Fiscal Analysis of Resource Industries (FARI): a framework for fiscal regime design, analysis, and forecasting

Oana Luca (IMF/FAD)

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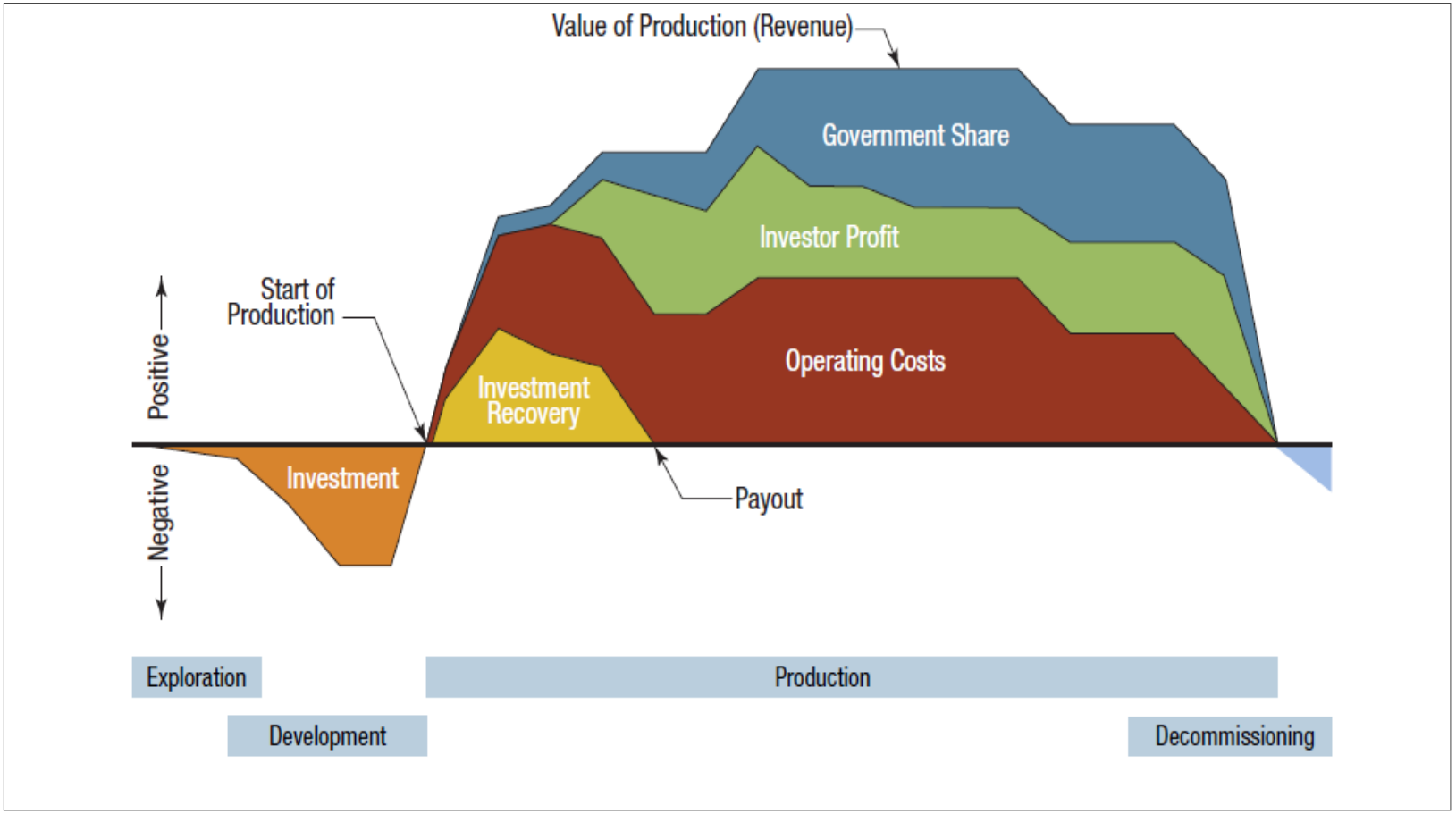
The life cycle of a resource project and government revenue



