ENVIRONMENTAL ISSUES and NATURAL RESOURCE EXTRACTION

Natural Resource Taxation – Issues for Environment Policy?

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ISSUES COVERED

Natural resource extraction and revenue potential

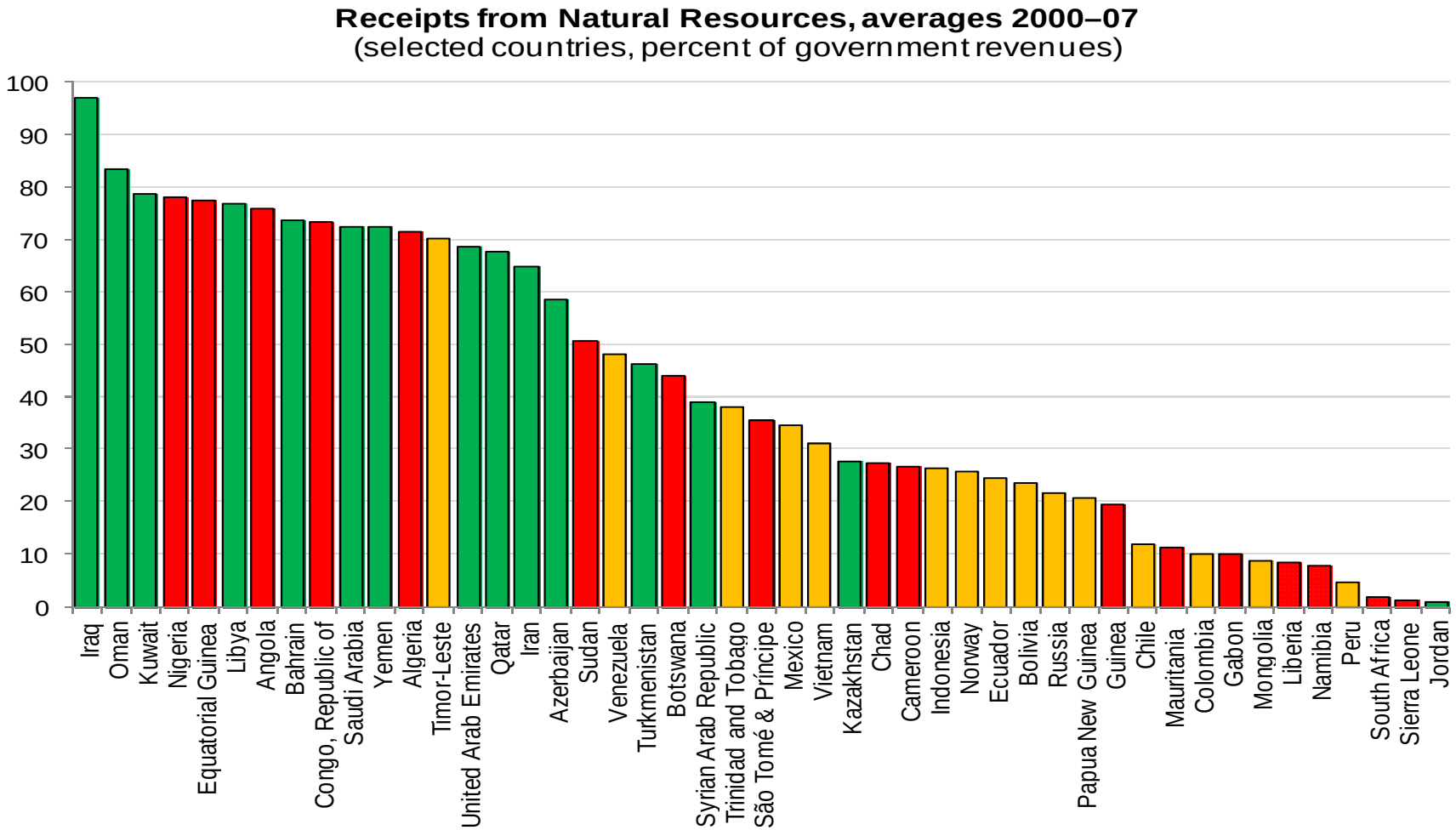
International organisation support for policy formulation and administration at country level

Environmental issues

NATURAL RESOURCE POTENTIAL

- OECD countries well-explored
- Only 20% of Africa's natural resources discovered so far (Collier)
- If correct, flows from natural resources likely to dwarf other sectors
- Example - potential for transformative projects in Africa
  - **Oil**: Ghana, Uganda, Niger, Sierra Leone? Liberia? Tanzania?
  - **Iron Ore**: Guinea, Liberia; Tanzania?
  - **Nickel**: Tanzania, Burundi
  - **Uranium**: Niger, Tanzania, Namibia, Malawi

DIVERSE EXPERIENCE SO FAR...

