



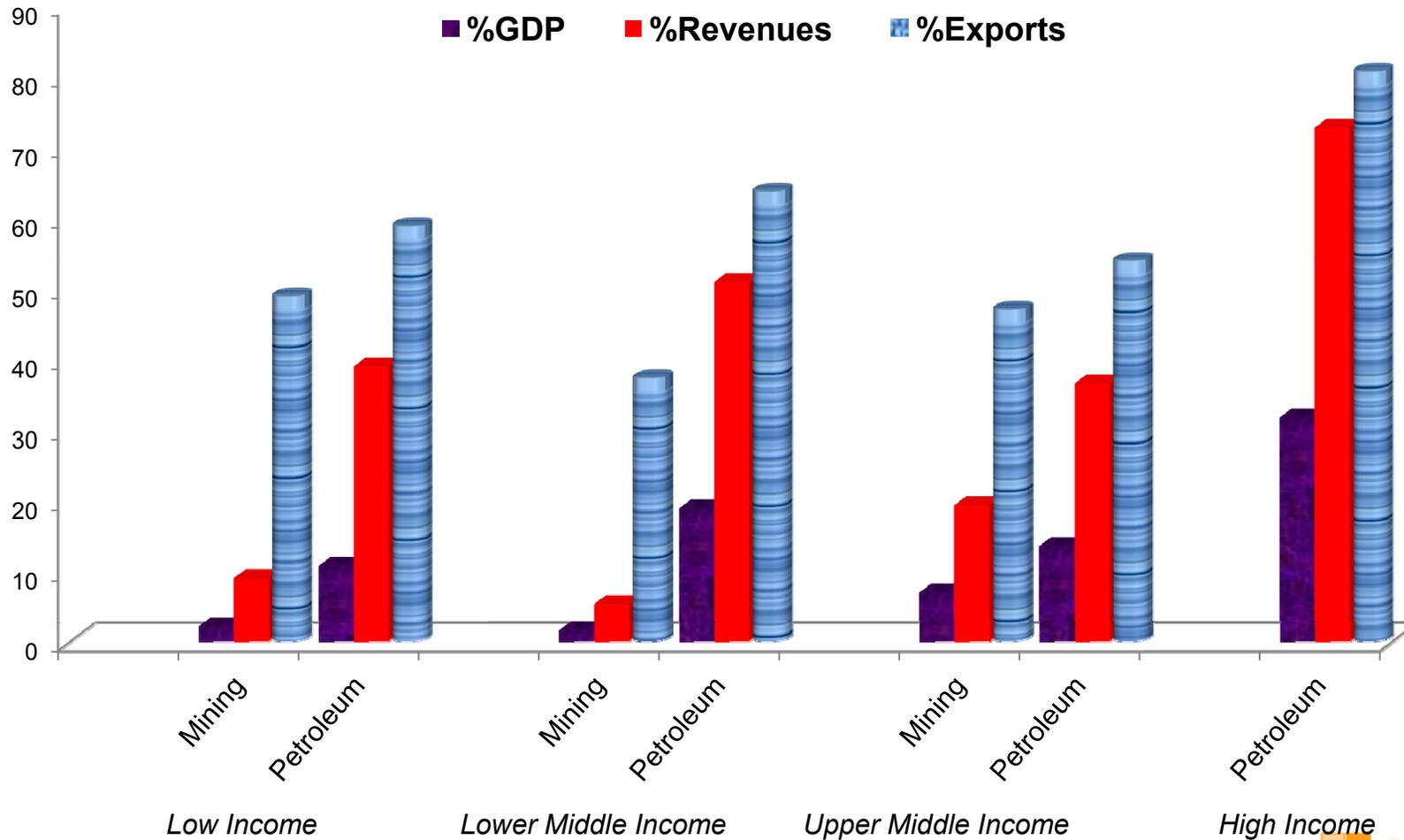
Mining And Petroleum Taxation: Principles And Practice