Fiscal regimes for extractive industries

The "fiscal regime" is a package of instruments for extracting the government share through the life of a project…

Examples of fiscal instruments

- Bonus payment
- Land rental or fixed fees
- Royalties (specific, ad-valorem, profit-based, price-based)
- Corporate income taxes
- Additional profits taxes
- State participation
- Profit oil share
- Dividend and interest withholding taxes
- Other indirect taxes (VAT, import duties, export tax)

The choice of mechanisms depends on a combination of the sharing of risk and reward, and the timing of government revenue.

Key considerations in designing a fiscal regime

1. **Capacity to raise revenue**

   → Maximize the *government take* from the overall project

2. **Manage government risks**

   → The government needs to be able to anticipate its resource revenue (when, how much, what tax composition?) to mitigate macro-fiscal risks.

3. **Progressivity**

   → Automatic change in government share of project rent in reaction to changes in project profitability (for example, as a results of changes in prices)

4. **Neutrality**

   → Avoid distortion of investment and operating decisions

Project-level fiscal regime evaluation

- **In practice, the interaction between the different elements of a fiscal regime is complex and produces effects that vary by individual project.**

- **Headline parameters usually offer only limited insight.**

  For example, how do these two regimes compare?

  - Regime 1: 3 percent royalty + 38.5 percent CIT
  - Regime 2: 15 percent royalty + 33 percent CIT

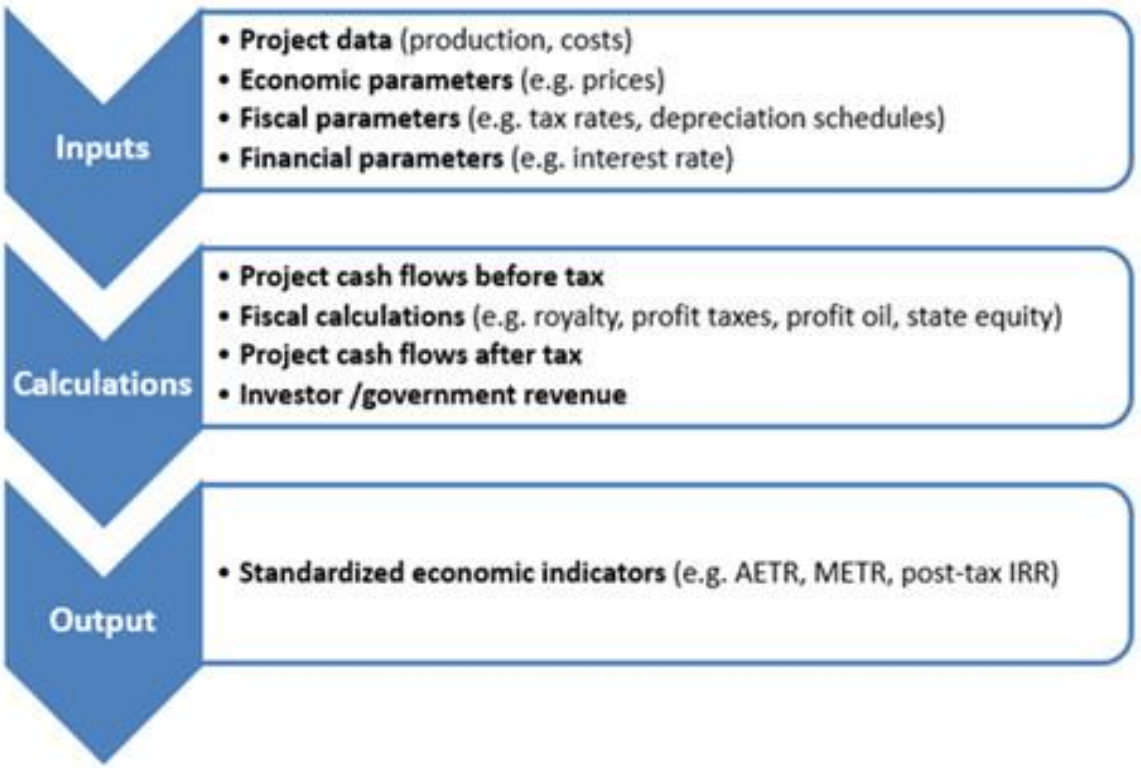
- **Appropriate treatment of depreciation, loss carry forward, thin capitalization rules, and ring-fencing is important.**