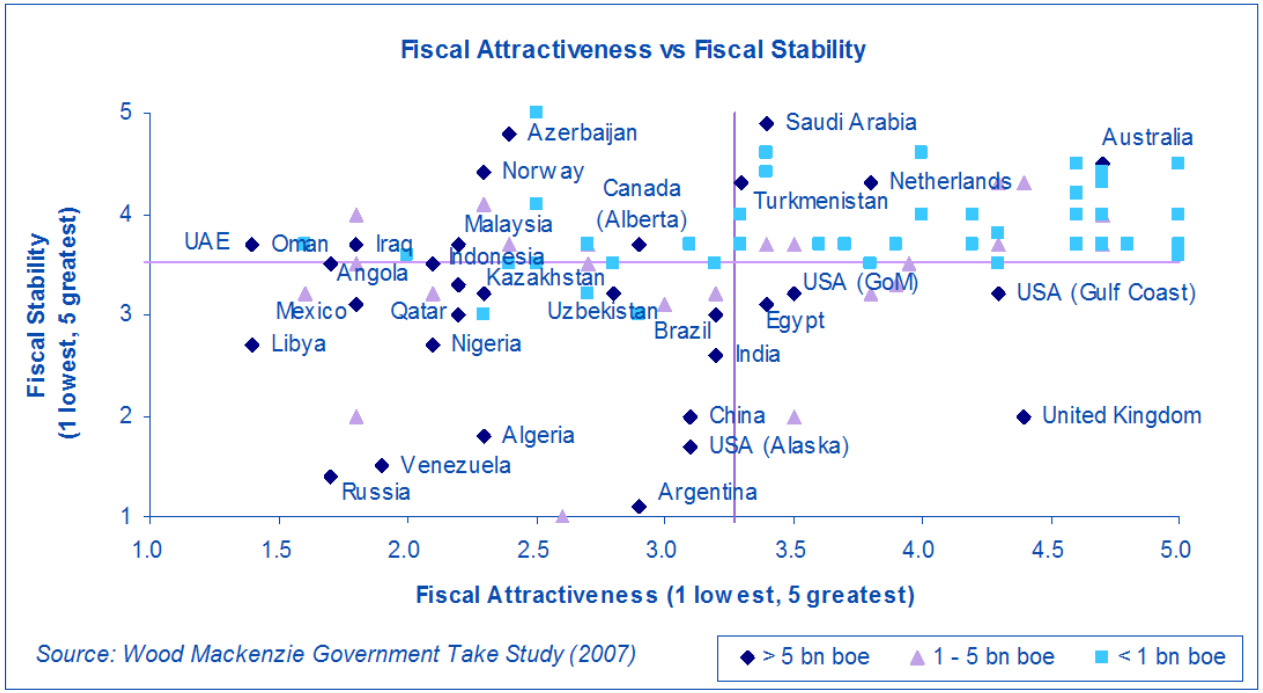


HUGE VARIATION IN GOVERNMENT TAKE and RESOURCE OPPORTUNITIES

Wood Mackenzie | Energy

Fiscal Terms Index

Combines various ratings of fiscal attractiveness and stability



Delivering commercial insight to the global energy industry

MOBILISING REVENUES FROM NATURAL RESOURCES

1. Identify the resources
2. Allocate rights
3. Design the fiscal regime
4. Administer the fiscal regime
5. Manage the revenues

→ ALL OF THESE NEED TO BE DONE RIGHT

WHAT'S SO SPECIAL ABOUT RESOURCES?

- Size of sector (even individual projects) relative to the economy
- Tax revenue is the central benefit to host country
  - Leveraging other economic development an ongoing challenge
- High sunk costs, long production periods
  - Create 'time consistency' problem
- Substantial rents on many projects
  - The ideal of a non-distorting, immobile tax base
- Competition between countries for investment

WHAT ELSE?