Carole Nakhle

Revenue Mobilization and Development

IMF, DC, 2011

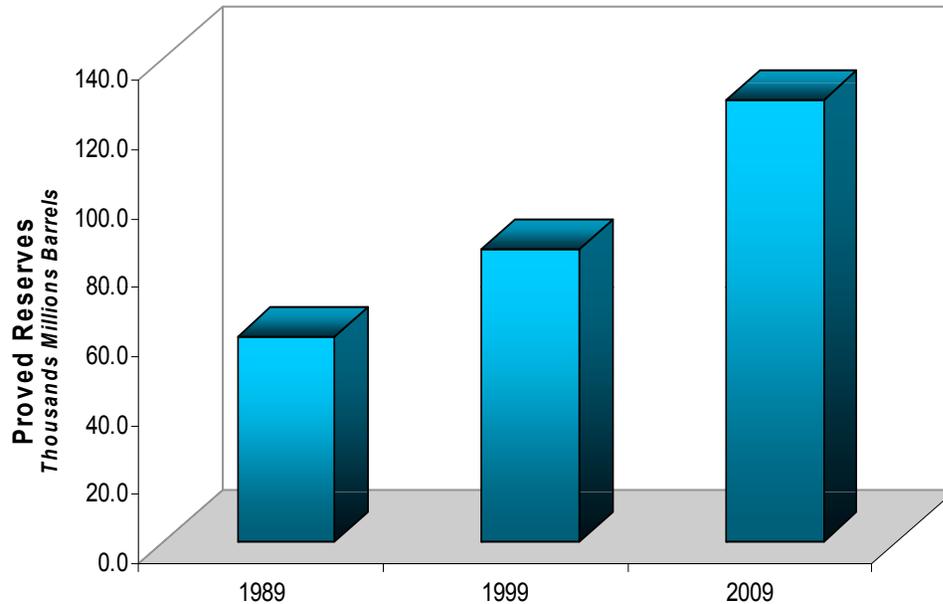
Economic Contribution in 52 Developing Countries



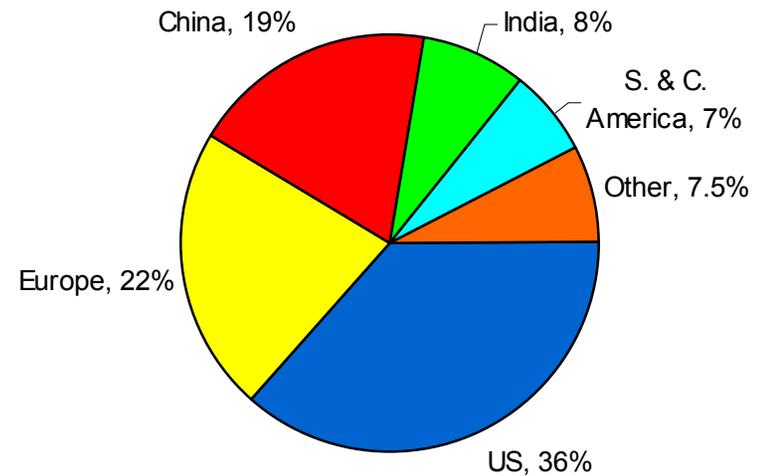
Source: IMF, 2010

Growing Potential

Africa Proved Oil Reserves



West Africa Oil Exports 2009



- Developing countries produce 70% of the world's minerals
 - *'Only 20% of Africa's natural resources discovered so far' (Collier, 2010)*
- Fiscal and regulatory regimes - major factors in whether the potential is realised

