Lessons in Extractive Industries Revenue Management: Implications for Cambodia[1]

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> "Whether oil and gas revenues translate into greater economic diversification and poverty reduction is the most salient issue in Cambodia's medium term outlook."
>
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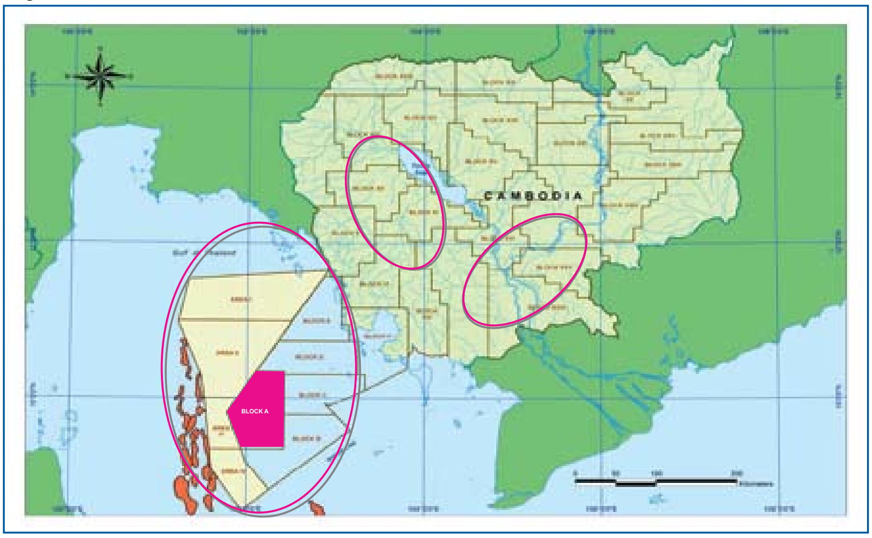
> *Prime Minister of the Kingdom of Cambodia*[2]

Cambodia expects its revenues from oil and gas extraction to increase significantly in 2016. Economic prospects for the future appear bright, but the short-term outlook holds major challenges – both economic and institutional. How to manage and use resource revenue productively across generations is a crucial question. Cambodia, like any other resource-rich country, needs to be well prepared before the influx of oil and gas revenues. In this regard, the search for economic models of extractive industries (EI) revenue management is both timely and important.

Cambodia' s potential oil reserves are shown on Figure 1, marked by the red circles. Exploratory drilling and provisional estimates, though still uncertain and somewhat controversial, indicate there may be 2 billion barrels of recoverable oil and 10 trillion cubic feet of gas (UNDP 2006: 10). For example, potential oil production from Block A alone is estimated to be around 20 thousand barrels a day. In other words, if production were spread out over 20-25 years and if all the recoverable oil can be extracted, at USD50 per barrel, the estimated oil revenue from all Blocks could be around USD6 billion a year (UNDP 2006: 10).This could be a significant contribution, particularly when viewed against GDP of USD14.06 billion in 2012 (World Bank 2013).[3]

Figure 1: Onshore and Offshore Blocks



Source: Cambodian National Petroleum Authority (2011)

Future EI revenues could boost government budgets available for investment in infrastructure and the provision of public services, thus hastening development and reducing poverty. However, Cambodia should be mindful that resource-rich developing countries usually face many challenges to become success stories in economic development.

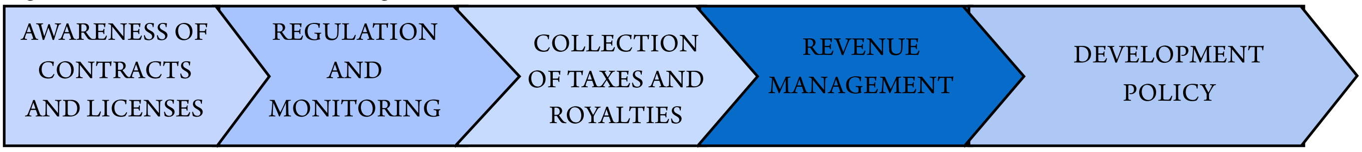
The presence of abundant natural resources can bring both advantages and disadvantages. Economic performance of resource-rich countries is often poor when compared with similar countries without resources. Despite the potential of resource revenues for infrastructure

[1] By Dr Heng Dyna and Ngo Sothath are researchers of Cambodian Economic Association (CEA). This policy brief draws heavily on Heng Dyna and Ngo Sothath (2013), *Extractive Industries Revenue Management: A Tale of Six Countries,* Research Report 4, April 2013 (Phnom Penh: CEA), an empirical research study presented at the roundtable discussion and workshops on Growth and Inclusiveness, coordinated by the CEA, a Development Research Forum partner. The full report is available at www.cea.org.kh and www.crrt-cambodia.org.