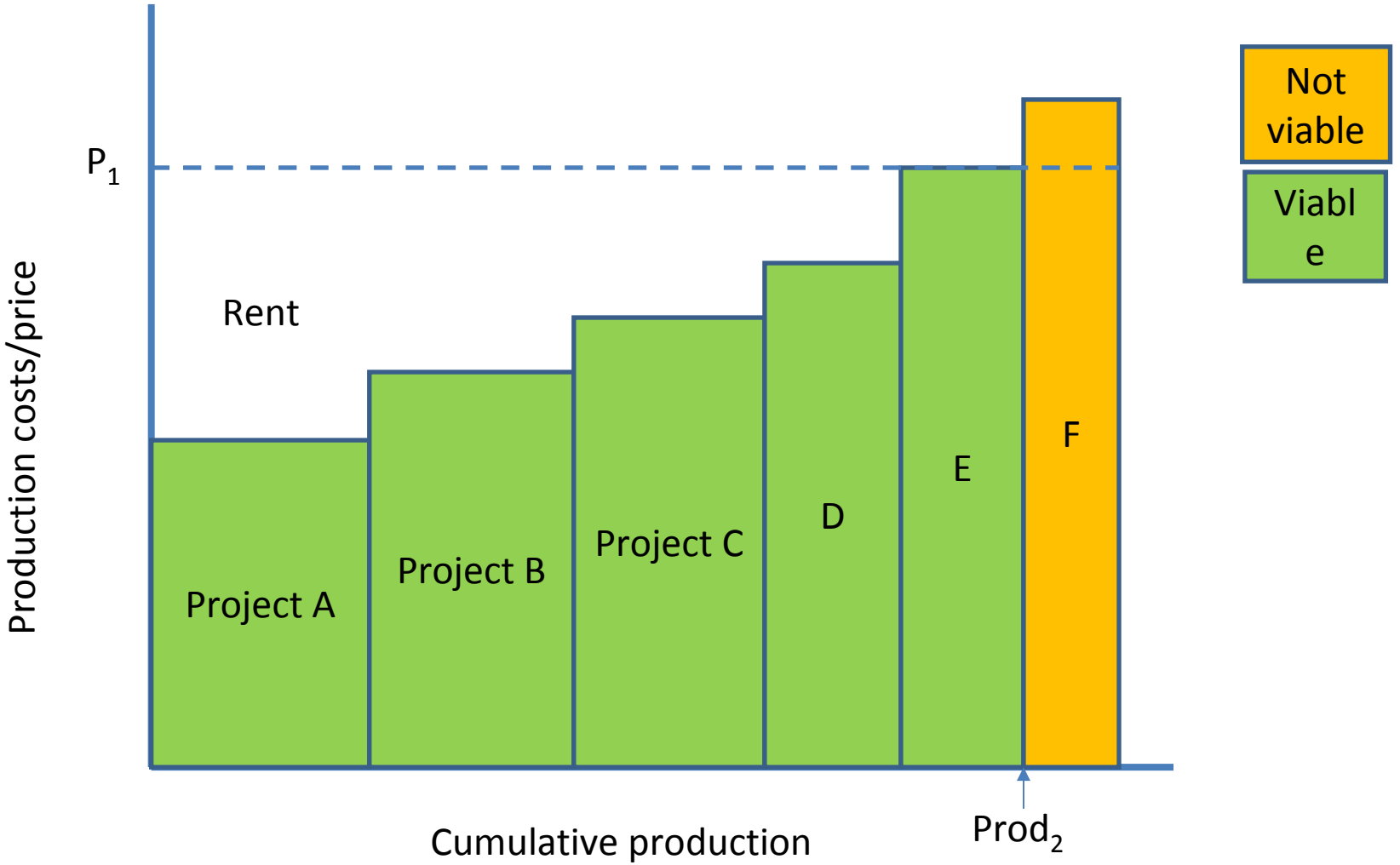
Asymmetric information

Few of these are unique to resources—they're just bigger.