Source: BP Statistical Review, 2010

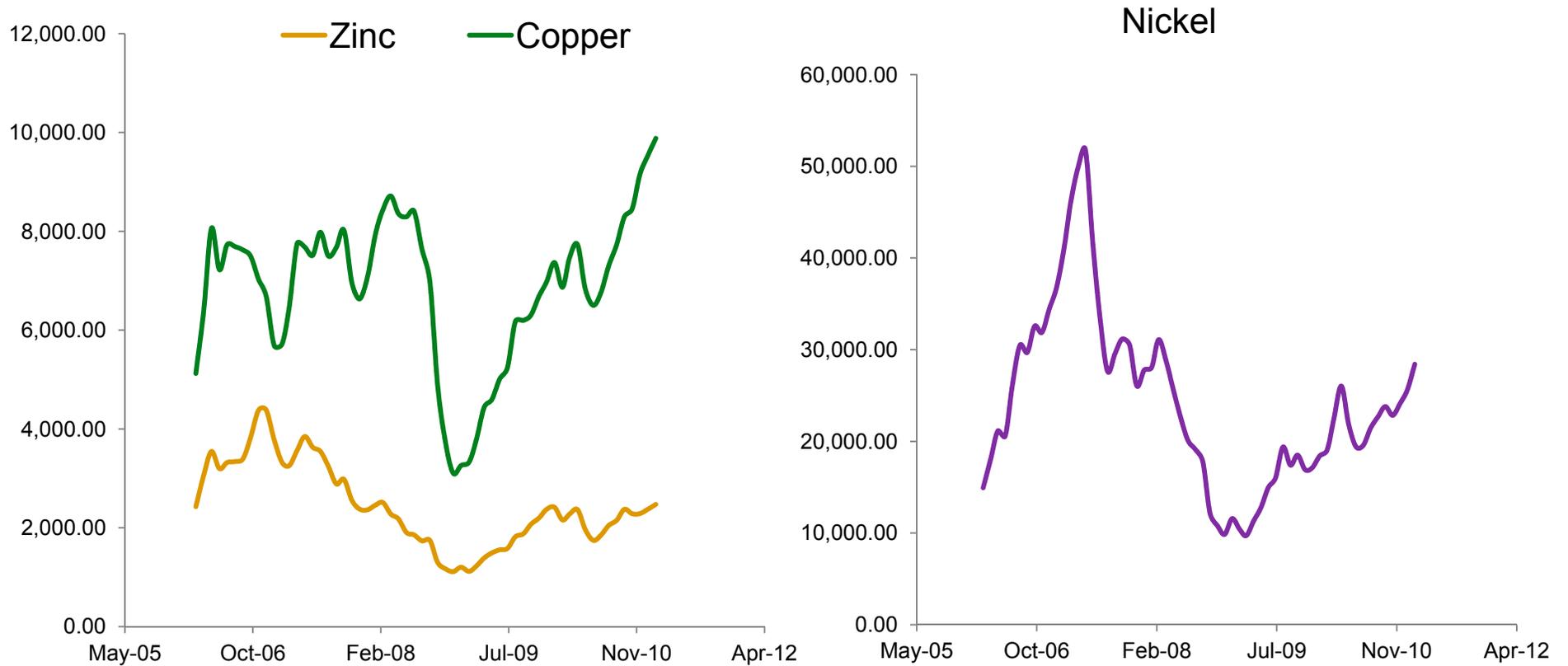
Extractive Industries - Distinctive Features

- Large up-front capital requirements and long lead times between initial investment and first revenues generated
 - Difficulty in obtaining external funding
 - Late payback

- Geological uncertainty
 - Exploration - speculative activity, many failures
 - *'Only when the deposit is exhausted do you know precisely what the reserve was' (Andrews-Speed, 1998, p.6)*

- Wide range of technical, commercial and political risks

Market Uncertainties



5 year Prices (US Dollars per Metric Ton)

Source: Index Mundi, 2011



Other Distinctive Features

- Environmental concerns
 - CO2 emissions, disruptions to land, wastes, pollutants ...
- Non-renewable natural resources
- Potential for economic rent
 - *'The value of a resource at the point of production less all prior costs incurred, including a suitable return on investment'* (Watkins, 2001)
 - Desirable tax base
- In general, state ownership of the resources
 - Resolution of the UN General Assembly on Permanent Sovereignty over Natural Resources (A/1803 (XVIII), December 14, 1962.
 - Access to resources

Special Treatment for Special Industry

- Common approach - a combination of royalty and income tax

- Royalty
 - Compensation for the reward of ownership
 - Per-unit tax (levied on output) or ad-valorem tax (levied on the value of the output)
 - Source of early revenues

- Profitability-based Tax
 - Mainly income tax at higher rates, occasionally additional special taxes
 - Economic rent = higher taxable capacity

- Other possible payments: bonuses...

