



# Fiscal Regimes for Petroleum: Issues and Current Trends

Philip Daniel and Paulo Medas  
International Monetary Fund

**4th Forum Senate debates Brazil - The new oil frontier:  
the challenges of the pre-salt layer**

*Brasilia*

December 4, 2008

□ The views in this presentation are those of the author and should not be attributed to the International Monetary Fund, its Executive Board, or its management.

**ENH**

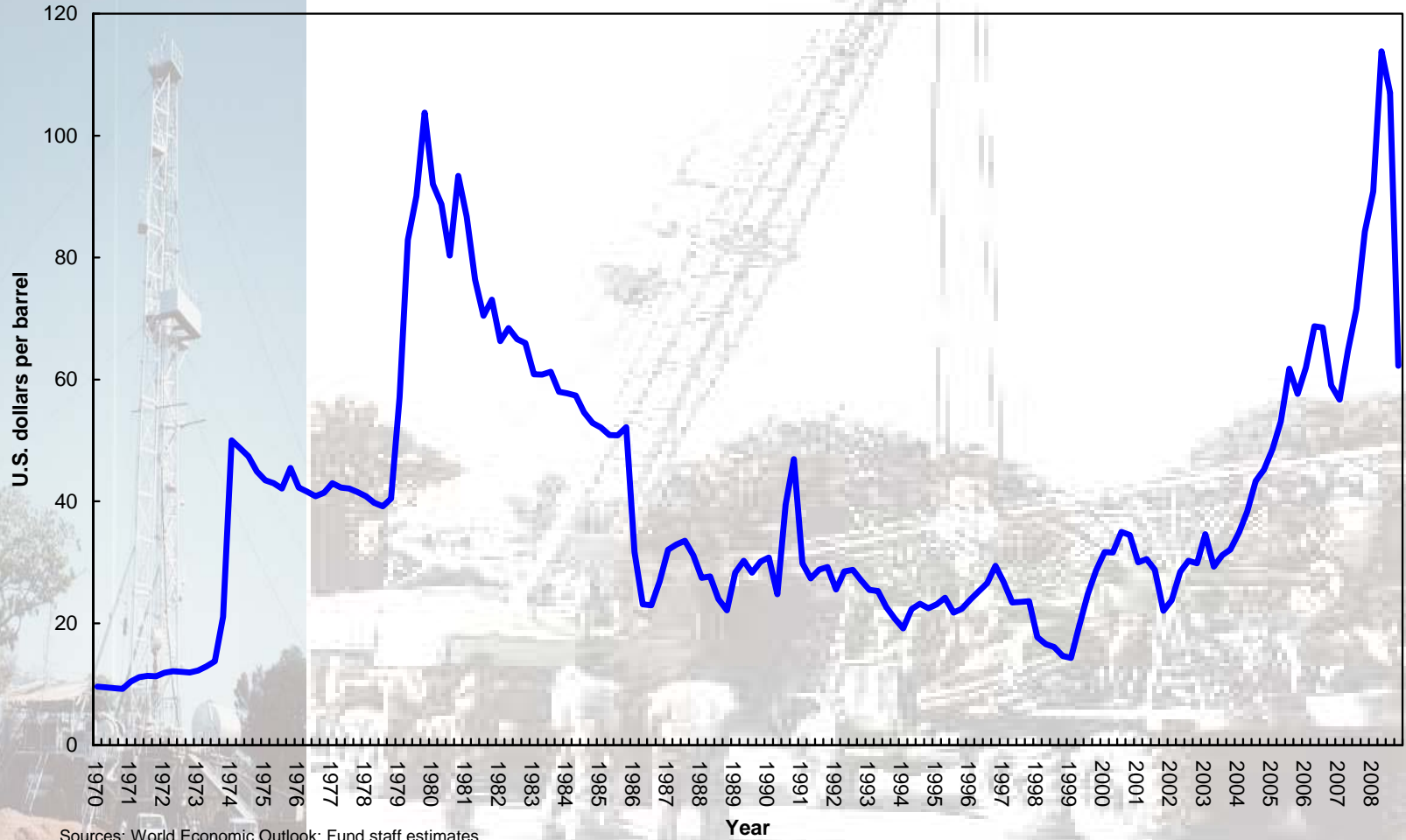
# Outline

- Challenges for fiscal regimes
- Main fiscal regime types
- Design principles
- The case of Brazil
- Fiscal regime changes
- Taxation and transparency

