

FISCAL MANAGEMENT OF MINING AND PETROLEUM IN WEST AFRICA

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Fiscal Regimes for Extractive Industries in West Africa: Principles and Practice

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Agenda

- Why special fiscal regimes for mining and petroleum?
- Types of fiscal regimes and instruments
- Brief survey of regimes in selected West Africa countries
- Fiscal regime evaluation: an illustration using a stylized petroleum field

WHY SPECIAL FISCAL REGIMES FOR MINING AND PETROLEUM?

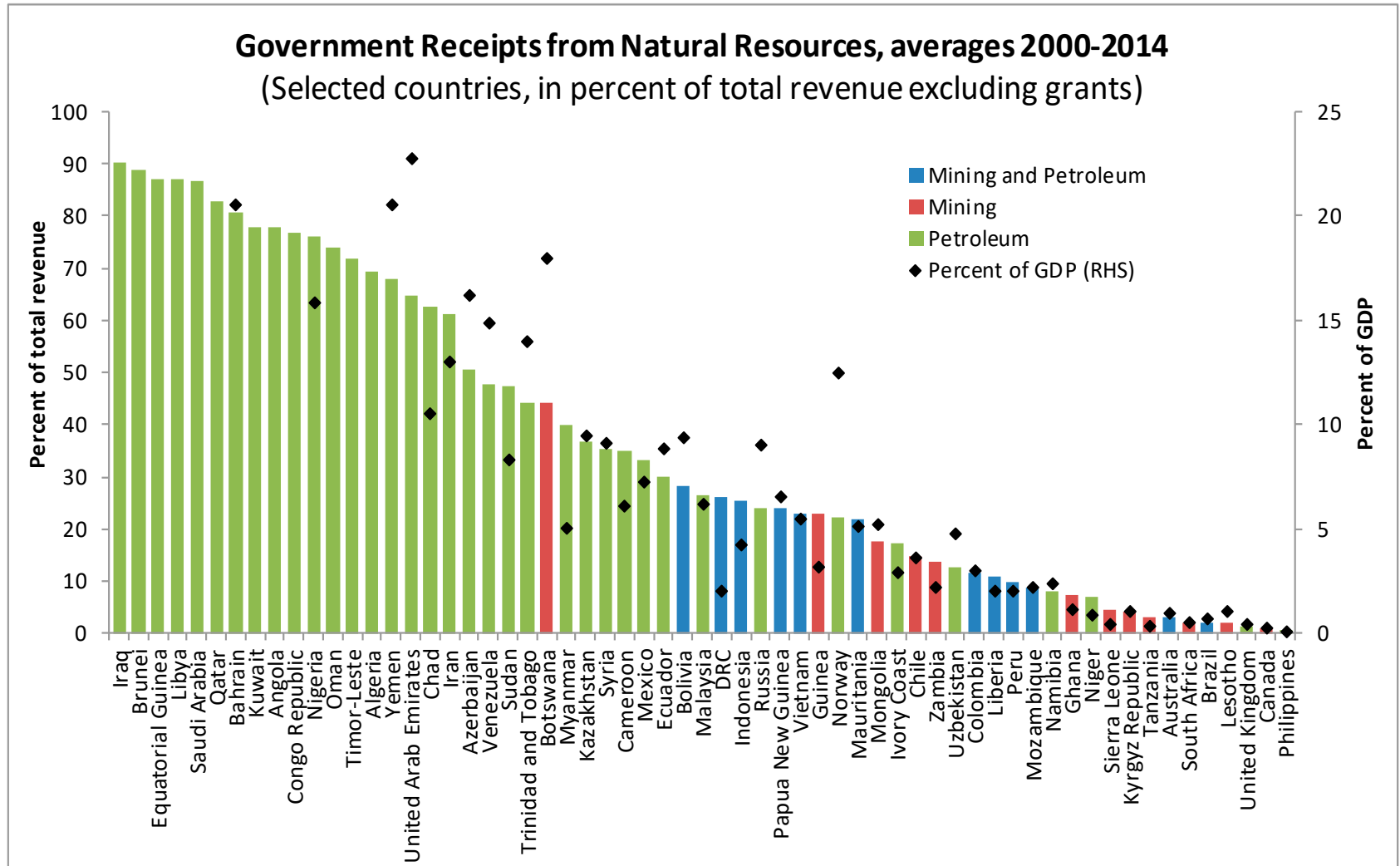
How is the fiscal regime defined?

- A system combining tax and non-tax instruments to raise government revenue from resource extraction
- It includes conventional instruments such as royalty and CIT, as well as contractual schemes such as PSCs
- It can further include elements of state participation with a fiscal effect on the division of revenues, even when held by a commercially operating SOE

Mining and petroleum characteristics

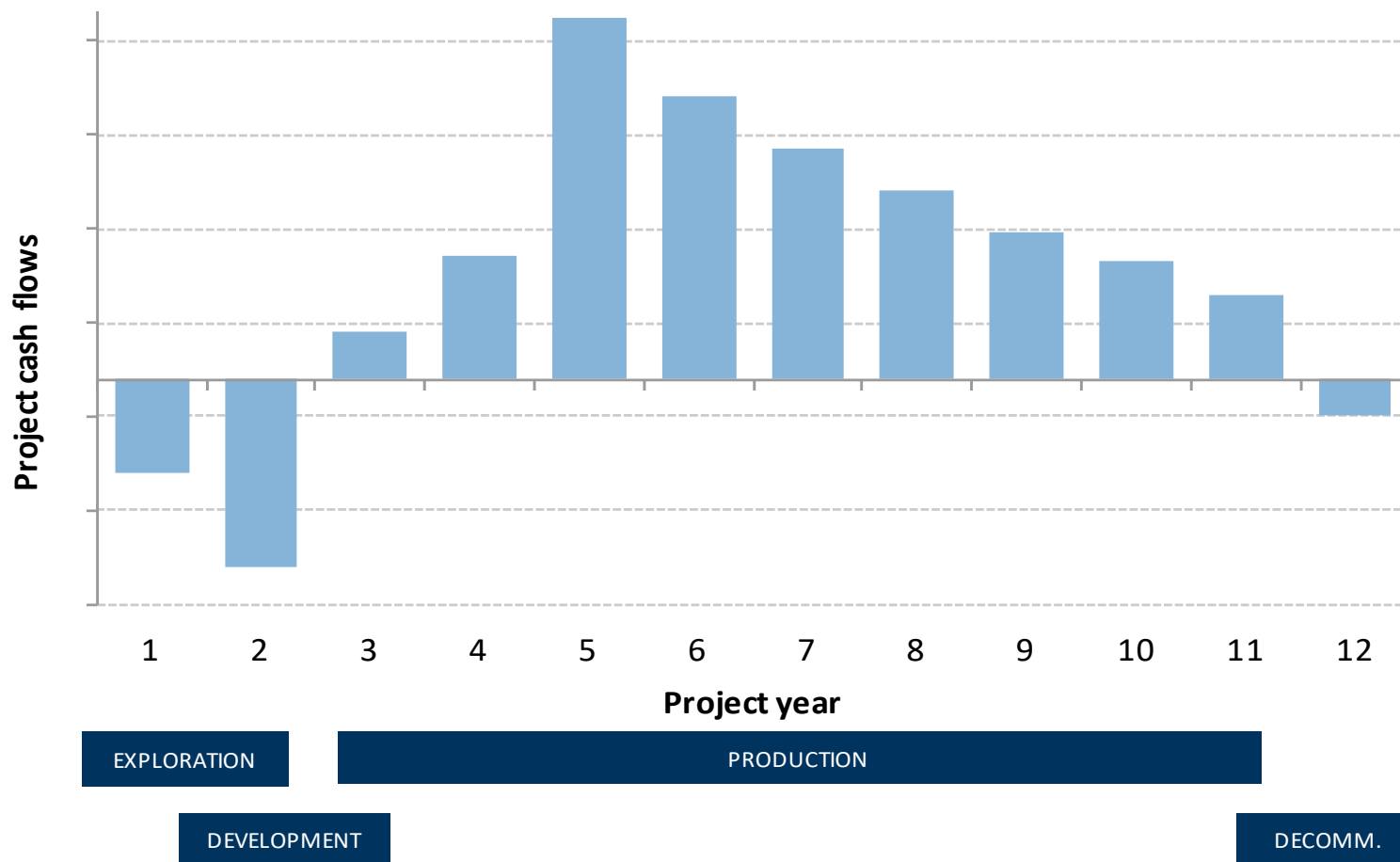
- Key revenue source for (increasingly) many countries
- Large upfront capital investment, and long production periods
- Pervasive uncertainty (both on prices and costs)
- Potential for substantial (economic) rents
- Asymmetric information
- Extensive involvement of multinationals in some countries... and of State-Owned Enterprises in others
- Non-renewable resources (exhaustibility is unique)

