

NATURAL RESOURCE TAXATION



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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”

THE TAXATION OF PETROLEUM AND MINERALS: PRINCIPLES, PROBLEMS AND PRACTICE

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and Charles McPherson



Dominique Strauss-Kahn
Managing Director, IMF

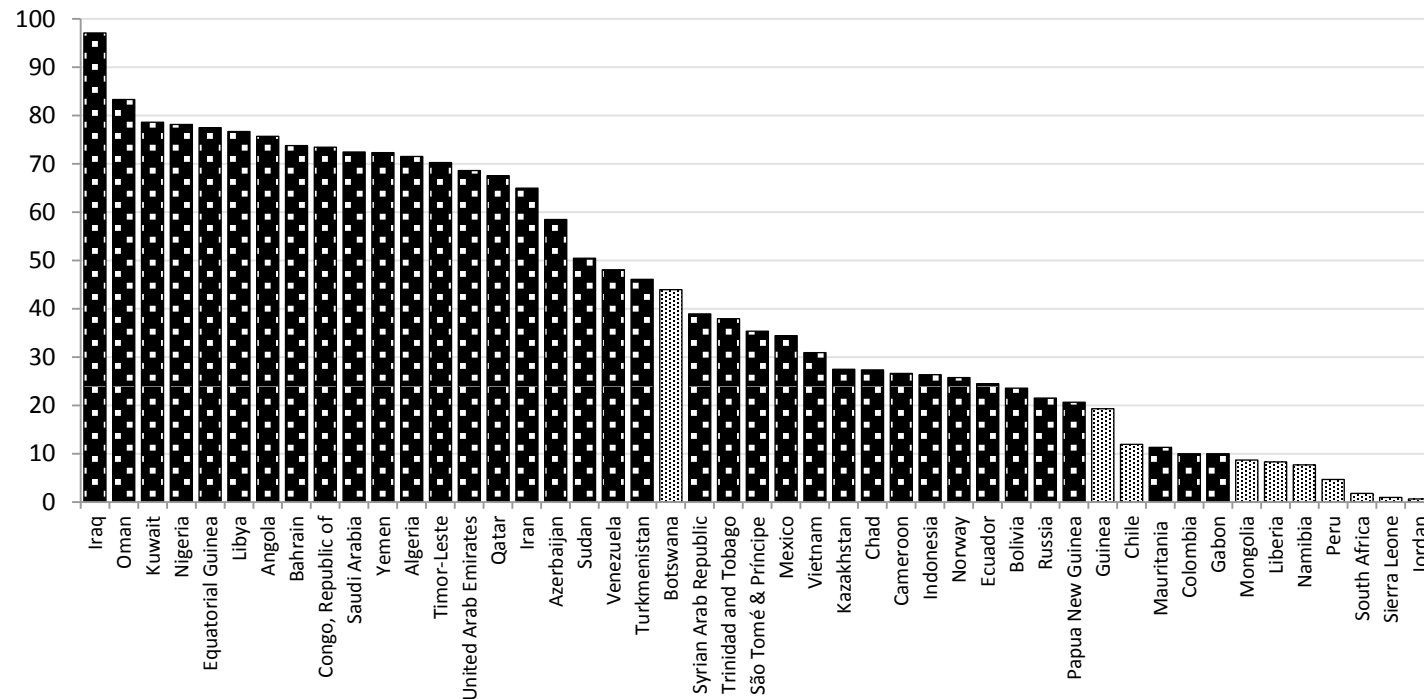
Outline

- What's so special about resource taxation?
- Seven key issues

What's so special about
resource taxation?