[2] Excerpt from the prime minister's keynote address to the 2008 Cambodia Outlook Conference on the theme "Mobilizing Cambodia's Resources—Human, Natural, Financial—for Quality Development, Growth and Prosperity", 28 February 2008, Phnom Penh Hotel.

[3] The current crude oil price is around USD100 per barrel. The authors use the more conservative scenarioof USD50 a barrel due to estimation uncertainty and oil price volatility.

Figure 2: Value Chain and Challenges



Source: Ross (2012)

and social development, economic growth can be disappointing due to (i) loss of competitiveness through appreciation of the real exchange rate caused by influx of capital, and (ii) macroeconomic instability induced by frequent boom-bust cycles. Questions arise as to how resource-rich countries manage their resource revenues. What have been the challenges in these economies? What steps does Cambodia need to take now in order to manage its resource endowment effectively and productively to avert "resource curse".

Understanding the practices of EI revenue management in various countries and their successes as well as their failures is crucial for policymakers. This Brief draws on the experience of EI revenue management from six countries[4] with a similar level of governance and economic development and makes policy recommendations for future EI revenue management in Cambodia.

Policy Discussion

Experience shows that transforming EI revenue into development is not an easy short-term task. Good governance of EI revenue matters as early as from the initial exploration, through to auctions and contracting, saving-spending models, fiscal sustainability, and long-term development policies. To ensure the benefits from their oil, gas and mineral deposits, resource-rich countries must deal with many challenges, both economic and institutional.

This Brief focuses on the revenue management part of the value chain (Figure 2). After resource revenues have been collected, the government must decide on their management and allocation, i.e. how much to spend on what. In this regard, the economic models of spending are important because they are directly linked to the country's development path and the risks associated with "resource curse". In managing resource revenue, governments need to address the following issues:

- Needs for social and infrastructure development
- Choice between current and future benefits (inter-generational equity)
- Policy design to deal with volatility of resource price and its depletion
- Enhancement of domestic capacity to absorb the spending from the resource revenue
- Transparency and accountability

These considerations need to be accompanied by policy on how to spend petrodollars appropriately and effectively for growth and poverty reduction. In general, three overarching issues need to be carefully addressed in order to determine a future sustainable stance of public expenditures: aggregate fiscal discipline, allocation efficiency, and operational efficiency.

In response to these challenges, resource-rich countries have adopted a number of spending-saving models, summarised in Table 1. The selection of which model to follow depends on a country's stage of economic development and political economy.

Quality of Institution and Policy Matters

The review of the six countries' experience suggests that natural resource revenue can be managed and can be useful for economic development. However, the right mix of macroeconomic, fiscal and exchange rate policy needs to be in place to minimise Dutch Disease and to ensure macroeconomic stability. Good governance of extractive industries requires long-term planning, starting at an early stage in the sector's development, coupled with long-term fiscal transparency.

Overall, the quality of institutions is crucial for the effective utilisation of EI revenues and the implementation of national development strategies. The best practices largely depend on the quality of fiscal spending and sustainability of fiscal policies across political regimes over time. In other words, a country needs to have a long-term development plan accompanied by a series of medium-term plans with clearly identified priorities for development and financing needs. A successful development strategy often has three key components:

(i) A time path of public investments suited to national conditions
(ii) Economic policy frameworks to promote the private sector
(iii) A political framework to ensure the rule of law and macroeconomic stability

[4] These countries are Azerbaijan, Ghana, Indonesia, Nigeria, Timor Leste, and Vietnam. They were chosen in consultation with relevant authorities and civil society organisations in Cambodia based on a number of key indicators: GDP per capita, poverty rate, income inequality, fiscal performance, and level of governance.

