# The Taxation of Petroleum and Minerals: Principles, Problems and Practice

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*Design and execution of an upstream taxation regime for natural resources (1)*

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The Taxation of Petroleum and Minerals:
Principles, Problems and Practice

Edited by Philip Daniel, Michael Keen,
and Charles McPherson

Routledge / IMF, 2010

www.imfbookstore.org
www.routledge.com/978-0-415-56921-7

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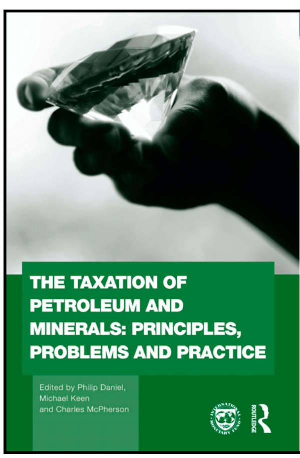


"There are few areas of economic policymaking in which the returns to good decisions are so high – and the punishment of bad decisions so cruel – as in the management of natural resource wealth"

Preface
Dominique Strauss-Kahn
Managing Director, IMF

## What's special about taxing resources?

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- Tax revenue a/the central benefit to host country
  - Especially hydrocarbons (70 percent of government receipts in Algeria, Yemen), but not only (minerals 9 percent in Chile)
- High sunk costs, long production periods
  - Create 'time consistency' problem
- Substantial rents
  - The ideal of a non-distorting tax base!
- International considerations loom large
  - Foreign tax rules matter
  - Tax competition

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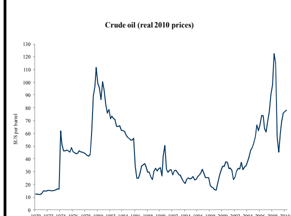
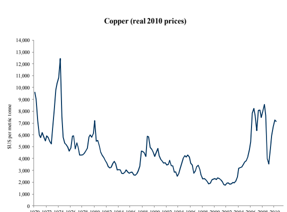
- Uncertainty
  - from technology, geology, price volatility…




…and political risk

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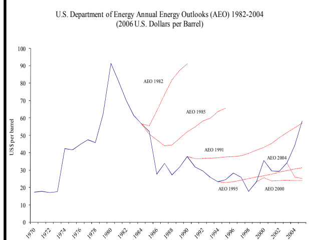
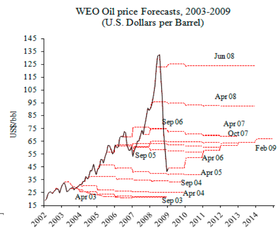
## Two Oil Price Booms
## Oil Prices: Spot and Projections




Sources: U.S. Department of Energy Outlook (1982,1985,1991, 1995, 2000 and 2004); and IMF World Economic Outlook (2003,2004,2005,2006,2007, 2008, and 2009). After Ossowski et. al. (2008)

Note: Solid lines on the left chart are spot WTI oil prices, on the right chart are WEO average of WTI, and Fateh. The dashed lines are price projections.

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- 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
  - Affects impact of taxation
  - Views differ on how important this is in practice

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## What's in the book?

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## Topics

- Overview: Concepts and low income country issues
- Sectoral issues (oil, minerals, gas)
- Special topics (evaluation, RRT, state participation, auctions)
- Implementation (administration, international tax)
- Stability and credibility

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## Aims

- Taking stock: consolidate and take forward current knowledge in the field (topic fell out of fashion).
- Audience: intended for both academic and practitioner use; corporate, government and civil society.
- Best practice? No – concentrates on principles, criteria and methods to apply in different circumstances.
- Public finance and resource taxation: tries to join insights from two strands of literature, independently developed.
- Combine theory and practice: ranges from theoretical framework to details of tax administration.

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## Six themes

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## (1) Should resource taxes be progressive?

...in sense of government's share being larger the higher are prices/profits/lifetime project return?

- Yes, if government better able to bear risk than investor
  - But opposite likely true in many developing countries
- Political pressures may make progressive systems more robust and credible

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## (2) Multiple instruments may be needed

- Rent taxation is most efficient in principle
- Royalties, in contrast, distort extraction and exploration
- But royalties may still have an important role, to:
  - Assure some revenue from day 1 of production
  - Recognize that rents may be hard to observe perfectly
  - Avoid over-extraction when contract period short (implicit depletion policy)
- Problems of regular corporate income tax

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## (3) The merits and problems of auctioning

- Auctions can (1) allocate clear rights (2) to the most efficient producer (if well-designed), all (3) in a transparent way
- Design matters—including bid variables
- Why so little used for minerals?
- How many bidders is enough?

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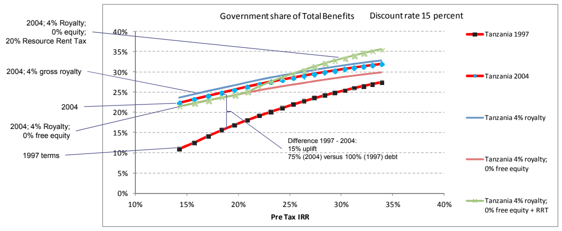
## (4) Evaluating Regimes— Detail matters




- FAD's models can be used for detailed evaluation of fiscal terms changes:
  - Depreciation rules
  - Royalty rates and basis
  - Thin capitalization/Debt proportion
  - Indirect taxes (import duties, VAT)
  - Government equity participation
  - Ring fencing

## (5) Administration— How tough can it be?

- Helps that commodity prices readily observable…
  …but dealing with complex MNCs always hard
- Important to do the simple things right
- Royalties not as easy to administer as may seem…
  …but rent taxes maybe not as hard

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## (6) Achieving credibility— is hard

- Developed over years in Norway
- Prospect of future discoveries may help
- Fiscal stability agreements?
  - Can be over-generous
  - Effectiveness unclear—renegotiation possible
- Some designs more credible than others
  - Progressivity?

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## What next?

Thank you!

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