- Tax revenue a/the central benefit to host country
 - Especially, but not only, hydrocarbons

Receipts from petroleum and minerals
in percent of government revenues (average 2000-2007)



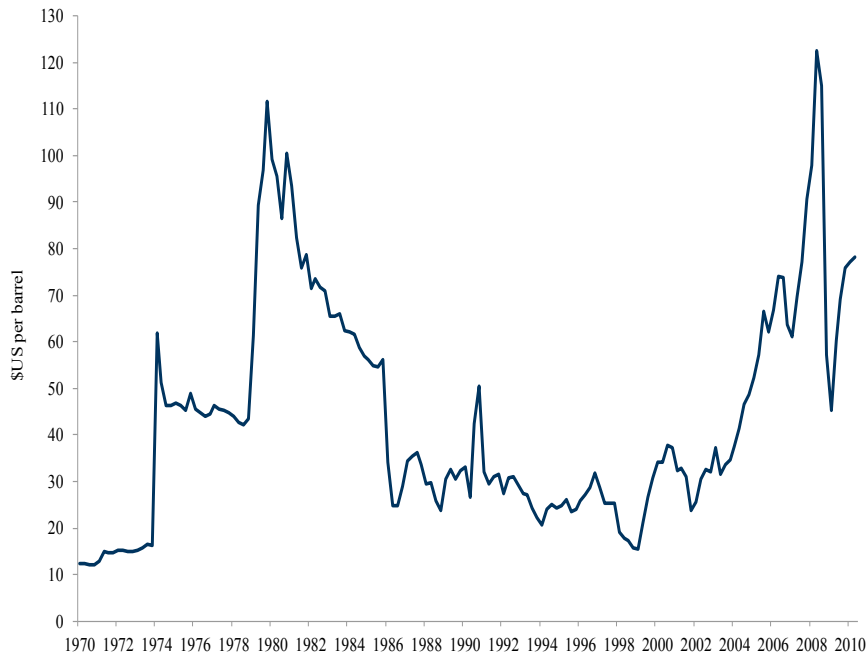
- With powerful implications for rest of tax system



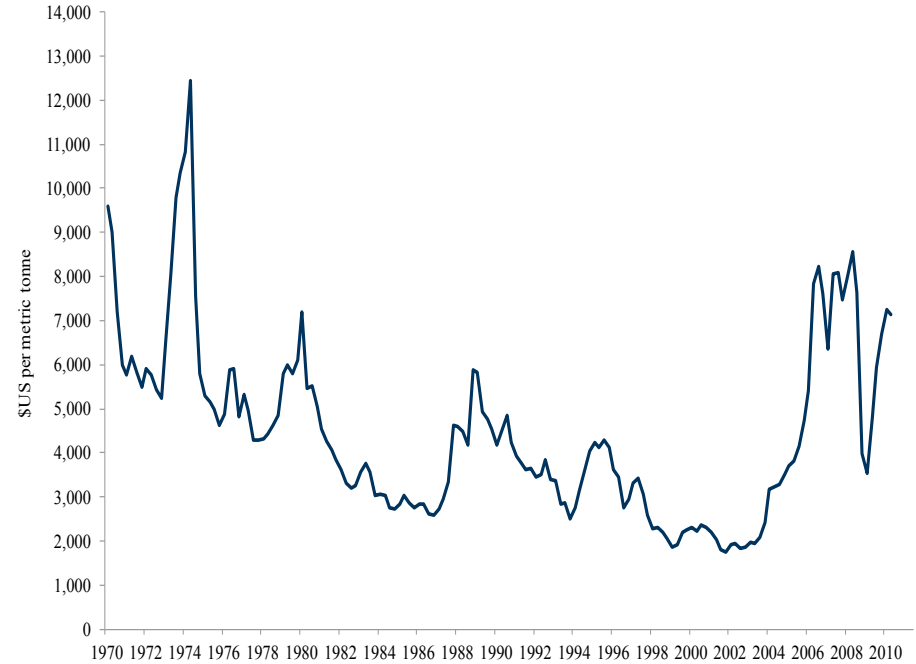
- High sunk costs, long production periods
 - Create a ‘time consistency’ (trust!) problem
- Substantial rents (i.e. returns above minimum required)
 - The ideal of a non-distorting tax base!
- International considerations loom large
 - Foreign tax rules matter;
 - Tax competition

- Uncertainty
 - from technology, geology, with prices that are volatile...