Key source of revenue for many developing countries



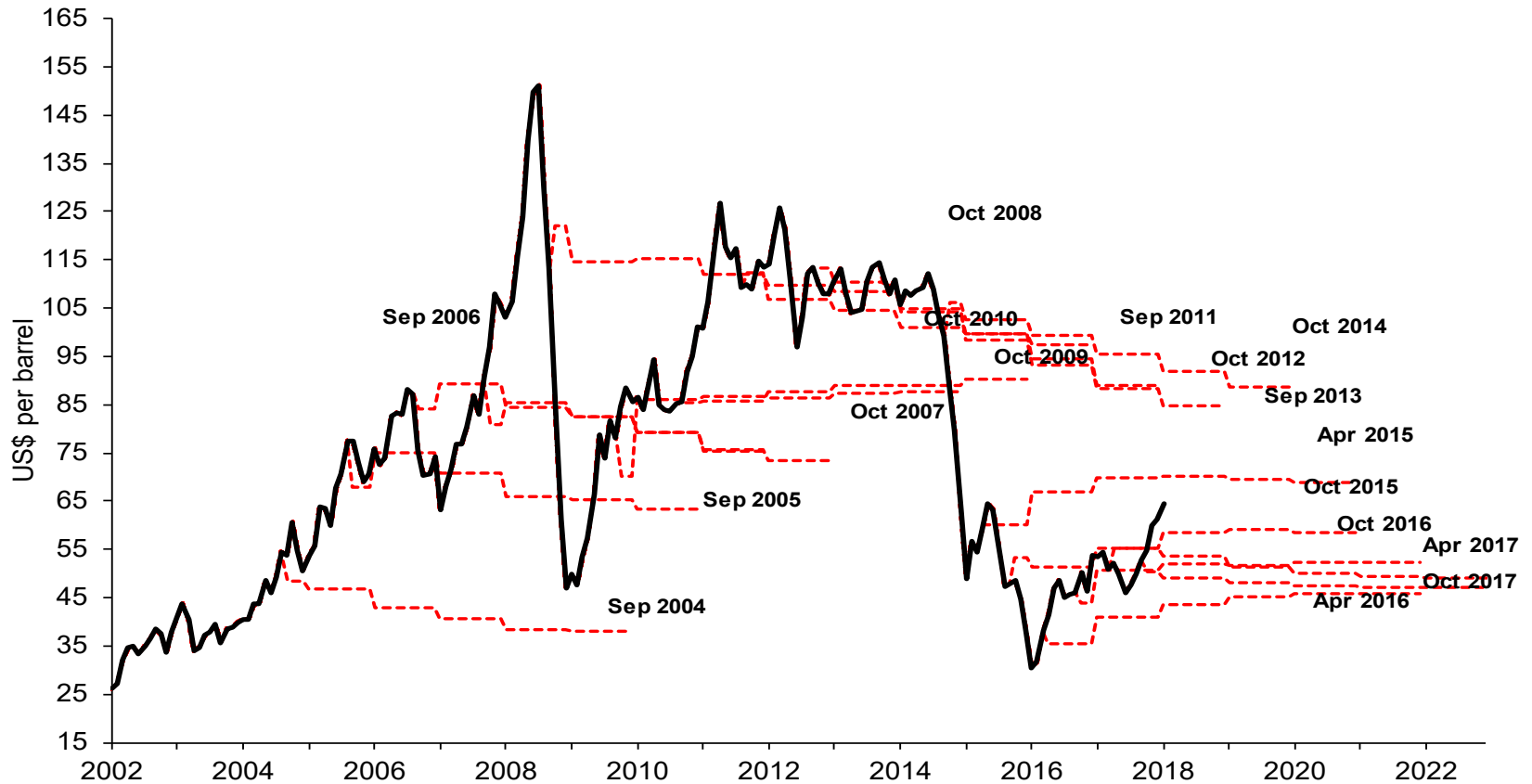
Large up-front capital investment and long production periods