What is unique is:

- Exhaustibility
  - Opportunity cost of extraction includes future extraction forgone
  - Recognize revenues as transformation of finite asset in the ground into financial asset
  - But importance of exhaustibility varies as some countries have very large reserves at anything like current production levels (100+ years) and "stone age did not end because they ran out of stones" factor

ECONOMIC RENT



COMPANY DECISION MAKING

Tax impact on companies' willingness to invest via impact on:

- P/I ratios (Post Tax Profit/Pre Tax Investment)
- Internal Rate of Return (IRR)
- Materiality

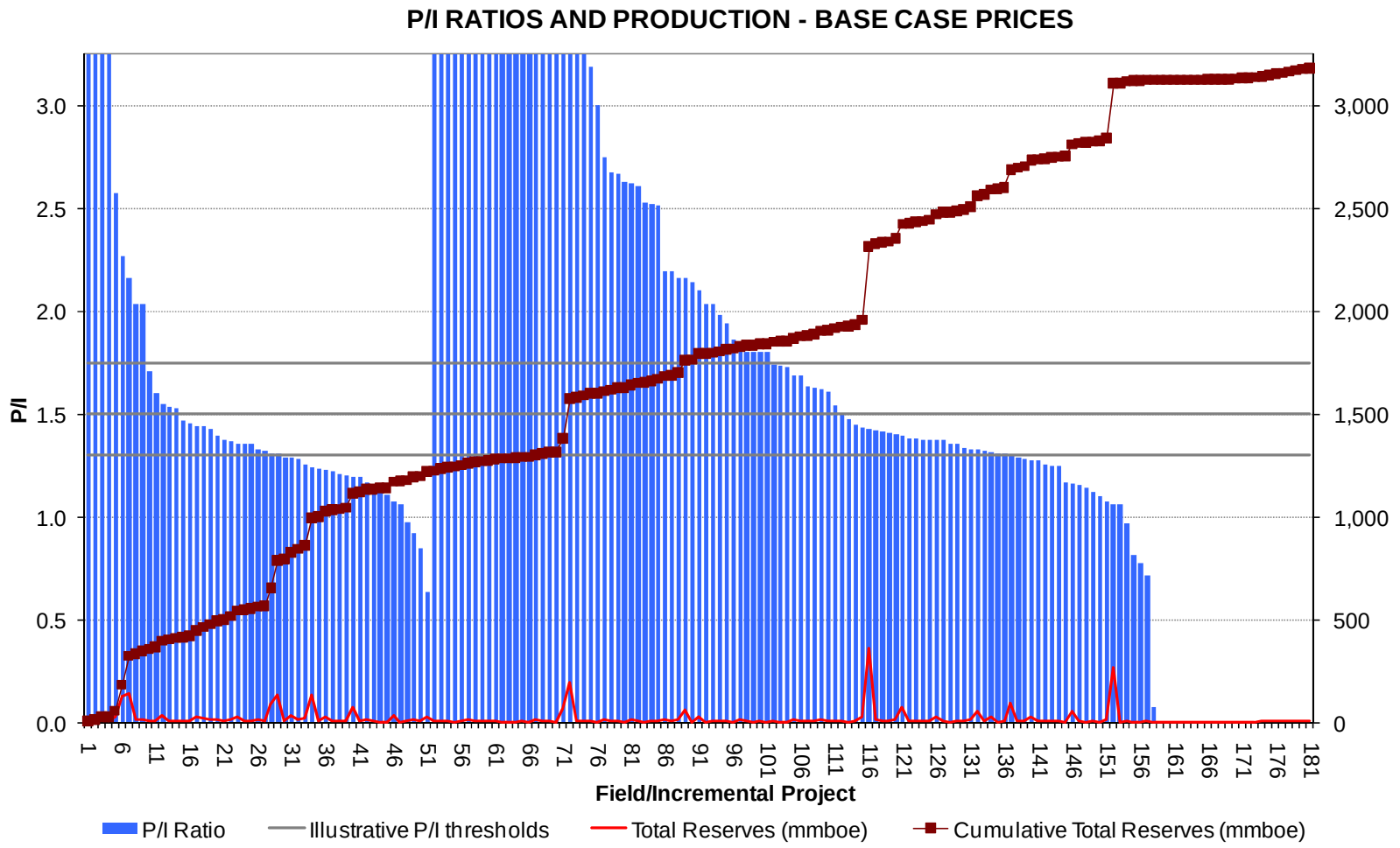
These can be modelled and estimated under different tax assumptions

COMPANY DECISION MAKING: Project Economics

Financial and decision making criteria relatively easy to model but final decision has to take into account:

- Technical risks and potential cost over-runs, e.g. HPHT where technical problems can be very costly
- Political Risk – e.g. Venezuela and the risk of expropriation

VARIATION IN PROJECT PROFITABILITY
An illustration of economic constraints



TAXATION OF NATURAL RESOURCE PRODUCTION

- Tax and royalty, production sharing, and state equity can all be made fiscally equivalent. (But government take ultimately limited by size of economic rents generated by individual projects.)
- Different contract structures can apportion risks differently, and affect stability and credibility.
- Need to make data for key assessments in the regime observable and/or verifiable.
- Opportunities for aggressive tax planning should be minimized.
- Overall fiscal regime must take account of relative capacity to bear risk.

DISTINCTIONS between MINERALS and PETROLEUM

- Appears to have been easier for governments to impose and collect high rent taxes on petroleum than on minerals. Why?
- Recent Australian debate is a case in point.
- Are there systematic differences in the risk profiles? For example, higher exploration risk in petroleum, higher development risk in mining?
- Does petroleum on average yield higher rents than mining (cost proportions lower).
- Does the commercial structure matter? Petroleum projects commonly JVs with adverse interests, mining projects mostly undertaken by single companies.
- Related issue – why is bidding for rights less common in mining?

ADMINISTRATION of NATURAL RESOURCE POLICIES

- Helps that commodity prices readily observable...

  ...but dealing with complex international companies always hard.

- Production sharing still requires assessment of costs.
- Royalties not as easy to administer as may seem (USA?)...

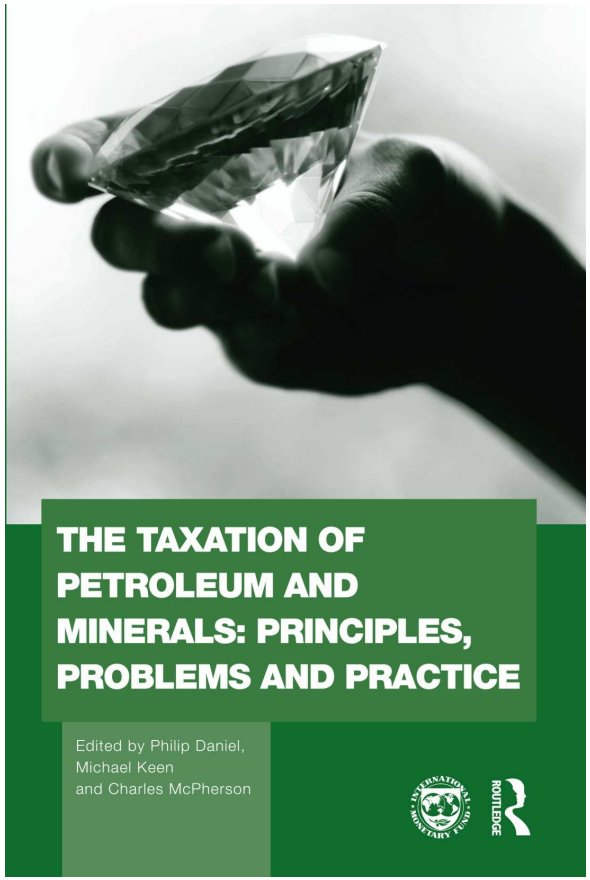
  ...but rent taxes maybe not as hard.

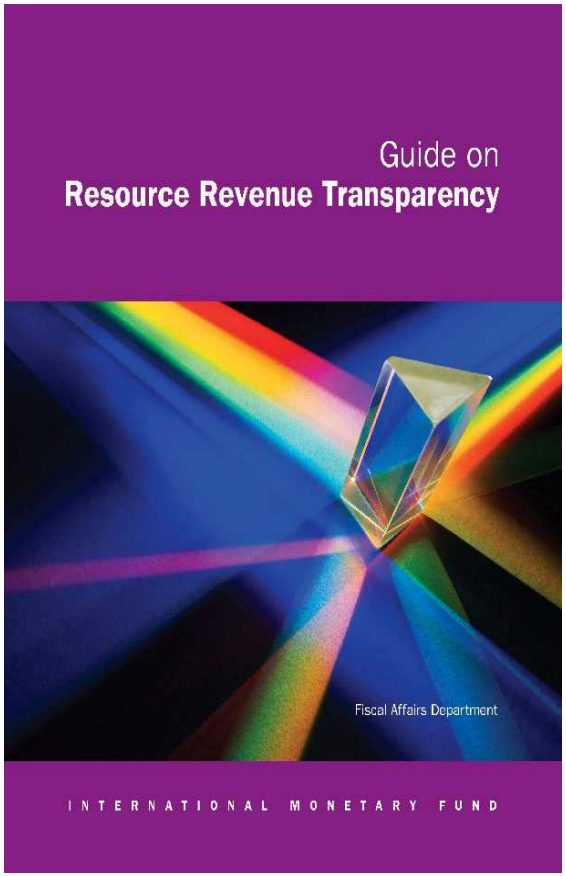
- If it is necessary to administer a corporate income tax, rent taxes require no more information.
- Go for simplicity and get the basics of administration right.
- Experts needed but not necessarily in large numbers