Crude oil (real 2010 prices)

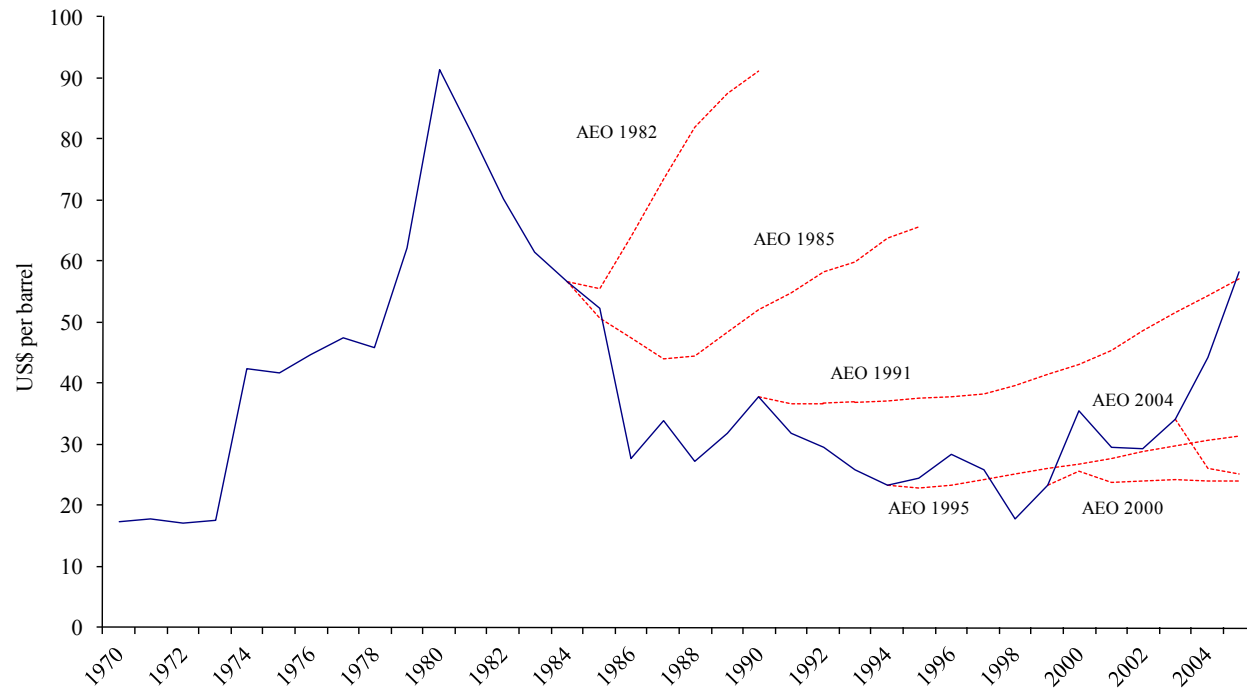


Copper (real 2010 prices)



...and hard to predict:

U.S. Department of Energy Annual Energy Outlooks (AEO) 1982-2004
(2006 U.S. Dollars per Barrel)



And political risk too

- Asymmetric information

Few of these features 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



SEVEN KEY ISSUES

1. Role and design of rent taxes

- Various possible forms, with differing revenue paths:
 - 'Brown' (=cash flow) tax
 - 'Resource rent tax': carry forward losses at interest
 - ACE (or allowance for corporate Capital)
- For neutrality, relief to be given for exploration costs (Norway)
- Australia proposals (ACC type)
- Norway perhaps closest

2. Should resource taxes be progressive?

..in sense of government's share being larger the higher are prices/profits/lifetime project return?
(e.g. price-sensitive royalties, additional tax on high returns...)