Typical cash flow profile of a petroleum project



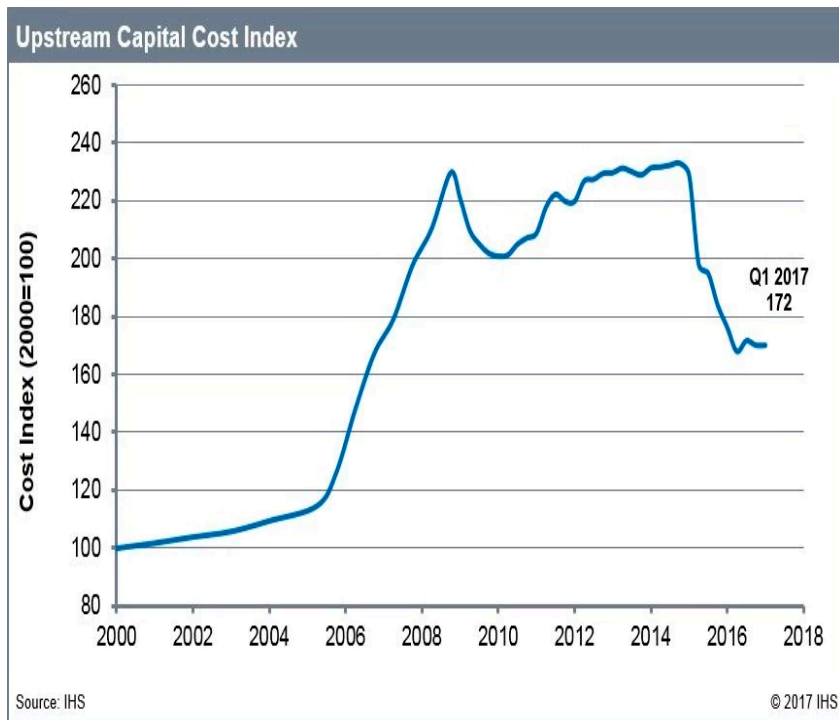
Pervasive uncertainty... in petroleum prices

WEO Oil Price Forecasts 2002-2022
(Monthly prices, 2017 U.S. Dollar per Barrel)

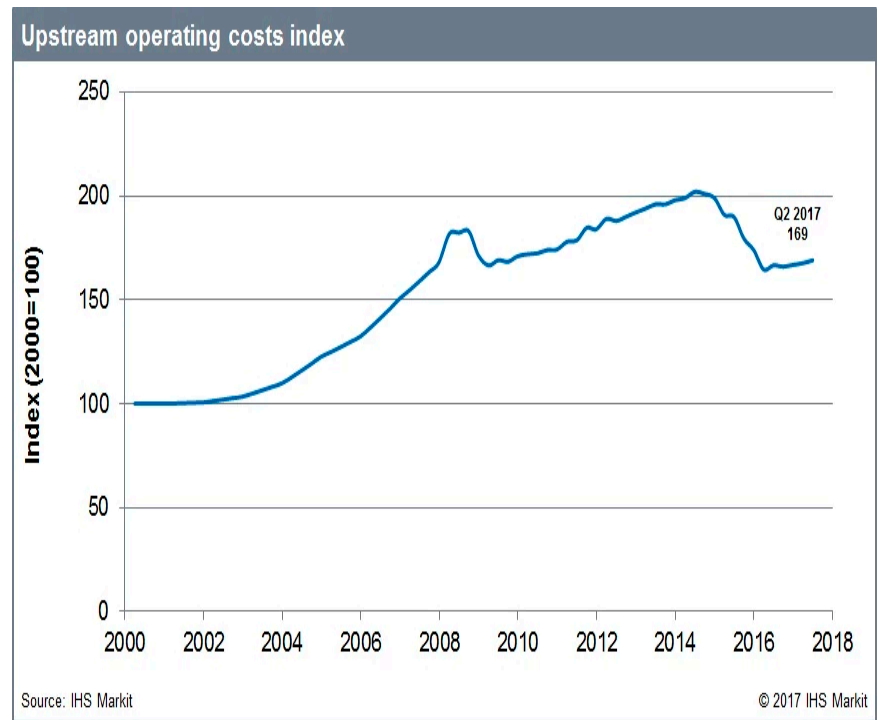


... and upstream costs

Upstream Capital Cost Index



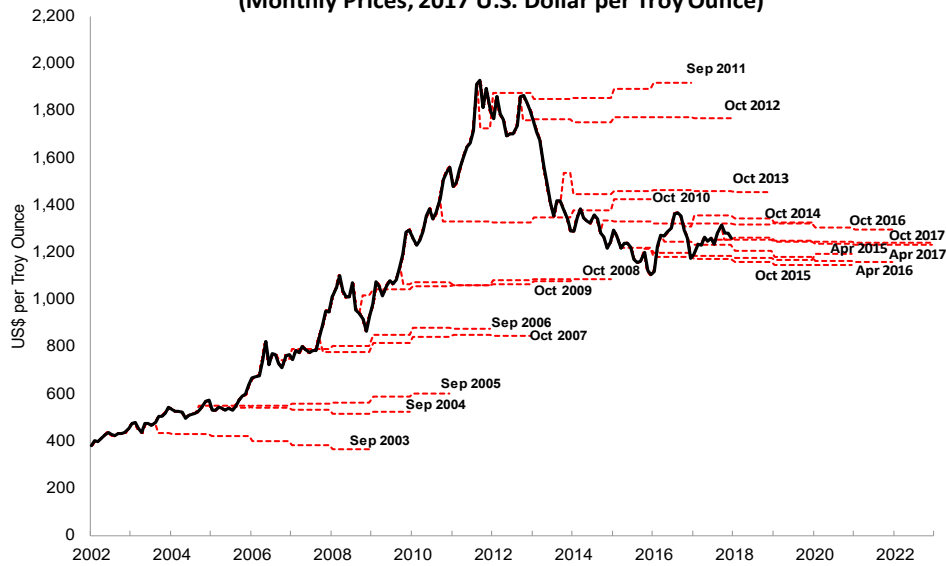
Upstream Operating cost Index



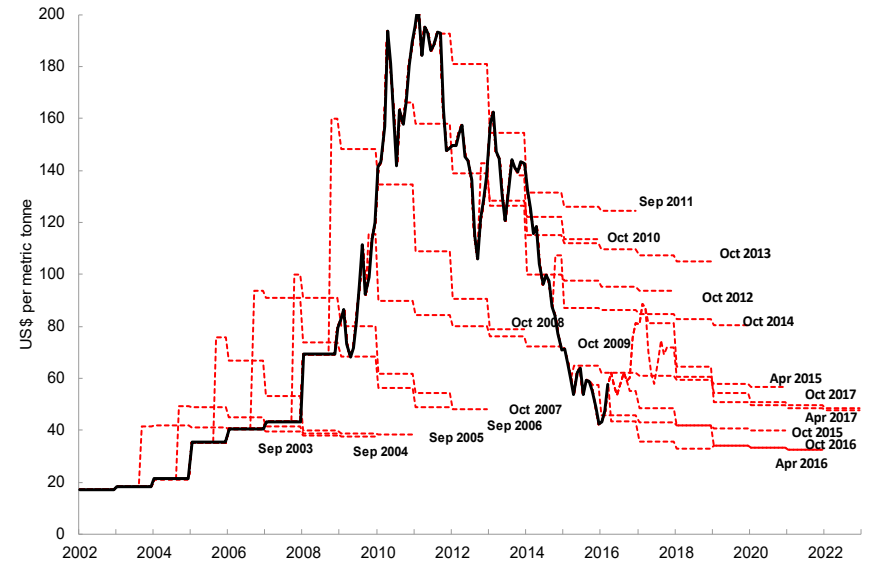
Source: IHS Energy

Pervasive uncertainty... in mineral prices

WEO Gold Price Forecasts 2002-2022
(Monthly Prices, 2017 U.S. Dollar per Troy Ounce)