The Oil Industry: Even More Distinctive

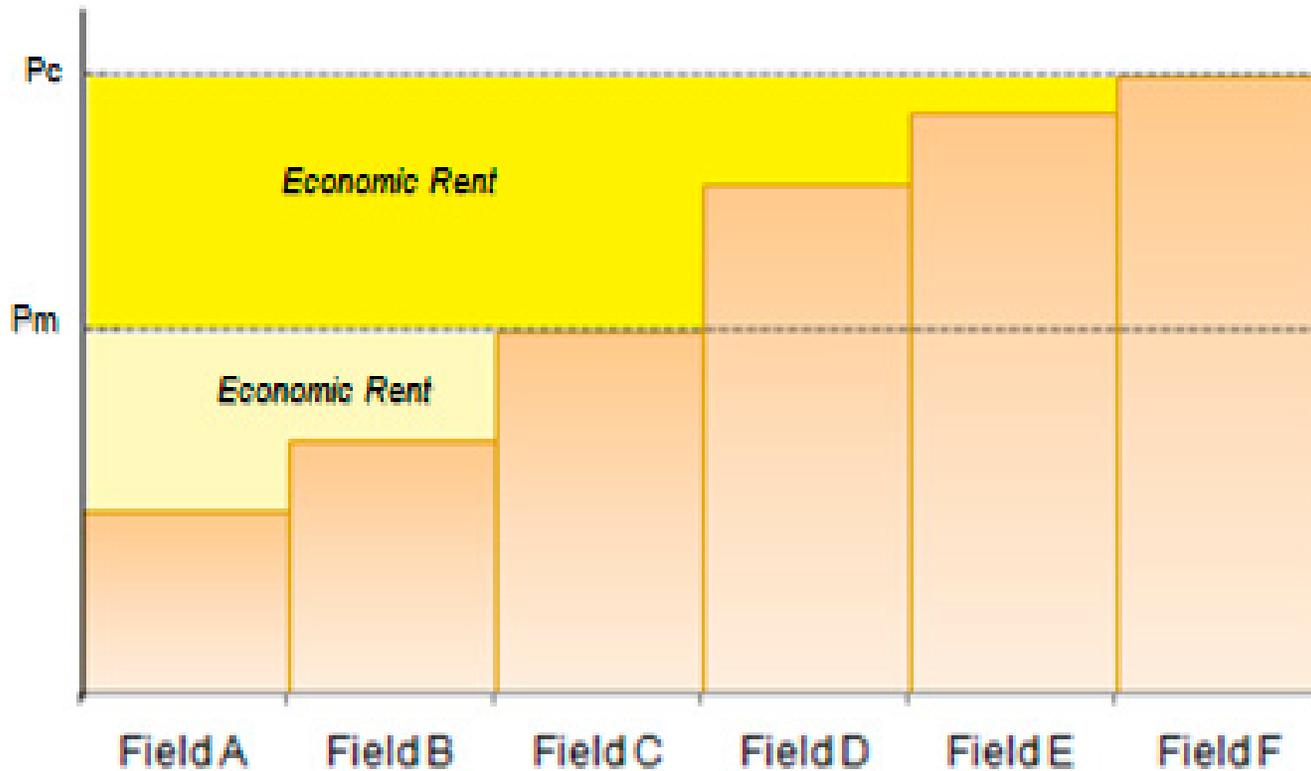
- Risks and costs greater than in mining (offshore oil/gas)
 - More capital, less labour intensive
 - Cost of drilling of one oil well exceeds that of a diamond drill hole by a factor of 10 to 20 times on a per metre basis
 - Well depths: 1,000 and 5,000m compared to typically less than 500m for a diamond drill hole

- Oil - a valuable source of energy, with no close substitute
 - Energy enters directly or indirectly all economic activities
 - Oil has wider applications than any single mineral
 - Transport, power generation and petrochemicals