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

3. Multiple instruments may be needed



- Rent taxation is most efficient in principle
- Royalties 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
 - An implicit depletion policy: e.g. avoid over-extraction when contract period short (implicit depletion policy)
- Problems of regular corporate income tax

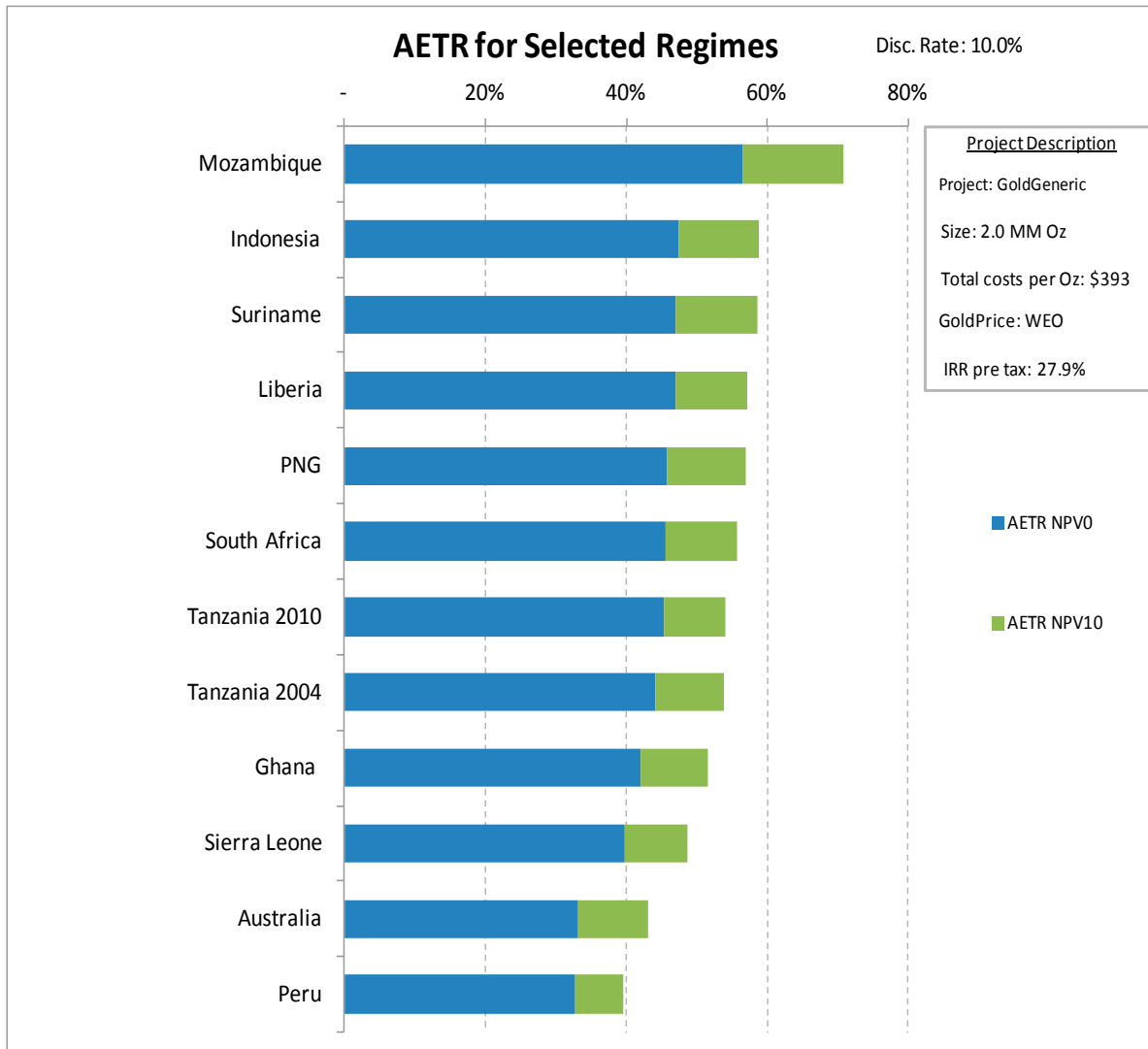
4. Careful evaluation pays off

Four key indicators

- *Average effective tax rate* (AETR): the tax share of net cash flow discounted at a chosen rate
- *Marginal effective tax rate* (METR): the tax “wedge” between the pre- and post-tax rate of return
- *Breakeven price*: the output price required to yield a specified rate of return to capital
- *Progressivity*: E.g. variation of AETR with project return