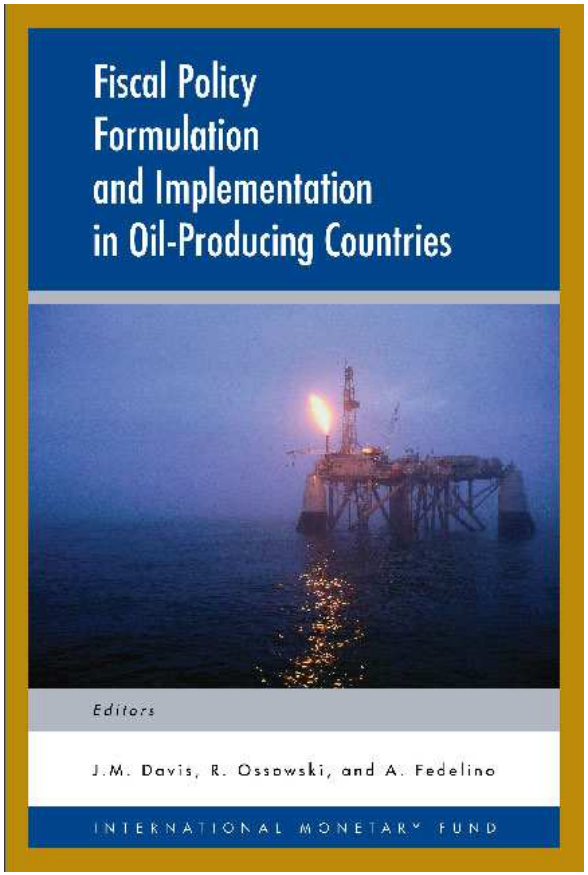
SUPPORT to MIDDLE INCOME and DEVELOPING COUNTRIES on NATURAL RESOURCE ISSUES

- Significant support provided by IMF and World Bank
- Some support via OECD Global Relations programme on related issues
- Bilateral donor support from countries with significant experience and expertise, Australia, Canada, Norway, US, UK
- Consultancy firms and specialist professional lawyers and economists on commercial basis