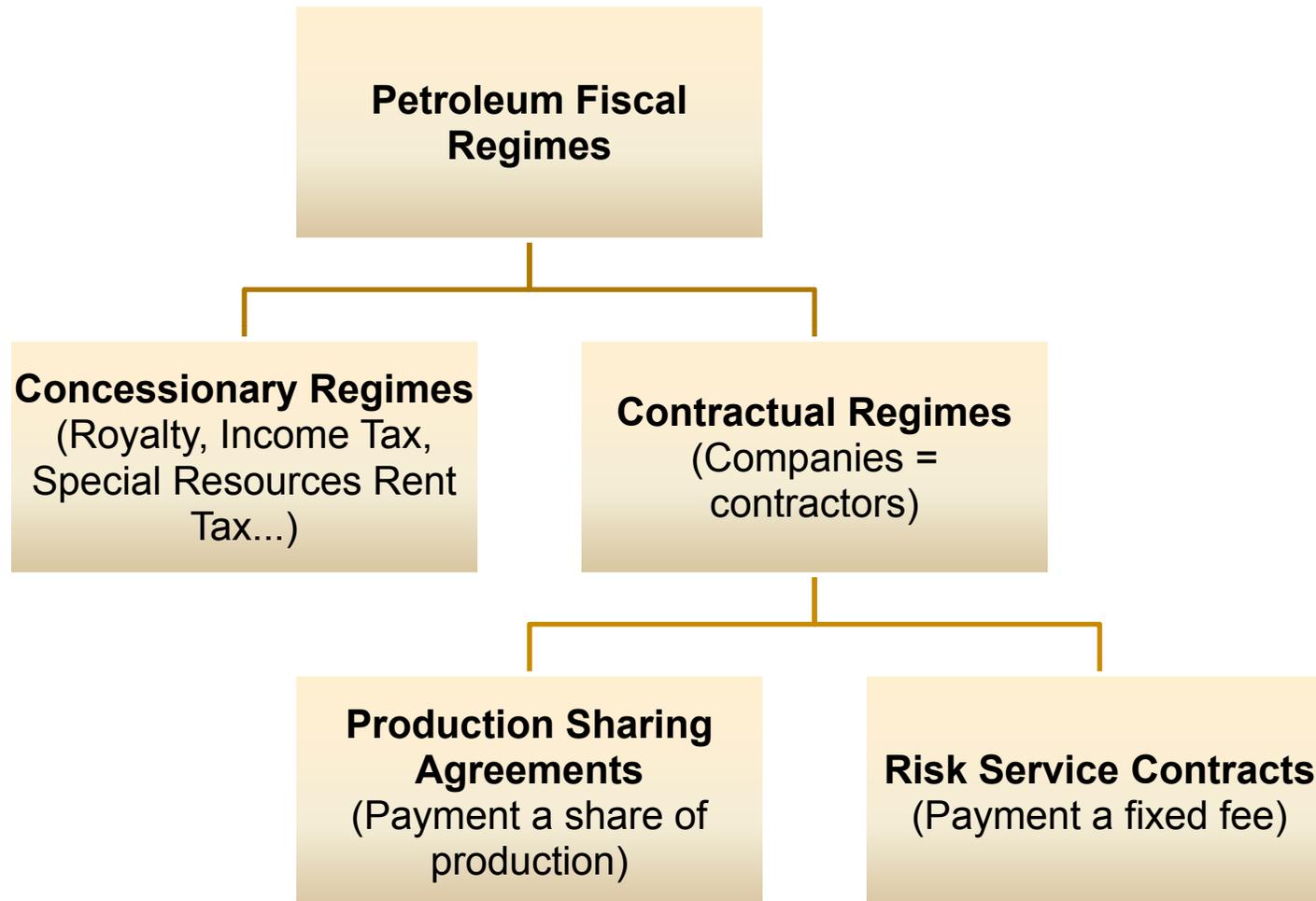
Oil vs. Mining

- Greater concentration of (low cost) reserves
 - 63% in the Middle East
 - Security of Supply
 - Access to oil resources is more limited
 - Fierce competition among oil companies to obtain acreage
- Market structure less competitive
 - OPEC cartel controlling the largest and lowest cost reserves
 - Output restriction raises the price above the competitive level
- More visible public ownership and greater state participation
- Higher economic rent

Economic Rent: Market vs. Cartel



More Elaborate Fiscal Arrangements



Mining and Petroleum Taxation

	Mining	Petroleum	
	R&T	R&T	Contractual
Royalty - Unit Based - Ad Valorem	Rare Common	Rare Common	Rare Occasional
Income Tax	Common	Common	Common
Special Tax	Rare	Common	Rare
Bonuses	Rare	Occasional	Common
DMO	Rare	Rare	Common
State Participation	Occasional	Occasional	Common
Top Marginal Rates	40-60%	60-85%	60-90%

What The Theory Tells Us

- An ideal tax is:
 - Neutral
 - does not distort investment decisions
 - Fair
 - Firms that exploit more valuable resources have greater ability to pay and so their tax liabilities can be greater
 - Risk-sharing, progressive tax?
 - Clear and simple
 - Administrative efficiency - Easy to understand and to administer
 - Stable
 - Continuous tinkering increases the fiscal risk and negatively affects investors' confidence