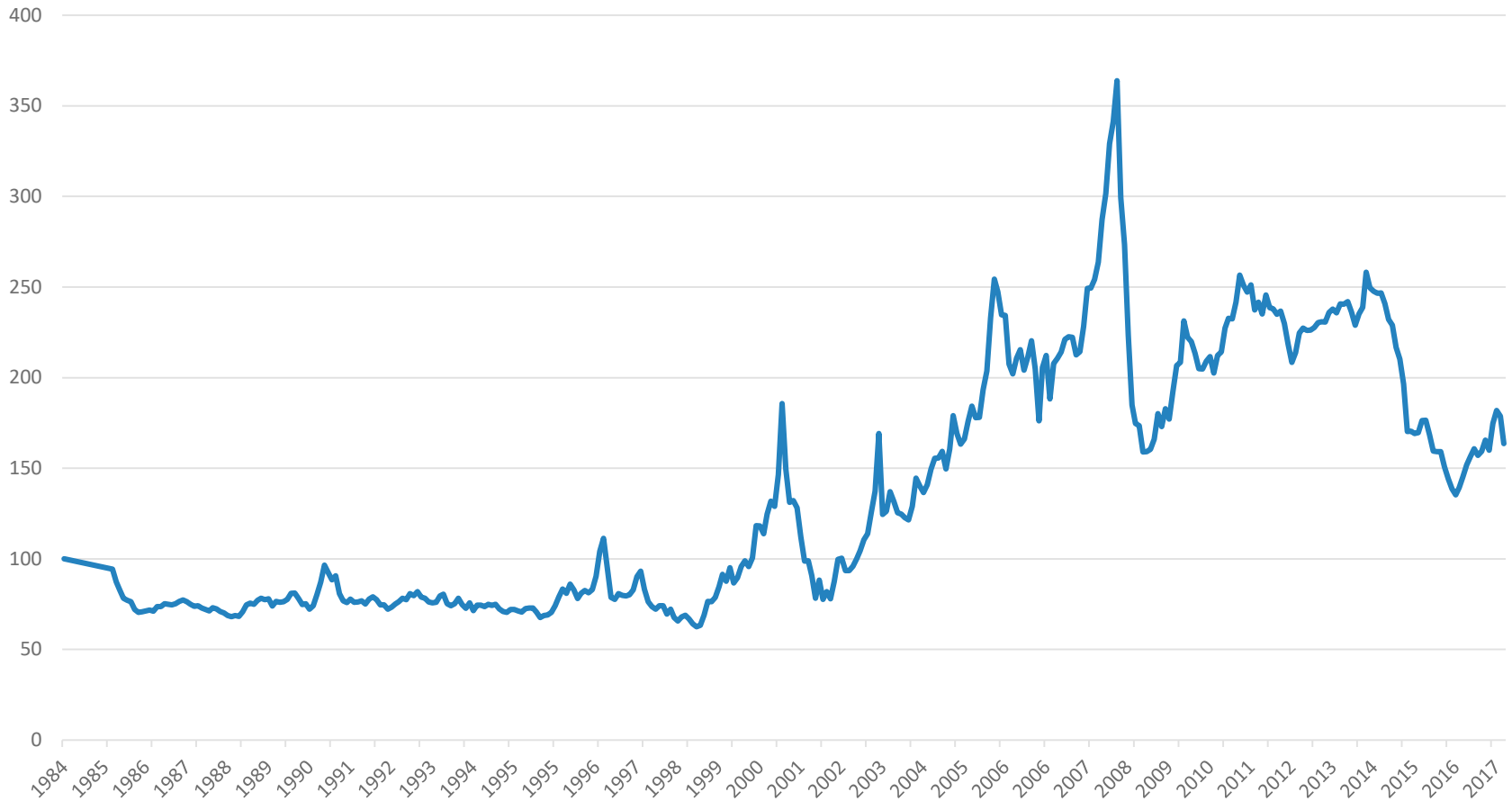


WEO Iron Ore Price Forecasts 2002-2022
(Monthly Prices, 2017 U.S. Dollar per metric tonne)