IMF (FAD) TA ACTIVELY ENGAGED and RESEARCH-BASED







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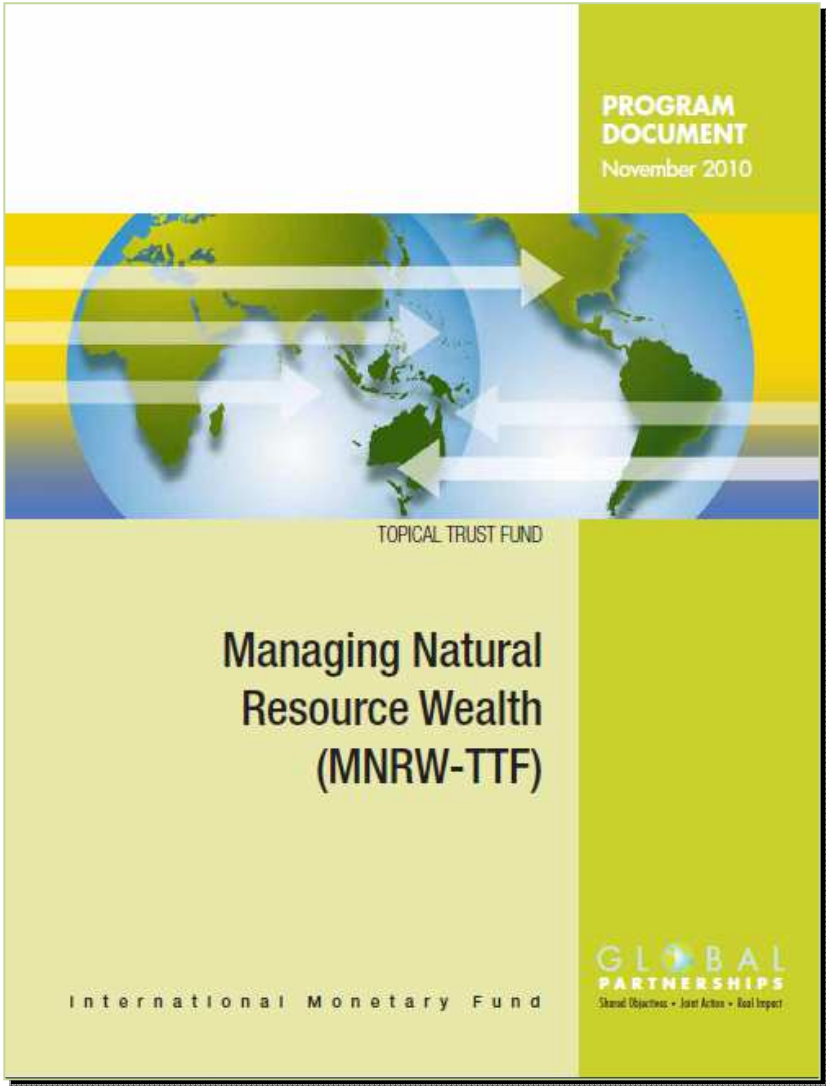
IMF EXPANDING ADVISORY WORK…



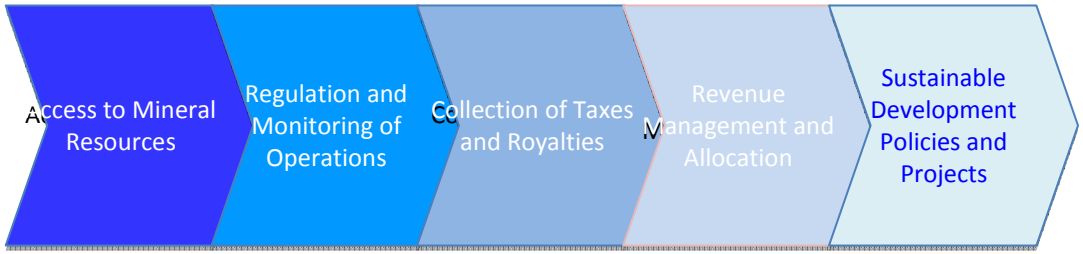
- New Trust Fund with lead donors – Norway, Australia, Switzerland, and EU Commission, together with the Netherlands and Kuwait
- 5 year program, US$25 million
- Permits large scaling up of TA advisory work, especially fiscal
- Initial projects: Congo DR, Sierra Leone, Uganda, Iraq, Lao PDR, Mongolia, Timor-Leste, Andean Region.

IMF CONSULTATION on TAXATION of NATURAL RESOURCE RENTS

- IMF Board Paper being prepared on efficient and equitable taxation of resource rents in developing resource rich economies
- Views requested on questions about design and administration: www.imf.org/external/np/exr/consult/2012/NR/
- Private and public responses (with replies posted on IMF website) possible
- Board paper publication expected in July 2012

WORLD BANK GROUP SUPPORT on EXTRACTIVE INDUSTRIES (EI)

- The WBG looks at EI (oil, gas, and mining) through their contribution to broader economic development
- Technical assistance and capacity building loans and grants, advisory services, and research on EI are organized along the “EI value chain”.



WORLD BANK GROUP SUPPORT on EXTRACTIVE INDUSTRIES (EI)

- In addition to its lending and advisory services, the World Bank manages a number of EI Global Partnerships :
  - The **EI Technical Advisory Facility** ($ 10.8 million) is a rapid response facility designed to assist resource-rich countries structure oil, gas and mining transactions and related sector policies, including taxation and the award of exploration and exploitation rights.
  - The **EI Transparency Initiative** ($50 million) trust fund is managed by the World Bank's oil, gas, and mining unit, and provides countries with technical assistance and grants to implement the EITI principles of revenue transparency and accountability, as well as support capacity building for civil society.