…. Project-specific financial modeling is necessary.

Evaluation of fiscal regimes with FARI

- A model for the fiscal analysis of resource industries used in FAD technical assistance. Methodology, stylized template, and supporting materials available online at http://www.imf.org/external/np/fad/fari/index.htm.

- Simple flow, one-page structure



Applications of the FARI model

Fiscal regime design (core)

- Widely used in tax policy technical assistance for parameter calibration, international comparisons

Revenue forecasting (increasingly)

- Composition and timing of expected revenue streams with aggregation of multiple projects
- Revenue management and calibration of fiscal rules

Revenue administration (potentially)

- Comparing actual, realized revenues with model results

Hands-on Excel exercise with FARI

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Instructions

Using the FARI model distributed in class, discuss the following cases for a mining project:

1. Project pre-tax profitability when the price of gold is **USD1300 per ounce**
2. Overall government take under three given fiscal regimes
3. Profile and composition of government revenue for each regime
4. Create an alternative fiscal regime and compare with the existent regimes
5. Study the progressivity of the regimes

Redo steps 1,2 and 3 for the case when the price of gold is **USD1100 per ounce**

Technical slides

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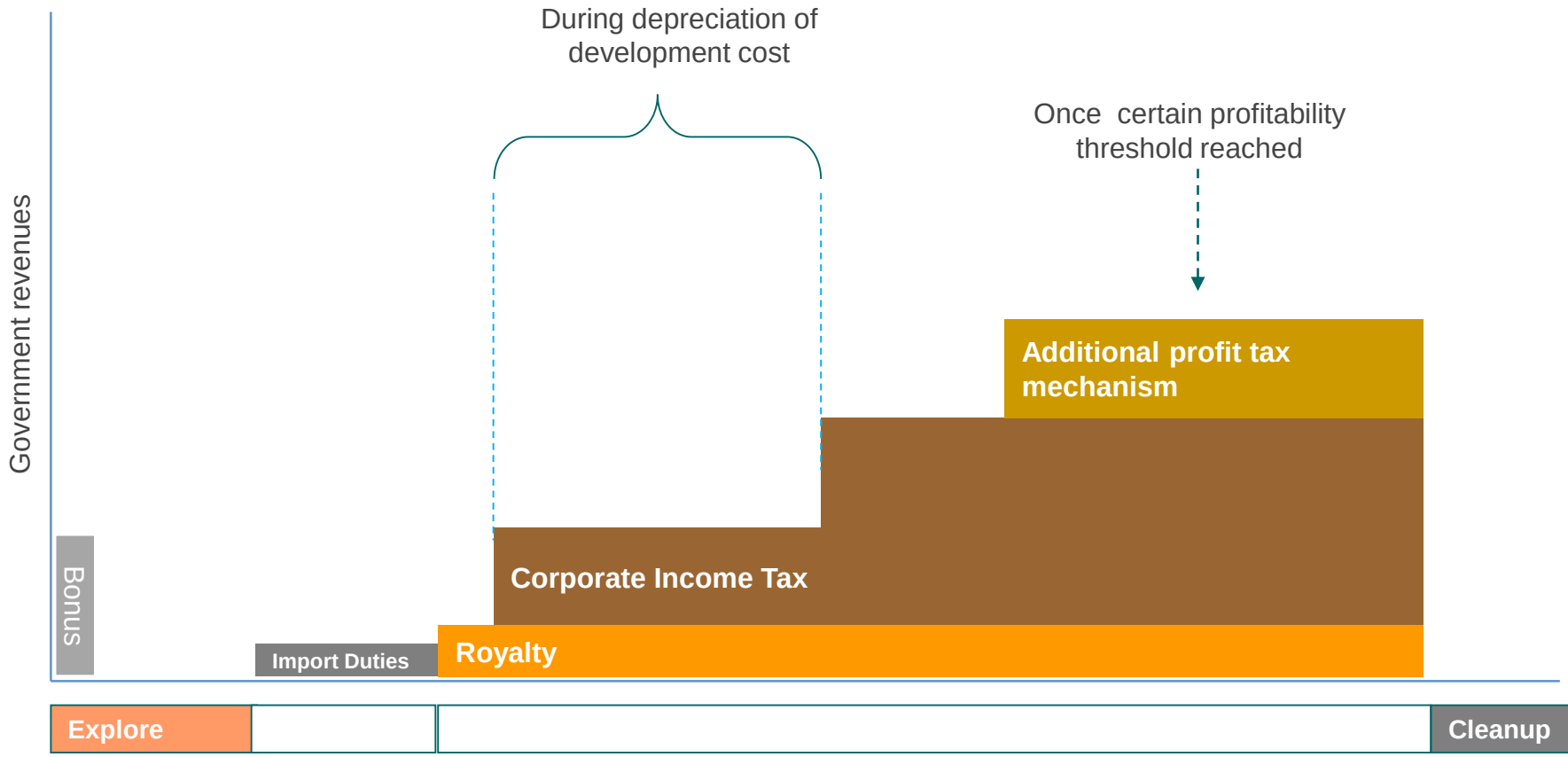
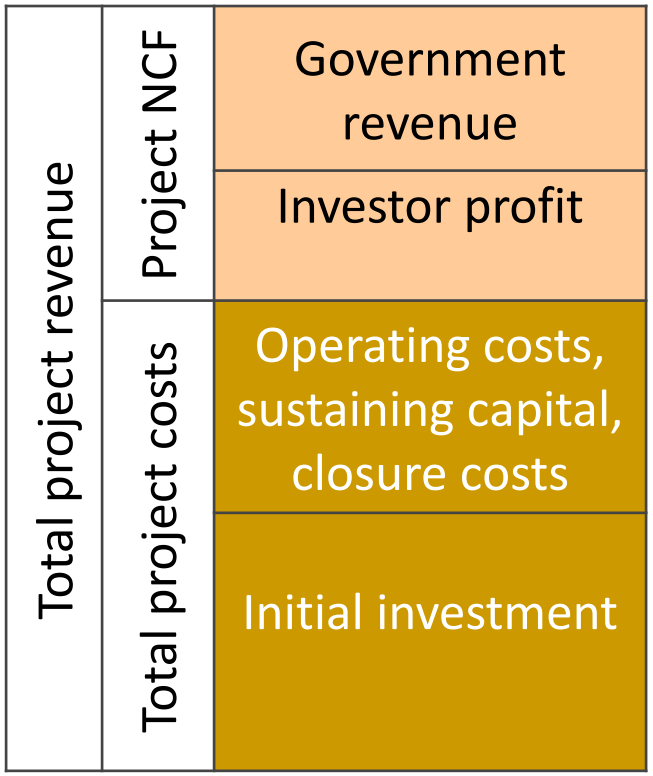
1. Time profile of government revenue

The government needs to be able to anticipate its resource revenue (when, how much, what tax composition?) to mitigate macro-fiscal risks.



2. Revenue raising capacity of fiscal regime

This criteria is evaluated with the "government take" or the Average Effective Tax Rate (AETR), an indicator calculated over the full project life.