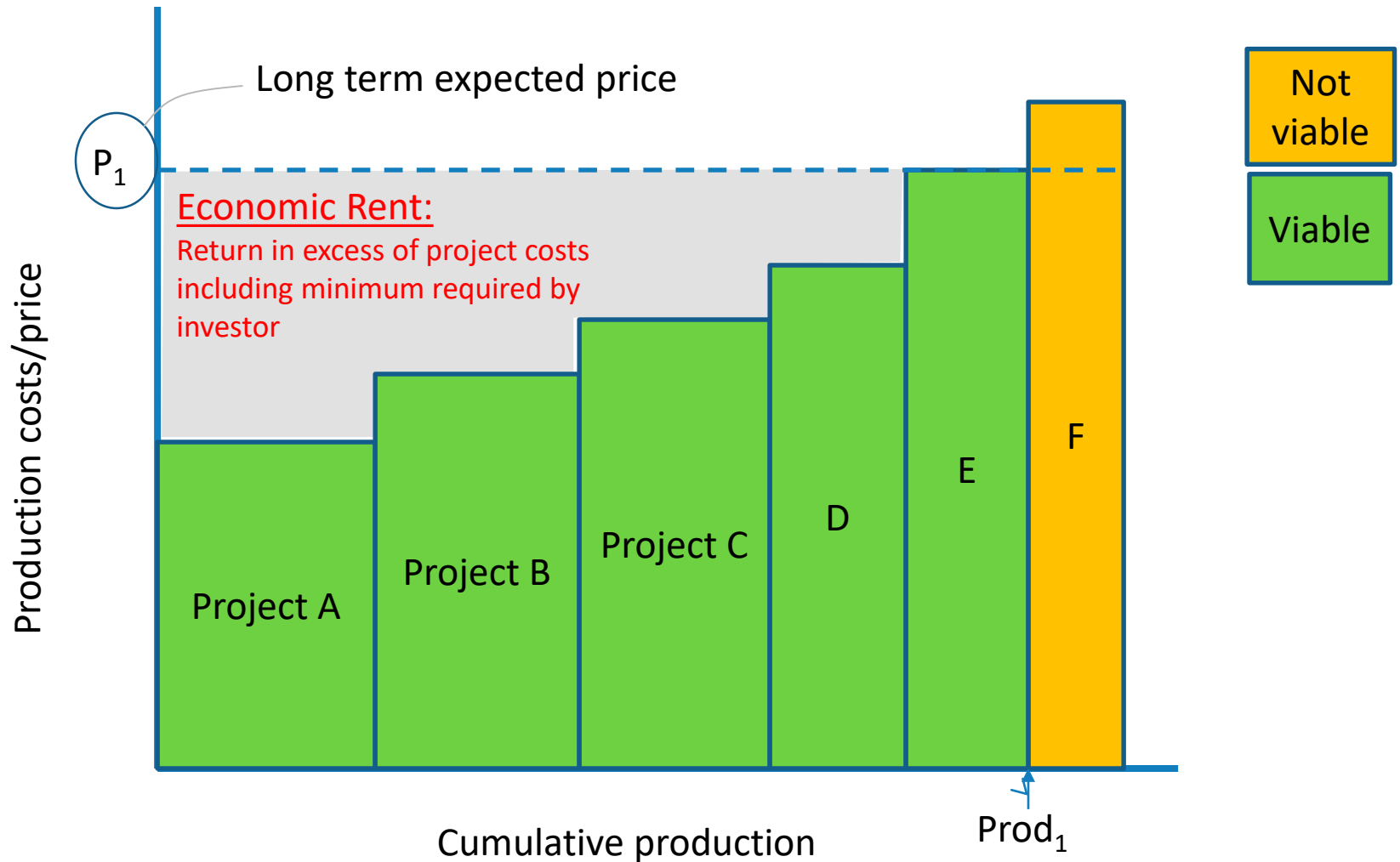
... and mining costs

Producer Price Index: Total Mining Industries, 1984=100

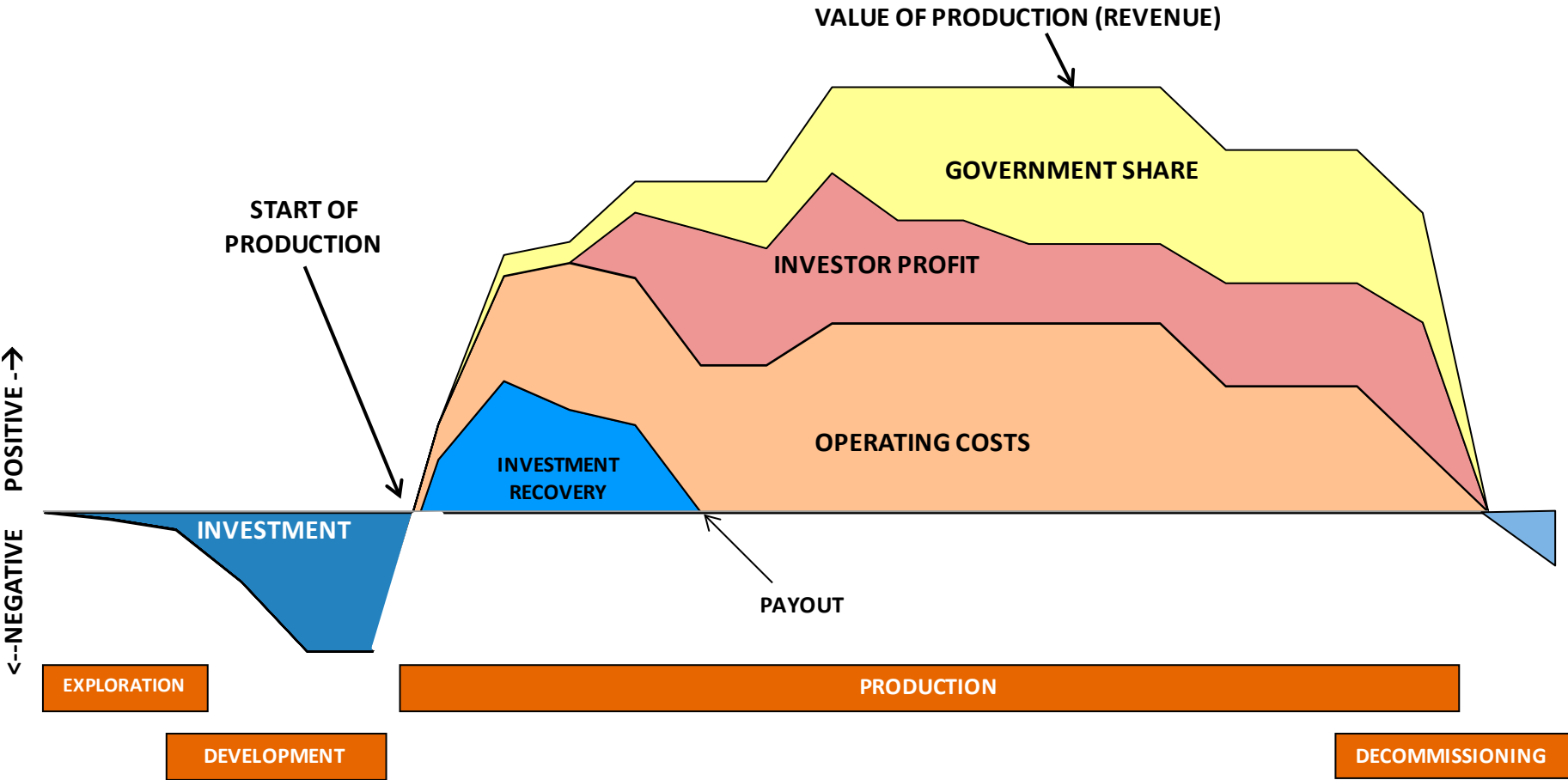


Source: Federal Reserve Bank of St. Louis

... but potentially high economic rents



Back to our cash flow example



Extensive involvement of multinationals and state-owned companies...

- The sector is dominated by multinationals (whether publicly traded or state-owned)
- In 2011 six of the 10 largest companies, by market capitalization, were in the extraction business
- While this has changed over the past 6 years, in 2017 one EI company remained in the top 10
- On the other hand, between 2/3 and 3/4 of world oil production comes from NOCs...

So what should fiscal regimes aim at?

- **Attract investment** so resources can be developed
- **Maximize present value** of government revenues
- **Anticipate timing** of receipts
- **Manage riskiness** of receipts
 - Risk/reward allocation between governments & MNEs
- **Improve progressivity**
 - But more progressive means more risk
- **Provide ease of administration** (for authorities) and **compliance** (for taxpayers)

TYPES OF FISCAL REGIMES AND INSTRUMENTS

Three main fiscal schemes (sometimes blended)...

1. **Tax and royalty**, with licensing of areas
2. **Contractual**, including production sharing or service contracts
3. **State ownership or participation**

A wide range of possible instruments

- **Bonuses** (with bidding)
 - Common in mature petroleum jurisdictions
- **Royalties**
 - Distort extraction (and, hence, exploration) decisions
 - Can be used in principle to control extraction path
 - Revenue from day 1
- **Corporate income tax**
 - To ensure equity income not favorably treated
 - Sometimes included in production sharing scheme

A wide range of possible instruments (2)

- **Explicit rent taxes**
 - Non-distorting in principle
 - Many forms, with different timing of receipts
- **Production sharing**
 - Production shared between government and investor according to a predetermine formula
- **State participation**
 - Can help resolve asymmetric information
 - But potential governance issues

What instruments should an attractive fiscal regime include?