WORLD BANK GROUP SUPPORT on EXTRACTIVE INDUSTRIES (EI)

- The **Global Gas Flaring Reduction Initiative** ($ 19.3 million) is a private-public partnership that supports national efforts to use currently flared gas by promoting effective regulatory frameworks and tackling the constraints on gas utilization, such as inadequate incentives, insufficient infrastructure and poor access to local and international energy markets, particularly in developing countries.
- The **Petroleum Governance Initiative** ($10.7 Million) is a bilateral collaboration of the Government of Norway and the World Bank Group designed to achieve structured cooperation on petroleum sector governance issues and in particular on support to developing countries for the implementation of appropriate petroleum governance frameworks including resource and revenue management and linkages to environmental and community issues.
- **CASM** ($1.8 Million) is a multi-donor trust fund aimed at reducing poverty by supporting integrated sustainable development of communities affected by or involved in artisanal and small-scale mining in developing countries.

WORLD BANK GROUP SUPPORT on EXTRACTIVE INDUSTRIES (EI)

- Example of knowledge product related to taxation (http://go.worldbank.org/O877RNB2E0):
  - Mining Royalties: A Global Study of their Impact on Investors, Government, and Civil Society, World Bank, 2006.
  - Fiscal Systems for Hydrocarbons, World Bank Working Paper Series #123, 2007.
  - Petroleum Exploration and Production Rights: Allocation Policies and Design Issues, World Bank Working Paper Series #179, 2009.
  - Government Response to Oil Price Volatility: Experience of 49 Developing Countries, Extractive Industries for Development Series #10, World Bank, 2009.
  - Financial Surety: Guidance Notes for the Implementation of Financial Surety for Mine Closure, Extractive Industries for Development Series #7, 2009.
  - National Oil Companies and Value Creation, World Bank Working Paper Series #218, 2011.
- Knowledge platforms:
  - EI Source Book, an open access repository of research and data on EI (http://www.eisourcebook.org/)
  - GOXI, an open access platform to connect practitioners, governments and CSO towards greater accountability and better development outcomes of EI (www.goxi.org)

RESOURCE EXTRACTION AND ENVIRONMENTAL ISSUES

- Are the prices on inputs used by production companies right?
  - Energy and water intensive production methods may not be commercial if they had to meet true environmental costs.

    E.g. Canada Tar Sands; “heating up rock”

Also distortions to demand for energy products through subsidised consumption – what happens if subsidies removed?

ENVIRONMENTAL ISSUES in PRODUCTION

- Pollution
- Flaring of associated gas
- Conflict and sabotage with environmental consequences , e.g. Niger Delta region
- Small chance of catastrophic failure – learning from the US Deepwater Horizon disaster.
- "Gold plating" rather than cost savings may look unattractive (to governments AND companies) until disaster strikes – are the incentives right?

ENVIRONMENTAL ISSUES – LEGACY ISSUES

- Decommissioning when production stops

- Costly: best technical options vs. Political and legal and administrative acceptability

- Impact of decommissioning arrangements on who operates projects if default risk on decommissioning costs is to be minimised

- Revenue cost of trust fund arrangements

NEW OPPORTUNITIES TO MITIGATE ENVIRONMENTAL ISSUES but unlikely to take hold in developing countries

- Carbon Capture and Storage
- Old gas fields as storage for CO2 from coal fired generation
- Tax issues and complexities – deferred decommissioning and cost allocation across different businesses – storage vs. gas production
- Or less problematic Enhanced Oil Recovery (but can companies good at this get access to resources outside developed countries)

ENVIRONMENTAL CONCLUSIONS

- Get the other environmental taxes right and investments in natural resource extraction should be efficient from environmental perspective, but how likely is this?
- Decommissioning - needs to be dealt with in advance as very costly
- Incentives for dangerous cost cutting vs. gold plating
- Catastrophic risk – how to price (e.g. are Arctic investments too risky?) and insure against

INDIRECT ENVIRONMENTAL IMPACTS

More speculatively:

- Resource wealth translated into higher incomes for most citizens of producer countries. Environmental quality is a “luxury good” to some degree. Indirect impact on environment positive?

- Resource wealth translated into consumption patterns with significant negative environmental impact. Indirect impact on environment negative?

Question over future overall net indirect impact.