# Rent, Uncertainty and Instability

- *Resource Rent*: value minus all necessary costs
- *Uncertainty* about value of resource and timing of revenues
- *Instability* caused by volatility of oil prices
- Fiscal regime should be able to adjust to actual outcomes

Real Oil Prices, 1970-2008 1/  
(In U.S. dollars per barrel)



Sources: World Economic Outlook; Fund staff estimates.  
1/ Defined as WEO oil price deflated by U.S. CPI (2006=100).

# Main Types of Petroleum Fiscal Regime

(with private investment)

- ***Tax and royalty*** (with or without state participation)
  - Normal CIT with royalty for rent
  - Normal CIT with RRT or progressive tax
  - Petroleum profits tax
- ***Production Sharing*** (with or without state participation)
  - Proxies for profit (cumulative production, daily production, price cap or matrix)
  - Rate of return or R-Factor

# Fiscal Schemes Beyond Tax/Royalty & Production Sharing

- About 40% world oil output is subject to other arrangements
- Mid-East OPEC countries plus China, Libya, Nigeria, Venezuela, Mexico (mixed schemes in some)
- State ownership plus international company involvement through service contracts, risk service contracts, “buy back” schemes
- Need to analyse fiscal equivalence of government take



# Fiscal Regime Design (1)

## Concept of Rent

- Value minus all necessary costs
- “Tax neutrality”
- Conditional payments

## Tax System Design

- Incentive to explore and invest
- Fair share of revenues for public use

## Three Principles

- Comparable with countries of similar prospectivity
- Government can tax more if the structure of tax reduces investor risks
- Tax neutrality does not mean tax rates identical to other sectors

# Fiscal Regime Design (2)

## Tax Share & Tax Structure

- Overall impact is more important than individual instruments
- *Tax Share* – average state share over the life of resource
- *Tax Structure* – path over time of the tax share

## Balancing a Petroleum Tax System

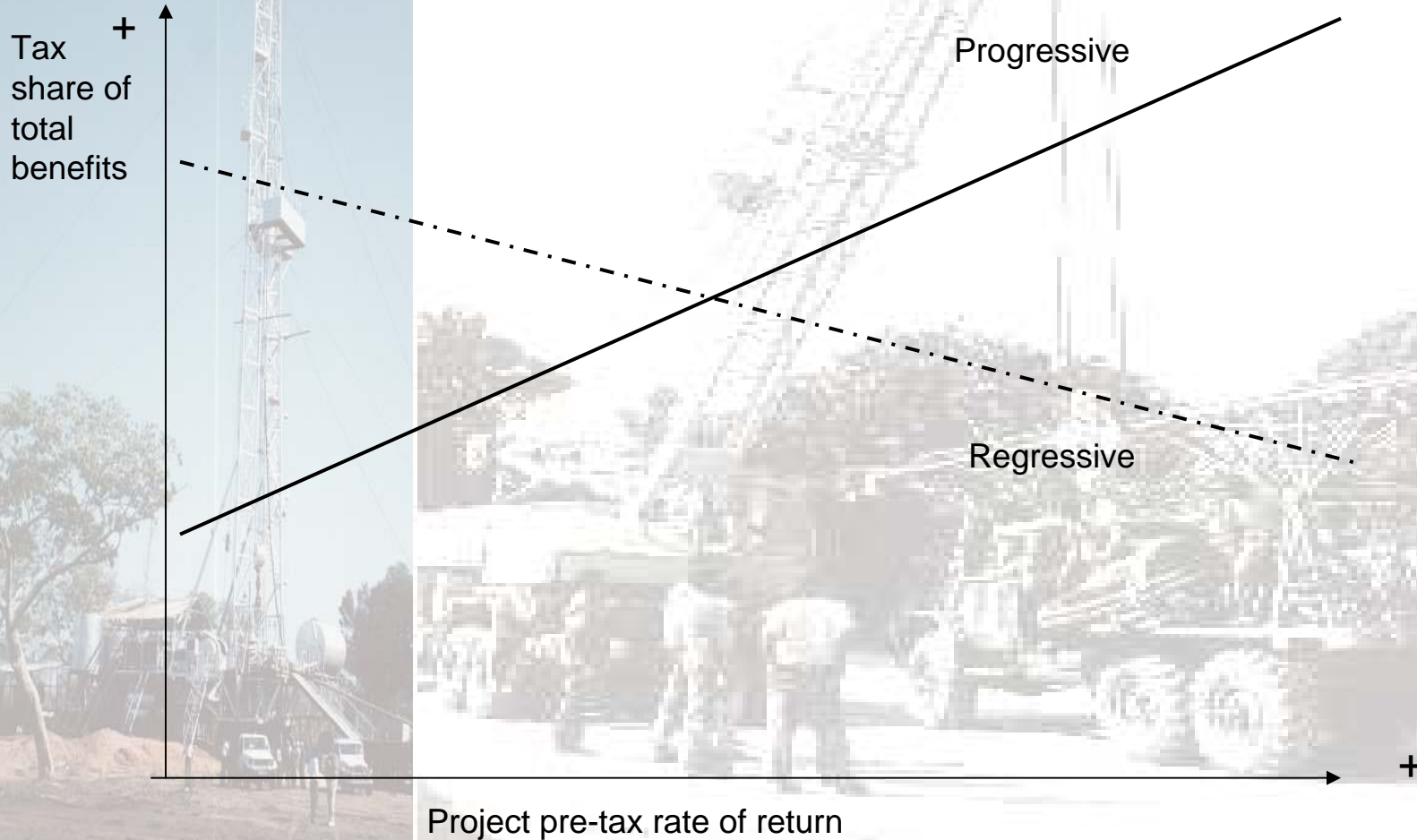
- Minimize investor's risk of loss
- Create stability of fiscal terms
- Sufficient share of high rents for the state