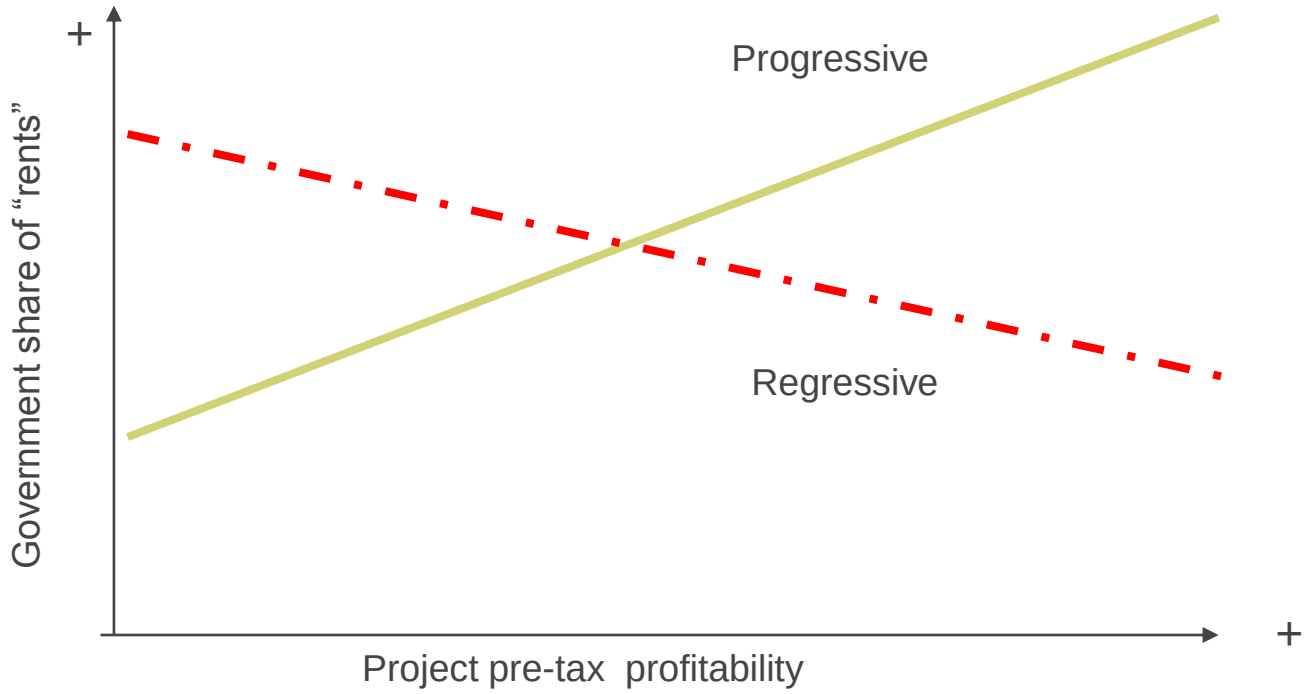
$$\frac{\textit{Government revenue}}{\textit{Project revenues} - \textit{project costs}} = \text{AETR}$$

- Can be calculated at different discount rates. At the investor discount rate, if AETR >100% then project is unviable.

! The AETR represents only a snapshot of the behavior of the fiscal regime for one set of price and costs assumptions or project profitability.

3. Progressivity

Progressivity is the property of the fiscal regime to ensure a higher share for the government of highly profitable projects, while imposing a lower burden on lower profitability projects.



! Compared to the AETR, this analysis allows the evaluation of the fiscal regime over a range of project outcomes.

4. Neutrality

A fiscal regime is neutral when it does not induce distortions of investment and operating decisions.

Can be analyzed with the help of the ***breakeven commodity price***, that is, the minimum price required by the investor to reach his minimum require return after tax to go ahead with the investment.

In project analysis, a breakeven price above the assumed project price suggests a fiscal regime that deters the investment decision.

Thank you

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