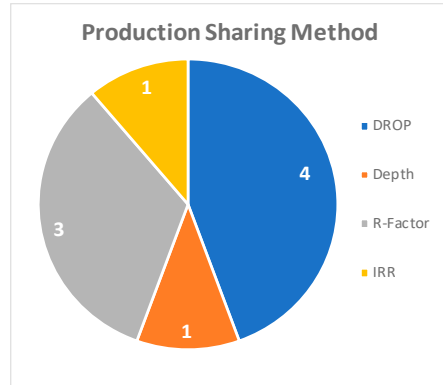
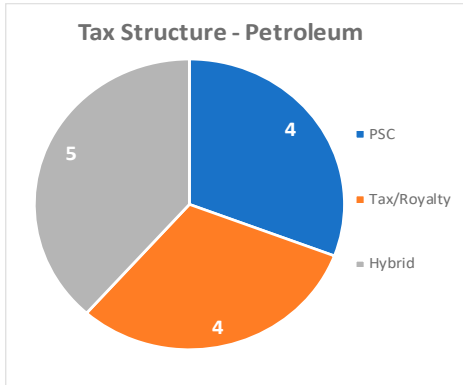
Country circumstances require tailored advice, but generally an appropriate framework should combine:

- **A modest royalty on gross revenue**
- **A tax (or production sharing mechanism) targeting rents** (project results is a good proxy)
- Together with **normal corporate income tax**
- **Bonus-bidding** may have a role in mature or promising environments

BRIEF SURVEY OF REGIMES IN SELECTED WEST AFRICA COUNTRIES

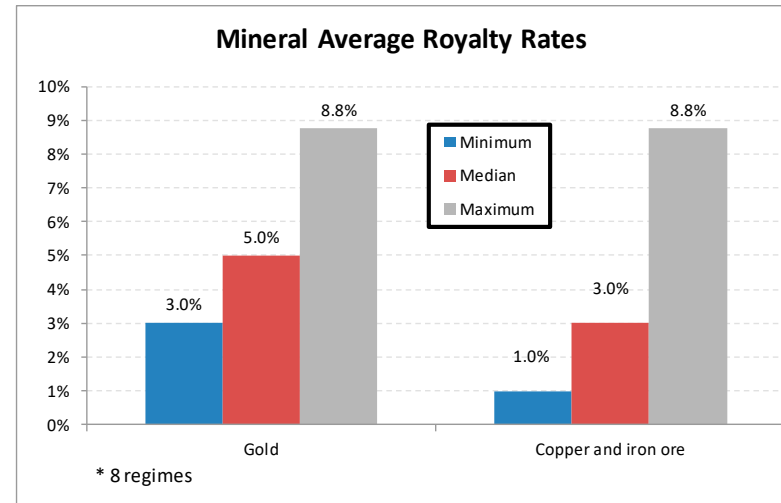
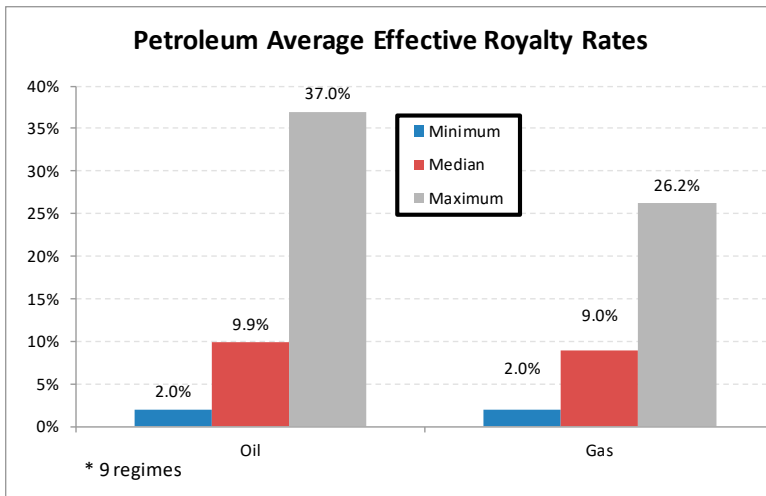
The region's fiscal regimes are diverse

- Participating countries use a mix of PSC, Tax/Royalty and Hybrid regimes for petroleum, while Tax/Royalty systems are predominant in mining:



TAX STRUCTURES - MINING		
	Amount	Percentage of Total
Tax/Royalty	10	100.0%
State participation	6	60.0%
Sliding scale royalty	3	30.0%
APT	3	30.0%

- Effective royalty rates also vary across countries and sectors:



... however some fiscal instruments are prevalent across countries

- Petroleum:
 - Tax/Royalty systems with an additional profit tax (APT) are concentrated in the Gulf of Guinea: Guinea-Bissau, Ghana, Niger and Senegal
 - While production sharing fiscal regimes are common in the rest of countries
- Mining
 - All countries surveyed have Tax/Royalty regimes, and only one has an additional profit tax
- Under both mining and petroleum, state participation is predominant (free equity is common in mining, while carried state participation is more common in petroleum)

EVALUATING FISCAL REGIMES

Project-specific modeling approach

- The interaction of different fiscal instruments is complex and its effects varies from project to project
 - Limited insight from headline tax rates and fiscal parameters
 - For example, appropriate treatment of depreciation, loss carry forwards, and ring-fencing is important
- Thus, modeling should be project specific



Indicators commonly used in fiscal regime analysis

Average Effective Tax Rate

- Government revenues as a share of pre-tax net cash flow
- At various discount rates

Marginal Effective Tax Rate

- Proportion of pre-tax return taken in tax, for a project which just reaches the hurdle rate post-tax

Share of Total Benefits

- Government revenues as a share of revenue minus operating cost (quasi-rents)
- Cash flows available to meet investment, return on investment, and taxes