# Petroleum Taxation: Criteria

- Neutrality
- Revenue Raising Capacity
- Risk to Government (stability and timing)
- Investor Perceptions of Risk
- Adaptability and progressivity
- Other potential issues
  - Distribution across levels of government
  - Tax administration capacity

# State Capture of Rents



# State Participation

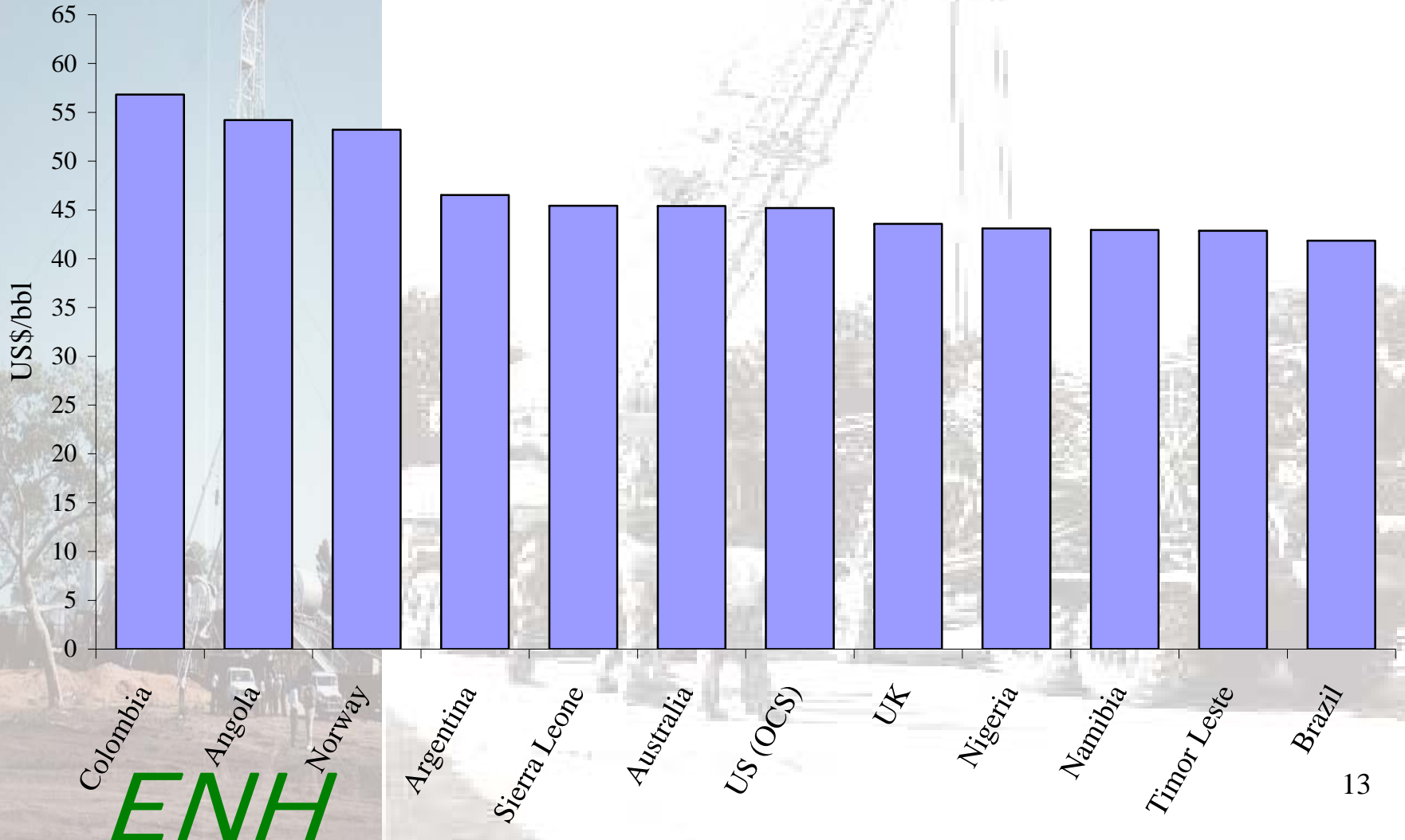
- Includes range of options from “carried interest” to full equity
- Carried interest acts as tax on exploration
- Limited rent capture vs. efficient taxation
- Early revenues but may defer project start-up
- Adds to state risk and financial exposure
- Need to assess impact on overall ‘fiscal’ package on investors and government take