For a simulated gold project (using FAD's 'FARI'): *AETR*



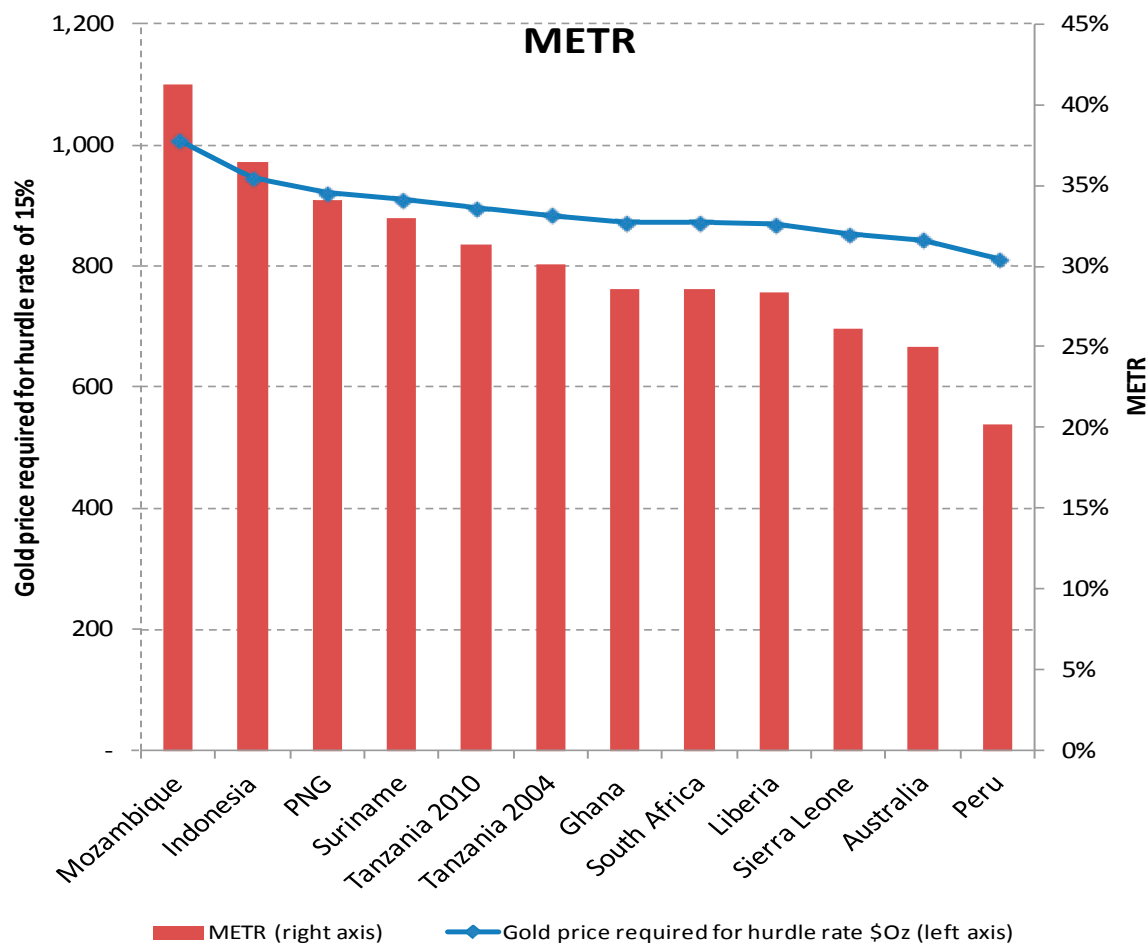
Project

- 2 million ounces gold produced over 12 years @ 200 thousand oz. per year
- Exploration and Development costs \$485 million
- Operating costs \$150 per ounce

