

Extractive Industries and Development

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Forecasting Revenues from Extractive Industries: the Inherent Disadvantages of Host Governments

Countries endowed with rich mineral or oil and gas resources have many competing uses for the revenues that arise from the production of those resources. Decisions need to be made in particular about how best to use the government revenues, taking into account the complex life cycles of most extractives projects and the long-term nature of the revenue streams that governments can expect. 30 years is not an uncommon time horizon for gold and copper mining and some iron ore concessions in, for example Brazil have lives of more than 100 years. But practical planning, policy making and budgeting over such long periods have to rely on revenue projections which are hugely complicated by two main factors. First, at the time when many extractive resources are discovered and licenses for their exploitation are granted, there is often great uncertainty about (a) the magnitudes of the resource and so the associated government revenues and (b) the time profile of the production that will follow including the start date of that production¹. Second, it is an unavoidable feature of every type of extractives resource that they suffer from potentially high levels of volatility of prices which they can command on world markets. So the task of projecting revenues is inherently difficult.

The commercial mining and oil and gas companies will invariably have their own very detailed planning models. These models will be based on information that gives them a distinct head start on the planners in government: specifically that information will include detailed technical information about the physical attributes of their resource and what is involved in producing it. The forward-looking data in these models will also extend out to the later years of the life of the mine (or oil well) and will provide explicit detail about the levels of tax and other payment to government that will arise in each year². Governments typically cannot be expected to have anything like the same level of detailed information or foresight. Although governments are charged with making wise long-term decisions, they typically have to do this on the basis of seriously incomplete or unreliable partial sources of information. When this informational deficit is superimposed on the normal election-influenced messiness, and short-termism, of much government planning (where even a well-developed Medium Term Framework typically covers only 3-5 years), it is easy to see why governments can and do slip up in planning the optimal use of their extractive revenues.

¹ For example, the large gas finds in the Indian Ocean around Tanzania, were known about in some detail as far back as 2011, but most major International Oil Companies such as BGG will not make their final investment decisions about their Tanzanian projects, until around 2017 and will produce no gas until around 2021.

² These projections do of course use explicit assumptions about future commodity prices and production costs as well as the rates and the structure of the taxes that will be levied by government.

A good example of the problem that this asymmetry of information can have comes from Ghana, which began oil production from its Jubilee Field in 2010. From 2011 onwards, the government assumed substantial receipts from corporation tax within the annual budget; yet the first payments did not actually arrive until 2013. Several things seem to have gone wrong with the government planning for their future revenues: (i) the companies were utilising a provision within the tax code to offset profits against their initial capital costs which the government did not seem fully to anticipate; (ii) early hikes in government wages and other recurrent expenditures in partial anticipation of the oil boom quickly caused these additional outlays to exceed additional oil revenues; (iii) the political spend around the 2012 election exacerbated the problem; and (iv) new sovereign borrowing on unfavourable terms was perhaps premature – it raised interest costs without boosting investment and growth.³ Not all of these errors can be ascribed to informational failures but the information deficit almost certainly contributed to them.

What if anything can be done to close the informational gap as between the extractive companies on the one hand and the government on the other? A basic problem is that the detailed forward-looking data used by extractive companies is typically commercially restricted because it contains sensitive information about planned investment, costs etc. that would be of value to competitor companies. Government themselves cannot easily obtain such solidly based information about the future outlook – for production levels, revenues and so on – unless they are substantial owners in their own right. However, there are emerging examples of how sanitised versions of the company data can be made available and so used for the purposes of government planning. In 2008/9, five mining companies in Tanzania provided anonymized versions of their detailed data for all years from 2010 through to 2034 to an independent “aggregator” who then produced an aggregated version of those data that could be made public without revealing any commercially sensitive data about any one company. Details of the methodology used and the main results are published in ICMM (2009)⁴. Similar approaches have subsequently been used in case studies of both Zambia (ICMM, 2014)⁵ and in relation to the British Gas Group’s large potential investment in Indian Ocean gas (OPM and Uongozi, 2013)⁶. Although these studies have all been conducted mainly by organisations external to the country, they nonetheless demonstrate the possibilities that some governments might wish to employ to ensure that they base their own projections on the fullest possible information.

Alan R Roe

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³ A fuller analysis of this episode can be found in Bawumia, Mahamudu (2014), *Ghana and the Discovery of Oil: from Boom to Gloom*, paper to Annual Conference of Natural Resource Governance Institute, Oxford, May 2014.

⁴ ICMM (2009), *Mining in Tanzania – What Future can we expect?* London, October 2009.

⁵ ICMM (2014), *Enhancing mining’s contribution to the Zambian economy and society*, London, April 2014.

⁶ Uongozi Institute and Oxford Policy Management (2013), *LNG in Tanzania: Likely impact & issues arising*. Uongozi Institute Workshop Report, Dar es Salaam, August 2013.