# CIT/Royalty/Special Tax: Brazil

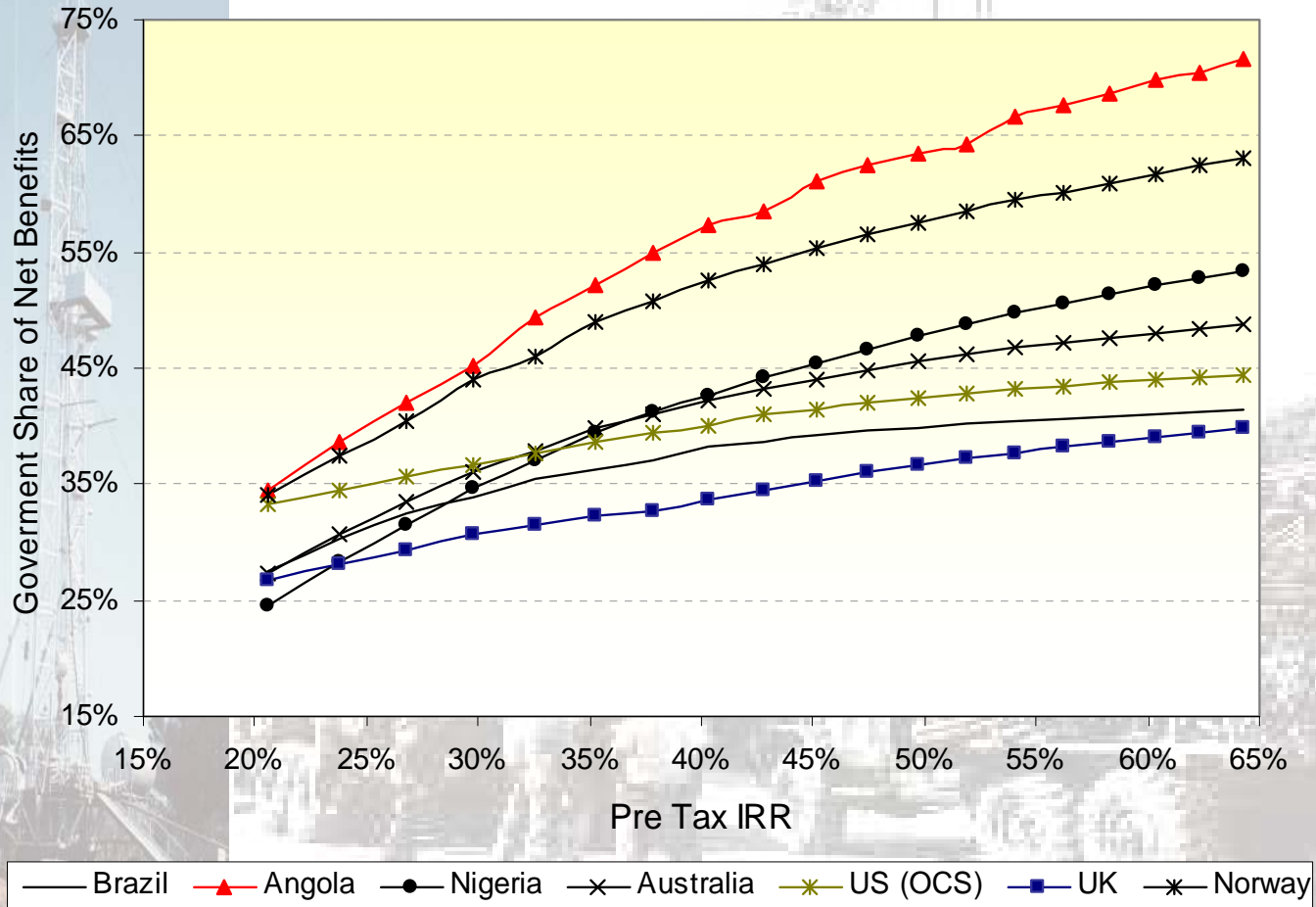
- Royalty
  - Linked to zones and daily production; 10% (may be reduced to 5%)
- Special Participation
  - 10% - 40% Levied in case of high production volumes or high profitability depending on several factors.
- Corporate Income Tax
  - 15% Plus a surtax of 10%; plus CSLL
- Bonus
- Deductions
  - Depreciation is normally on a straight-line basis over the useful life of the asset. 5 -10 year depreciation. Indefinite loss carry forward
- Main fiscal terms are broadly in line with international experience
  - Dividends from Petrobras
  - More progressivity? (e.g. tax regime more linked to profitability levels)

# *Breakeven price for 15% Post-Tax IRR*

Price Required to Achieve 15 Percent After-Tax Real Rate of Return



# Government Share of Total Benefits for Range of Pre-Tax IRR (Deep Water Project)





# Fiscal Responses by Producers to changes in oil prices (1)

- More than 30 countries have adjusted terms since 2000. Majority in favor of government, but some have provided incentives (mature, consumers, deep water etc)
  - Reflect *ex post* rates of return thought extremely improbable when the investments were mad
  - Important distinction among those who acted unilaterally, those who secured more by voluntary means (bidding), and changes for individual projects
  - Some achieved more by simple operation of progressive terms (Angola, Australia PRRT, Azerbaijan PSA, Nigeria tax system, Timor-Leste PSA & APT)
- But: as oil prices fall, incentives change (e.g. Russia)
- Producers with progressive tax systems (such as rate of return schemes) will be better prepared to manage volatility.

# Responding to Financial and Technical Risks

- Significant global escalation of financial and technical risks (need for new technology/ financing/risk-sharing)
- Governments facing urgent and competing funding demands for social and physical infrastructure
- Governments have responded by shifting financing burden and risks to the private sector

# Taxation and Transparency (1)

- *Extractive Industries Transparency Initiative (EITI)*
  - Starts from reconciliation of payments and revenues
  - 20 + implementing governments
- *IMF Guide on Resource Revenue Transparency*
  - Part of Fiscal ROSC process – a voluntary engagement
  - Full public presentation of legal basis for taxation or production sharing
  - Encourages publication of mineral agreements covering fiscal terms