Table 1: Spending-Saving Models

Models	Definition	Benefits	Risks
Big-Push Spending	All or most of current revenues	Growth acceleration, and thus potentially faster poverty reduction	Unstable government spending, macroeconomic instability, Dutch Disease[5], and frequent "boom-bust" cycles due to volatile commodity prices
Bird-in-Hand	Real returns on current assets[6]	Prudent and simple saving regime	A high opportunity cost in terms of foregone social and infrastructure spending at the early stage of economic development
Sustainable Income	Real returns on the sum of current assets and future revenues	Expenditures out of natural resource proceeds would be stable, avoiding boom-bust cycles	Uncertainty in future revenue estimations due to the uncertainty of oil prices and imprecise estimates of oil reserves
Revenue Benchmarking	A fixed/variable share of average of revenues and returns from asset (moving average)	Flexible (stabilising and saving) function	No guarantee of fiscal sustainability or optimal intergenerational consumption of resource wealth as it is subject to discretion Need clear benchmarking and long-term development objectives

[1] Source: Heng and Ngo (2013: 2-3)

The saving-spending models should be adopted depending on the country's stage of economic development, quality of institutions, and the size and nature of resource revenue flows. In addition, since extractive industries are highly location-specific and have many implications for local communities, countries need to have effective revenue management in order to reduce the gap across the horizon, particularly between resource-rich and resource-poor areas. The role of sub-national government will be critical in such equitable management of resource revenues.

Policy Implications

An in-depth analysis based on reliable data and fiscal structure is needed in order to formulate specific recommendations for spending on what and how much. Nonetheless, based on the theoretical and empirical reviews of the study, the authors recommend that Cambodia undertake the following with regard to its oil resource revenues:

- ***Strike the right balance of saving-spending:*** There are incentives for Cambodia to spend the resource revenues, given its need for social and infrastructure development. However, there are also good reasons for Cambodia to save some portion of the revenue, at least for stabilisation purposes, given its weak institutions and the limited role of formal taxation. In our view, Cambodia should consider a revenue-benchmarking model, in which the government would decide a fixed share or variable share of average resource revenue and returns, and save the excess revenue in a stabilisation fund.
- ***Standardise oil contract types to minimise the complexity of revenue flows:*** Cambodia should have a standard contract term, which may make it easier for government to monitor contracts. As experience in many countries shows, the more steps that are involved between revenue generation and their final receipt by government, the more opportunities there are for leakages.
- ***Develop production-monitoring capacity:*** Relevant authorities have to be well trained to monitor EI production and export. Otherwise, government would have to believe all the figures provided by oil companies.
- ***Develop clear roles among government agencies:*** All relevant agencies, not only petroleum authorities or advisors, should build their capacity and have their clear roles in revenue flows and spending. At the same time, Cambodian fiscal institutions should be further strengthened in order to manage resource revenue effectively.
- ***Enhance budget transparency and accountability:*** Budget transparency and accountability is essential in the management of resource revenue. Thus, a review board with representatives from government, donors, and civil society can help promote transparency and accountability in resource revenue management in

[5] "Dutch Disease is the negative impact on an economy of anything that gives rise to a sharp inflow of foreign currency, such as the discovery of large oil reserves.The currency inflows lead to currency appreciation, making the country's other products less price competitive on the export market. It also leads to higher levels of cheap imports and can lead to deindustrialisation as industries apart from resource exploitation are moved to cheaper locations" (http://lexicon.ft.com/Term?term=dutch-disease).

[6] The government places all hydrocarbon revenues in a fund and is only allowed to annually withdraw a pre-determined percentage of the value of the previous year's fund for the state budget.

Cambodia. An option for Cambodia is to join the Extractive Industries Transparency Initiative (EITI) so that it can learn valuable lessons from other countries and implement a transparent management of oil revenues.

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About DRF

The Development Research Forum (DRF) of Cambodia was established following the All-Partners Forum organised by the International Development Research Centre (IDRC) in September 2007.

The DRF vision is of a high capacity, professional and vibrant Cambodian development research community. Its goal is to support and strengthen the capacity of the Cambodian development research community.

The DRF partnership involves the Cambodia Development Resource Institute (CDRI), Cambodian Economic Association (CEA), Learning Institute (LI), National Institute of Public Health (NIPH), Royal University of Agriculture (RUA), Royal University of Phnom Penh (RUPP), Supreme National Economic Council (SNEC) and the International Development Research Institute (IDRC).

In DRF Phase II 2012-15, with financial support from IDRC, the partners intend to work together to build research culture and capacity and to share research knowledge through workshops, policy roundtables and symposiums as well as training and online discussion (www.drfcambodia.net) on six research themes: growth and inclusiveness, governance of natural resources, social policy – education, social policy – health, agricultural development, and Cambodia and its region.

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