual channels that have been found in various works. The findings from this study are very comprehensive in nature. The most important finding from this study is that resource curse or blessing is conditional upon the macroeconomic and political institutions of resource-rich countries. Only countries with favorable institutions, as reflected by their financial and political risk assessments, can gain benefits from natural resources. On the contrary, only high-risk countries experienced a negative impact while about half of resource-rich countries were not considered as resource-cursed or resource-blessed

countries.

Chapter 5 completes the puzzle pieces of the relationship between economic growth and natural resource abundance. It uses a macroeconometric approach to compare the impacts of the resource sector on the resource-rich economies. Nigeria and Norway, both abundant in natural resources, had two divergent experiences during the last four decades. Both countries started relatively well during the oil price booms in the 1970s, but Norway handled its economy much better with its smart policies. Among them, Norway managed to integrate its resource sector to the rest of the economy, made its monetary policy independent of the resource sector, and has a well-disciplined revenue spending policy. As a result, Norway's non-resource sectors were able to thrive alongside the resource sector, and the impacts of the resource boom are absorbed into its economy accordingly.

Nigeria's macroeconomic institutions were not as friendly and did not increase its absorptive capacity. Its monetary and fiscal policies are dependent on the resource sector. The resource boom was accompanied by intensive monetary expansion and wild increase in the public investment. The former policy caused the price level to rise and its exchange rate to lose its value. In turn, this led to an unfavorable environment for the private investment in the non-resource sector. The latter policy was very inefficient and wasteful because the public investment projects were designed for political gains rather than overall economic welfare. Therefore, Nigeria's absorptive capacity was low, and the impacts of the resource boom led to an even more unfavorable environment for the private investment in the non-resource sector.

Based on a solid literature on the conditional relationship between natural resources and economic development and the findings in the previous chapters, Chapter 6 reviews resource management policies from both resource-blessed and resource-cursed countries. The government's role in dealing the resource curse is the most important part of the solutions although the civil society participation and international organization should also play their roles to ensure that resource-rich countries can escape the resource curse. While the list is far from complete, management and policy practices can be categorized into two main groups.

To deal with the macroeconomic challenges of the natural resources, there are three main solutions: diversifying the economy, avoiding the Dutch Disease effects, and making proper public investment policy. On the political and institutional challenges, resource-rich countries have been plagued with various issues such as inefficiency in the resource exploitation, corruption, and conflicts. There are four main solutions to deal with these challenges. One is to create a natural resource fund. Resource-rich countries need to ensure a transparency and accountability in resource management.

Furthermore, resource-rich countries have to build capacity in priority areas ranging from parliament to local citizens so that they have the capability to involve in the decision making, monitor and supervise the resource management, and hold the government accountable in its

management. The other challenge in many resource-rich countries, which have intense competing interest groups, is social fractionalization caused by the resources. The government should develop local areas of the resource site, distribute part of the revenues and decentralize resource revenues to give them a sense of ownership and benefit sharing. Finally, many resource-rich developing countries are receiving both financial aid and technical assistance from international organizations. This creates an opportunity to learn from the lessons from aid such as the Dutch Disease, transparency, and capacity building; at the same time, it gives the international community an advantage to link the resource management to development aid.

This dissertation concludes that Cambodia has a great potential of oil and gas industry. However, the relationship between natural resources and economic development requires appropriate pro-cautionary measures from resource-rich countries to realize its true potential. Given its macroeconomic and political contexts, Cambodia can learn from the existing resource management practices and design an effective resource management policy that will ensure a resource blessing for its development.