Energy

How fiscal terms change the value of an oil and gas asset

Why two fields with the same reserves can be worth very different amounts under different contracts.

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Two oil fields can hold the same reserves, cost the same to develop and produce the same oil, yet be worth very different amounts to an investor. The difference lies in the contract with the host government, which decides how the cash from each barrel is shared. For anyone buying, selling or bidding for an upstream asset, the fiscal terms are often worth as much attention as the geology.

The main types of contract

- Tax and royalty (concession): the company owns the oil it produces, pays a royalty on revenue and income tax on profit.
- Production sharing contract (PSC): the state owns the oil. The contractor recovers its costs from a share of production (cost oil), and the remaining profit oil is split between the state and the contractor. The split is often on a sliding scale linked to production, oil price or the R-factor, a ratio of the contractor's cumulative receipts to its cumulative costs.
- Service contract: the company is paid a fee per barrel or a fixed return, with little or no exposure to the oil price.

The same field under three sets of terms

To show the effect, we modelled one fictional onshore field under three contracts. The field has 40 million barrels of reserves, USD 350m of development capital, a plateau of 12,000 barrels per day and a flat oil price of USD 70 per barrel. Before any government take, it generates USD 1,645m of undiscounted cash flow.

Contract terms	Contractor NPV at 10%	Contractor IRR	Government take
Tax and royalty: 12.5% royalty, 50% income tax	USD 242m	26.0%	63%
PSC: 10% royalty, 50% cost recovery limit, R-factor profit split (contractor 50%, 35%, 25%)	USD 181m	22.5%	71%
PSC: 10% royalty, 40% cost recovery limit, flat 30% contractor profit share	USD 68m	14.8%	81%

Illustrative figures from simplified models. Government take is royalty, tax and state profit oil as a share of undiscounted pre-tax cash flow.

The geology, costs and production are identical in all three cases. Yet the contractor's NPV ranges from USD 68m to USD 242m, a difference of more than three times, and government take ranges from 63% to 81%.

Why the terms matter so much

- Cost recovery limits control timing. A lower limit means the contractor recovers its investment more slowly, and money recovered later is worth less.
- The profit split sets the long-run share. A flat 30% contractor share leaves more for the state in every year than a sliding scale that starts at 50%.
- Sliding scales change who bears price risk. Under the R-factor PSC in our example, government take was 77% at USD 55 per barrel and 69% at USD 85, because a royalty and a cost recovery cap weigh more heavily when prices are low.
- Royalties are paid on revenue, not profit, so they bite hardest on marginal fields and at low prices.

Details that change the answer

Beyond the headline terms, several contract details can move value significantly and are easy to miss in a simplified model:

- Ring-fencing, which stops costs on one licence being recovered or deducted against income from another.
- Whether income tax is paid by the national oil company on the contractor's behalf, and how that is treated for the contractor's own tax.
- Domestic market obligations requiring part of production to be sold locally at below-market prices.
- Signature and production bonuses, state participation and carried interests.
- Stability clauses that protect, or fail to protect, the terms against later changes in law.

What this means for investors

Valuing an upstream asset with a generic tax rate can be badly wrong. The fiscal model needs to follow the actual contract, period by period: royalty, cost recovery, profit split, tax and any state participation. When comparing opportunities across countries, the useful comparison is not reserves or production but contractor cash flow after government take, under realistic price scenarios. That is where the value of the asset really lies.

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