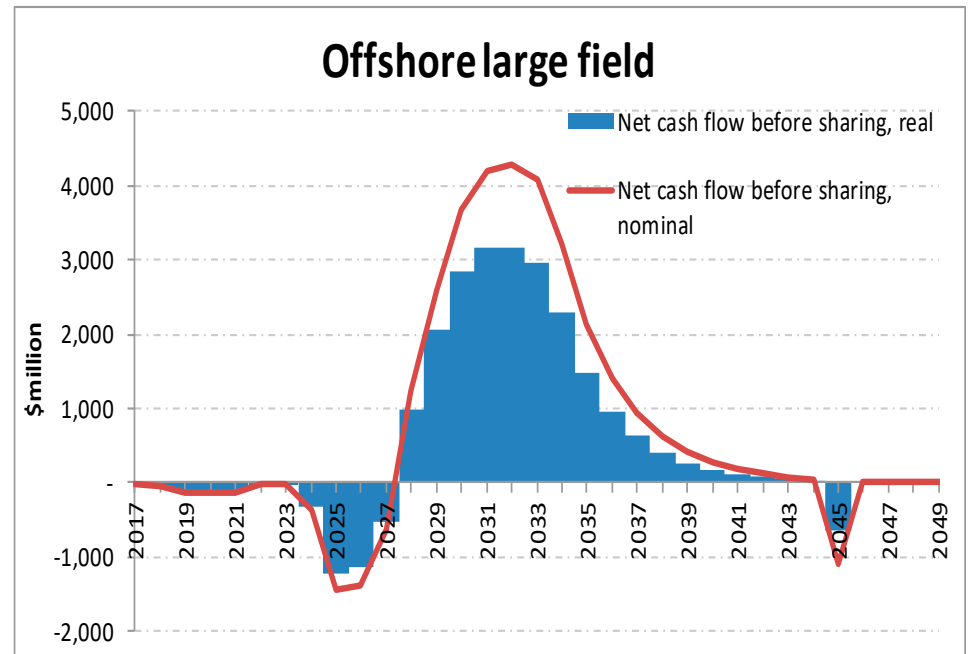
Breakeven Price

- Price required to achieve a minimum post-tax IRR required by the investor

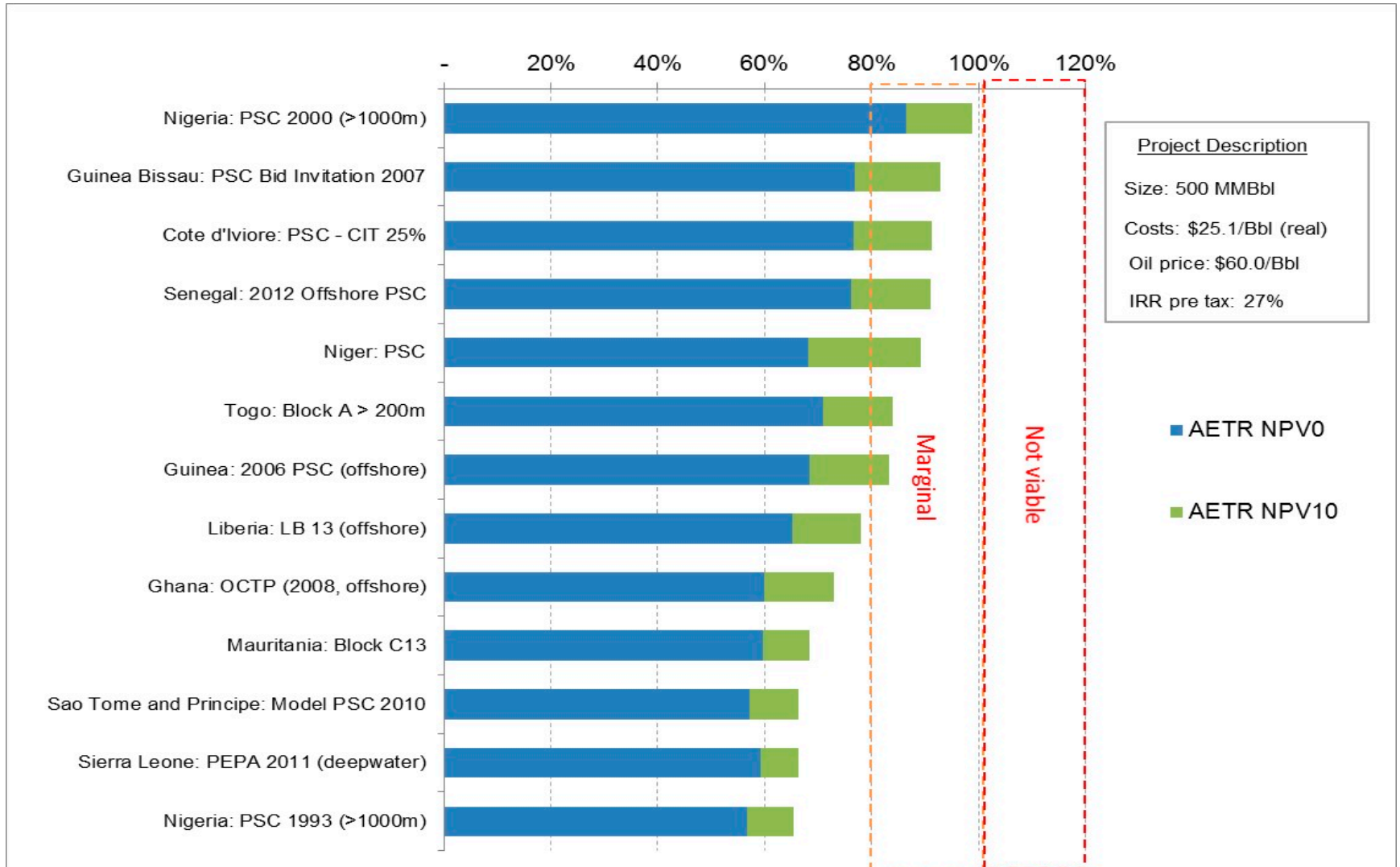
Illustrative project economics

Offshore large field

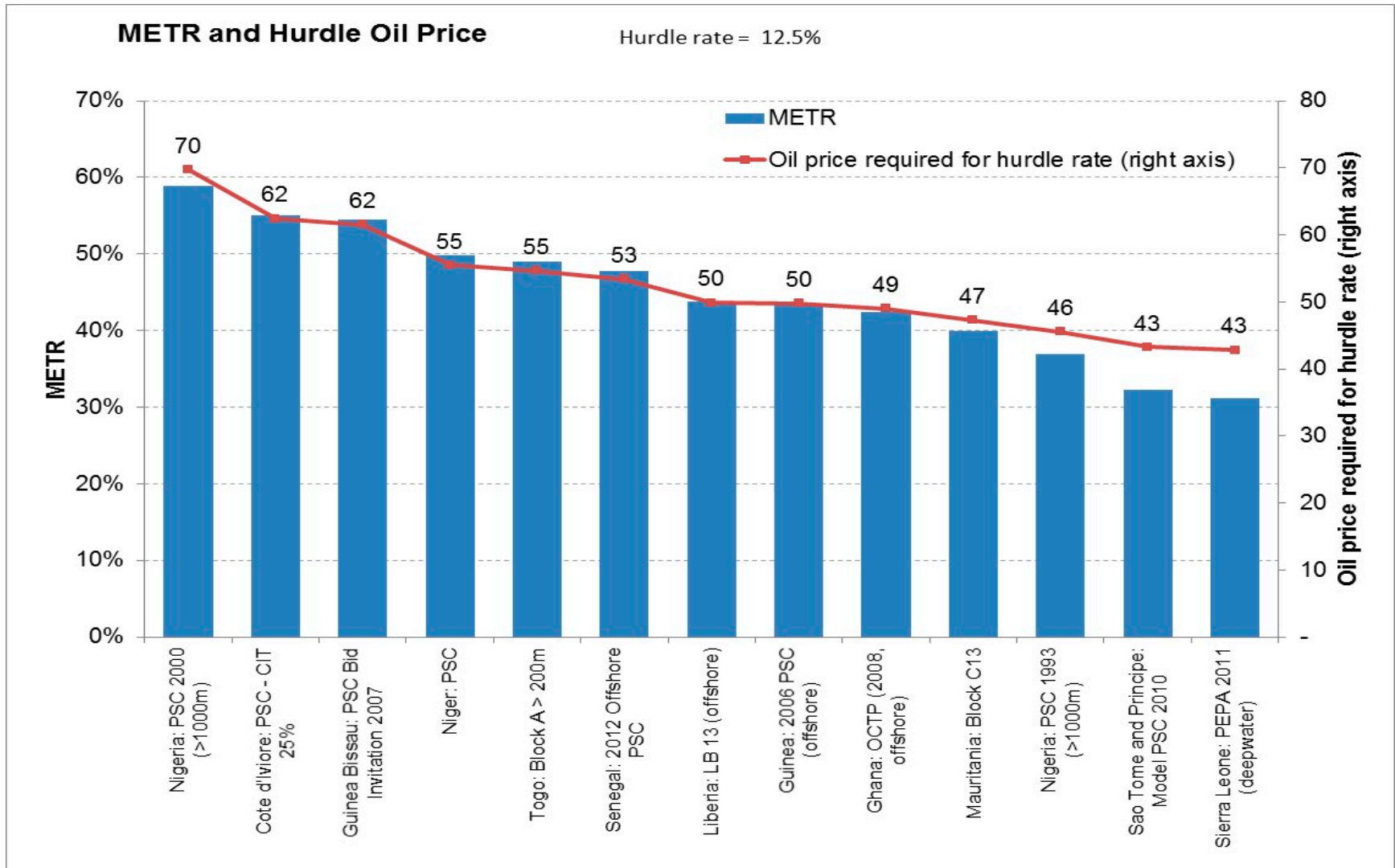
Production oil	500	MMbbl
Years	18	
<i>Constant 2017 dollars</i>	\$ million	\$/Bbl