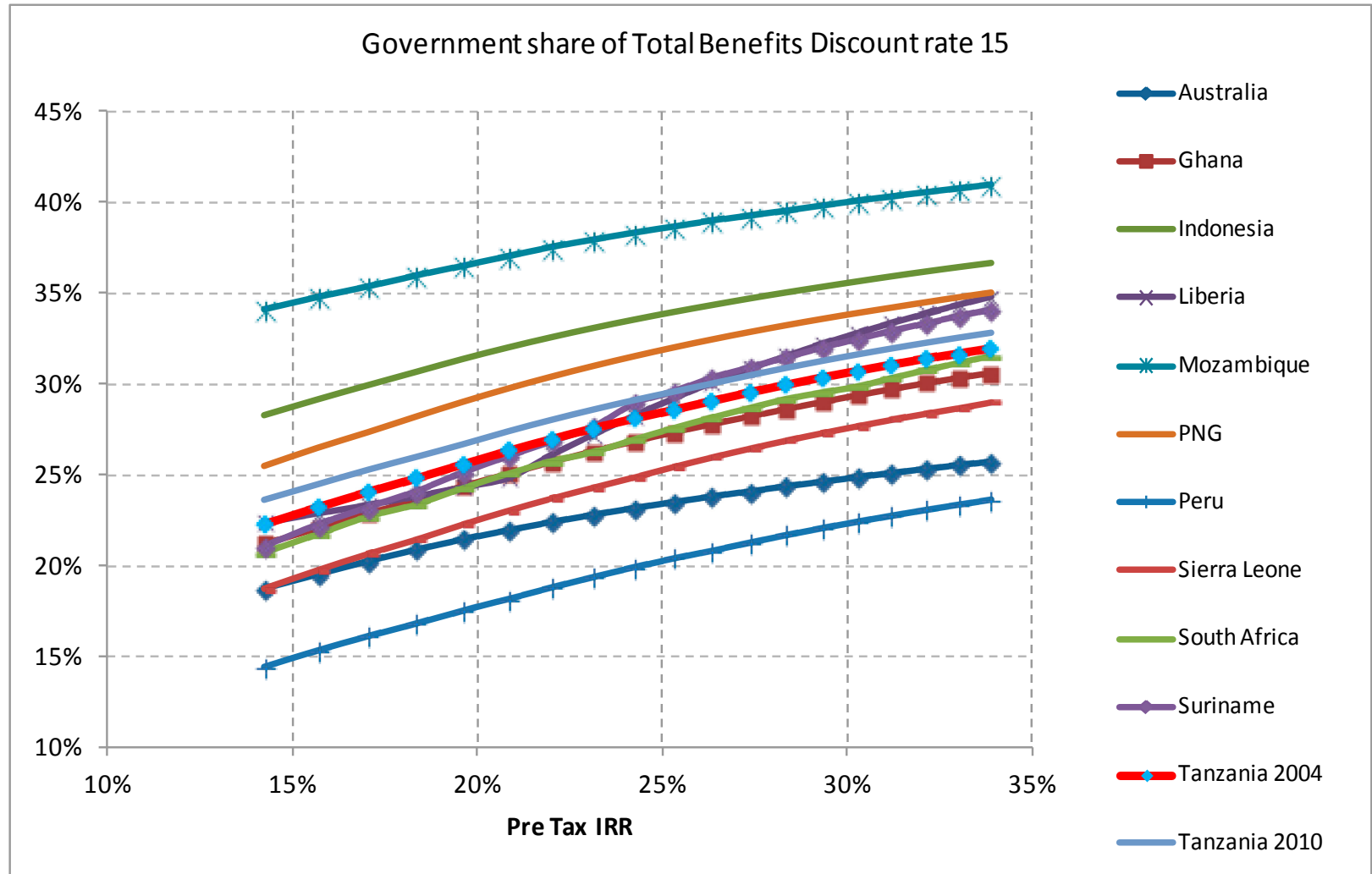
Note:

- Outcome dependent on application of withholding taxes, that may be varied by treaties.

METR and breakeven price



Progressivity: Variation in AETR



5. Merits and problems of auctioning



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



6. 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

7. 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?
 - International agreements? (Maximum/Minimum rates)

Concluding