Asset Sustainability in a Mineral Economy

Three fiscal (public finance) policy challenges:

1. **TAXATION**: Design a taxation system that appropriates mineral rents to the nation, while leaving the owners of factors of production with a return for inputs, including a reward for risk

2. **SPENDING**: Ensure that mineral revenues are spent on asset accumulation (investment) and not consumption (fiscal rules)

3. **INVESTMENT**: Ensure that investment is productive (generation of income to replace minerals in future)
Taxation Regimes for Natural Resources

What forms of taxation should be used?
- Royalties (related to production/sales)
- Production sharing (common with oil)
- Profits Tax

At what point should taxation be applied?
- Production, exports;
- Value-added (e.g. refining, smelting) vs production (extraction)

How should profits taxation be designed?
- e.g. flat rate vs variable rate

Balance between simplicity and ideal characteristics in the real world, e.g.
- Royalties are simple to collect and difficult to avoid, but raise the fixed costs of production and reduce output
- Profits taxes are more “equitable” but are vulnerable to transfer pricing
Taxation Regimes for Natural Resources

How should ownership be handled?

• Distinction between ownership of resources and ownership of extraction operations
• Should government have a right to an ownership stake, and if so, how much?
• Should government’s stake be paid for or not (free carry)?
Fiscal implications: Revenue mobilization from natural resources

TAXATION issues:

• Setting the optimal taxation rate requires an assessment of the uncertainty of commodity prices. The higher the unit price, the larger the resource rents (assuming the marginal cost of production remains constant).

• Governments also need a good understanding of costs and reserves, as well as strong audit capacity to ensure contract enforcement.

Without this, the majority of the mineral rents will leave the country via the international investor, rather than being channeled back into the country.
Fiscal implications: Spending priorities

Current expenditure (which generates immediate benefits, but mostly in the short run) or Capital expenditure (which translates into higher returns in the future)?
Fiscal Policy: Expenditure & Savings

Key decisions:

• How much to invest and how much to consume?
  • *(Hartwick rule says proceeds of taxation of rents – i.e. resource depletion - should all be reinvested)*

• How to divide investment between types of assets:
  • Physical assets
  • Human capital (education)
  • Financial assets

• How to manage financial assets?
  • Sovereign Wealth Funds
  • Domestic / offshore mix
Implementation of Hartwick Rule in Botswana: Sustainable Budgeting Index

1. Fiscal mineral revenues should be invested
   1. i.e. should not be spent on recurrent items

2. Public investment includes:
   1. Fixed assets (roads, infrastructure, buildings etc.)
   2. Human capital (education and health spending)
   3. Accumulation of financial assets (by Govt.)

3. Measured by:
   1. Aggregate public investment (development) spending, plus
   2. Recurrent spending on education and health (i.e. human capital)

4. Sustainable Budget Index
   1. Ratio of non-investment spending to recurrent revenues (should be less than 1)
Mineral rents and fiscal policy – how well did Botswana do?

Mineral revenues have tracked rents well

On average, 93% of rents collected as fiscal revenues from 1980-2013
Mineral rents and fiscal policy – how well did Botswana do?

Mineral revenues have tracked rents well
On average, 95% of rents collected as fiscal revenues from 1980-2013
Appropriation of resource rent – mineral revenue

Policy objectives:

Minerals owned by the state, on behalf of the nation

Investors receive “right to mine” but not ownership of mineral deposits

Mineral tax system should appropriate rents for owner of resource, while leaving investor with appropriate compensation for cost of production, capital and risk

Tax:

Royalties, profits tax, withholding tax on dividends etc.

How well has the policy objective been achieved?

Ownership

Govt has right to acquire shares in mining company, but has to pay
Appropriation of resource rent – mineral revenue

Taxation:

- A “Variable Rate Profits Tax” is applied - rate of tax is determined by the profitability of the mining enterprise.
- Aim is to ensure that any supernormal or windfall profit accrues to government.
- Rate of tax rises with the profitability of the mining company.
- Specific formula applied is:

  \[ \text{Annual tax rate} = 70 - \left( \frac{1,500}{X} \right) \]

where \( X \) is the profitability ratio, given by taxable income as a percentage of gross income.
Monitoring Spending: Sustainable Budget Index (SBI)

Sustainable Budget Index

- Ratio of non-investment (recurrent) spending to recurrent revenues
- If < 1, budget is sustainable
  - Mineral revenues not being used to finance recurrent spending
  - Mineral revenues being used to finance investment (accumulation of assets)
- Implementation of the Hartwick Rule
- Largely observed in practice, despite being a policy rule not a statutory rule
Sustainable Budget Index
How have mineral revenues been spent?

- Education
- Health
- Other investment
- Mineral revenue
How have mineral revenues been spent (1983-2014)?

<table>
<thead>
<tr>
<th>Category</th>
<th>P billion (real, 2012 prices)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mineral revenues</td>
<td>420.4</td>
</tr>
<tr>
<td>Total investment (physical and human capital)</td>
<td>444.5</td>
</tr>
<tr>
<td>o/w Education spending</td>
<td>185.9</td>
</tr>
<tr>
<td>Health spending</td>
<td>65.9</td>
</tr>
<tr>
<td>Other development (investment) spending</td>
<td>195.9</td>
</tr>
<tr>
<td>Recurrent revenues, excluding grants and sale of property</td>
<td>468.6</td>
</tr>
<tr>
<td>Recurrent spending, excluding health &amp; education</td>
<td>378.0</td>
</tr>
<tr>
<td>Net financial savings (GoB share of Pula Fund (GIA) less net debt, December 2013, nominal)</td>
<td>4.0</td>
</tr>
</tbody>
</table>
Investment / expenditure / savings choices

• For sustainability, mineral revenues should be invested, but how?
  • Physical assets, human capital, financial assets?
• In low income countries, returns to investment in physical assets and human capital are likely to exceed returns on financial assets
  • But needs planning capacity that can ensure good quality investment decisions ("invest in investment")
• Sovereign Wealth Fund
  • should be part of the mix for mineral economies
  • should be invested offshore:
    • Helps to avoid absorption capacity problems
    • Also reduces risk of “Dutch Disease”
    • And provides an annuity income for when minerals are depleted
Natural Capital Accounting & Fiscal Policy Decisions in Practice

Botswana:

1. Enables government to assess how effective its mining fiscal regime has been in terms of collecting mineral rents
2. Assists in modernising the mining fiscal regime
3. Assists in providing the basis for negotiations with mining companies for new projects
4. Enables government to manage expectations amongst the population
   - Enables the Ministry of Finance to manage expectations amongst spending ministries!
5. Enables government to assess the effectiveness of the implementation of fiscal rules
6. Provided the government with the rationale for establishing a sovereign wealth fund
Mauretania:

1. Assisting in developing a fiscal regime for the resource sector that enables the government to recover an equitable share of resource rents;

2. Generating well-designed investment policies that use resource rents to generate sustainable returns over the long term

3. Renewal of EU-Mauritania Fishery Protocol. The most important sectoral agreement for both parties. A wealth accounting analysis was used during negotiations.
QUESTIONS?
THANK YOU!

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