... among others

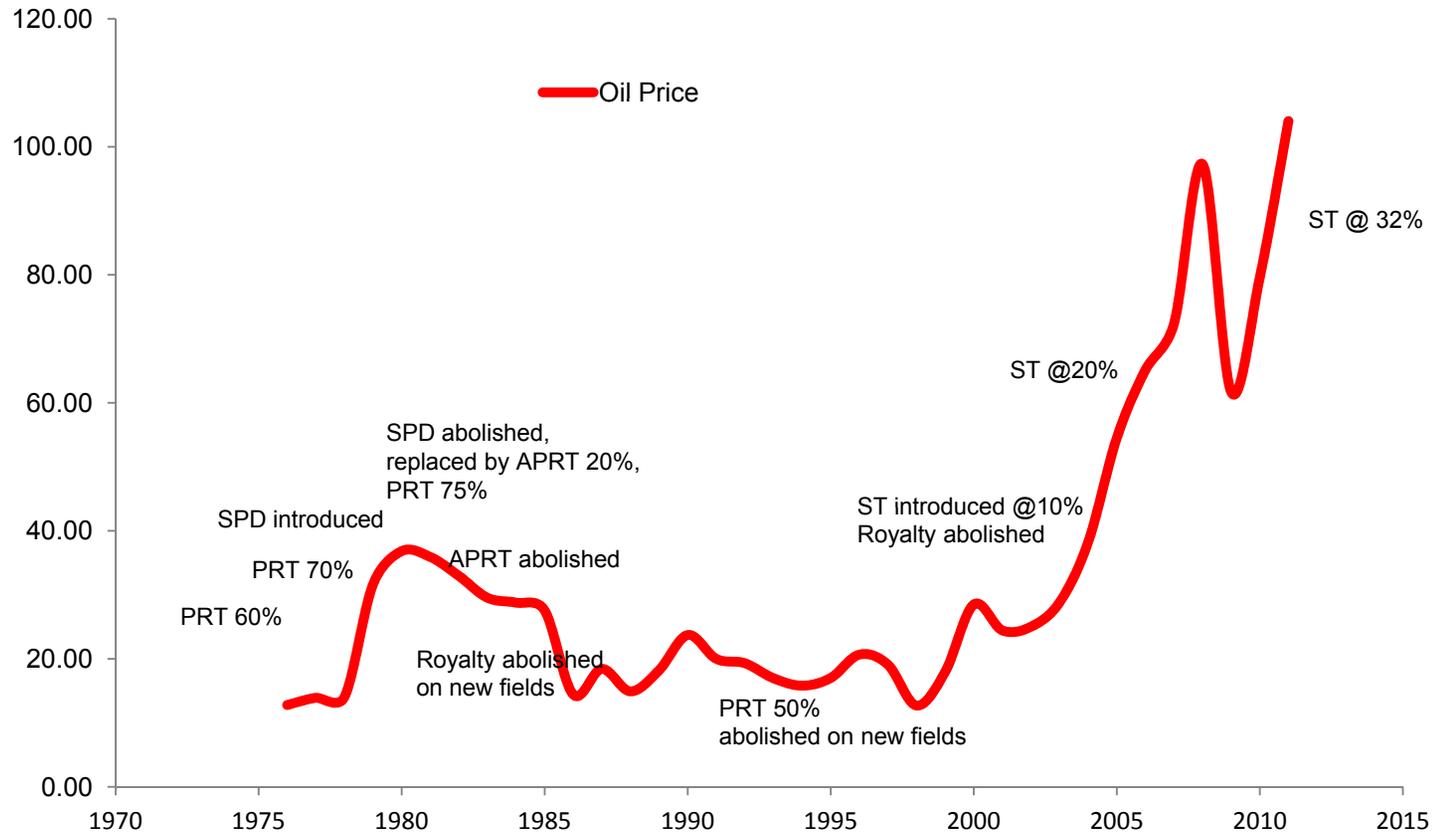
In Practice - No Ideal Tax

- Economic rent – most desirable tax base:
 - How to determine them?
 - Profit-based taxes – not always simple
 - Late revenues to Government

- Royalty:
 - Early source of revenues
 - Up-front effect – kicks in as soon as production starts and irrespective of the size of the field; equivalent to an increase in the resource extraction cost

- Ideal taxes exist just in theory; in practice, a combination of several tax instruments is advisable

The UK Experience: Chasing the Oil Price



Nominal terms

Getting The Balance Right

- Commonly stated objective:
 - 'To generate a *fair* share of revenues to the Government while sustaining investment'
 - What is fair?

- Misguided judgements based on:
 - The type of regime in place and the rates imposed
 - Details matter!
 - Embracing blindly: 'others have done it, we should follow'

- Fiscal terms tailored to investment opportunities in the country:
 - Balancing the need to have an internationally competitive regime with government policies that reflect the nation's unique priorities

Taxation – One Of Several Pillars