Exploration costs	450	0.9
Development costs	2,486	5.0
Development drilling	2,227	4.5
Operating costs	6,754	13.5
Decommissioning	628	1.3
	<hr/>	
	12,545	25.1



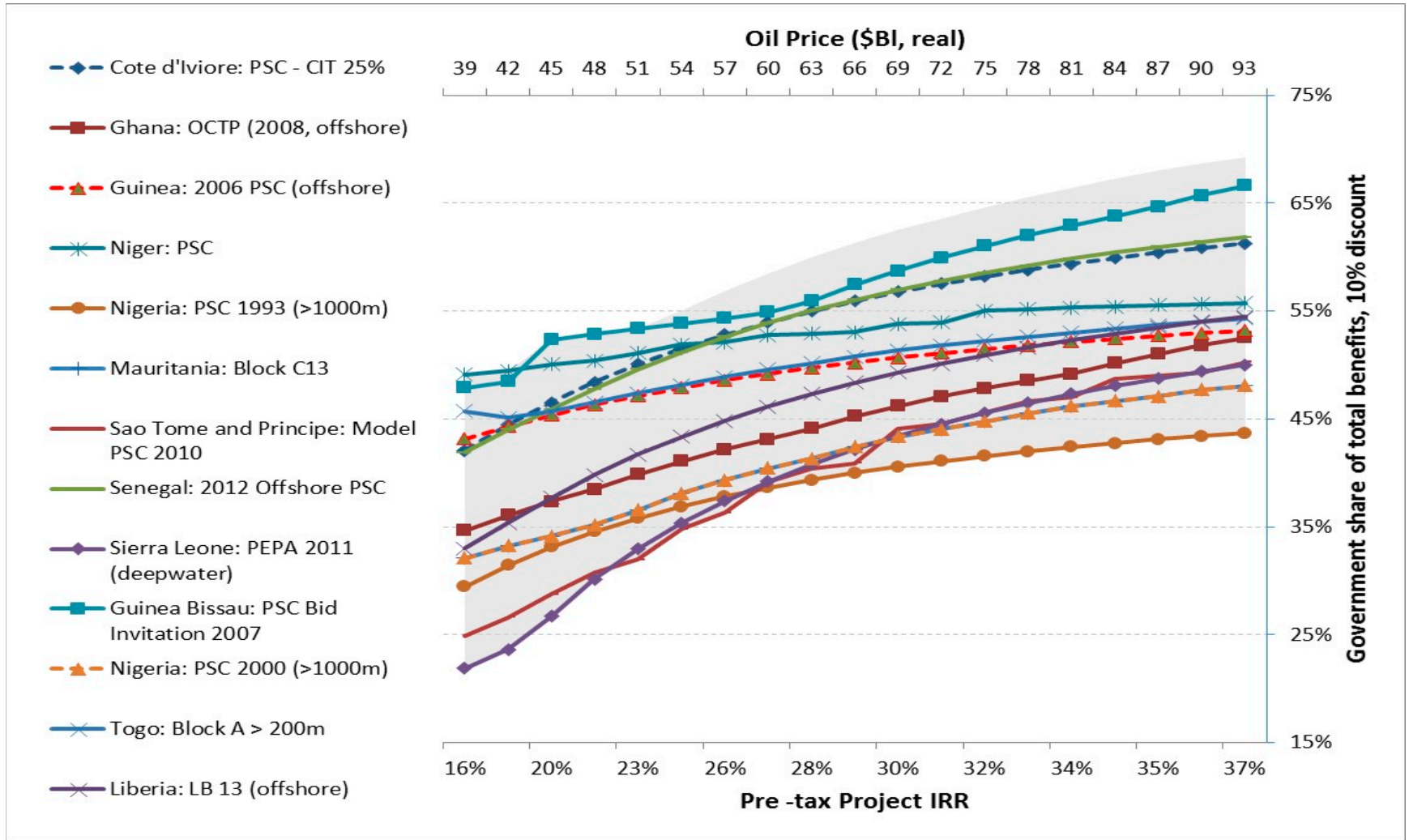
Government take (AETR)



Breakeven price and METR



Progressivity



QUESTIONS?

To learn more...

Please visit: <http://www.imf.org/external/np/fad/fari/>

