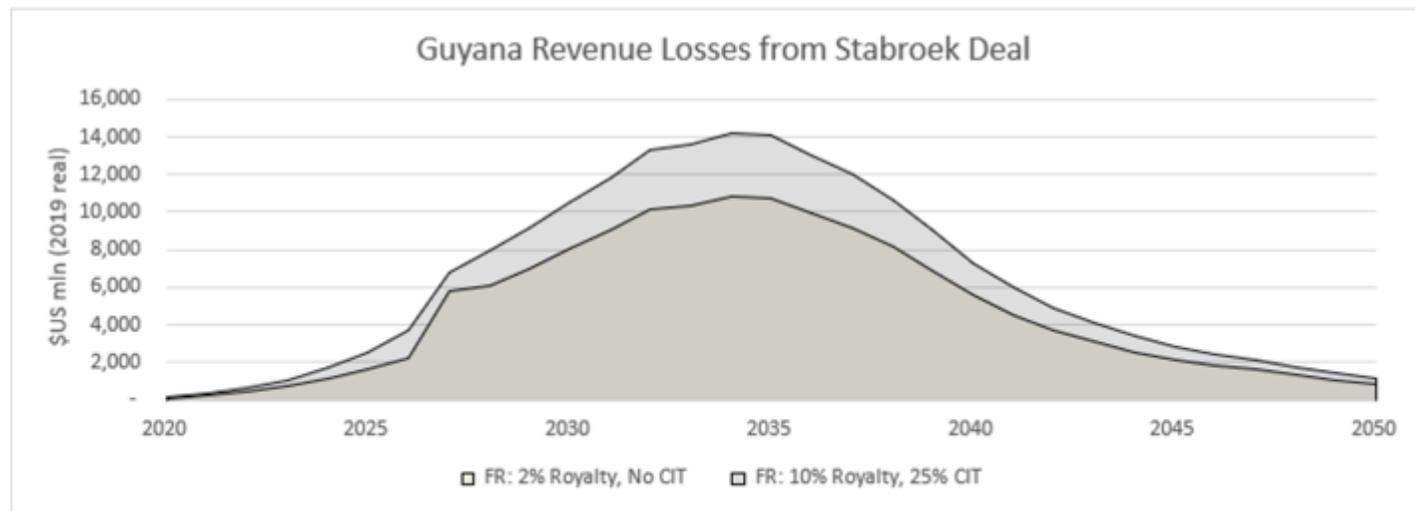


COMMON USE CASES OF PUBLIC POLICY FINANCIAL MODELING

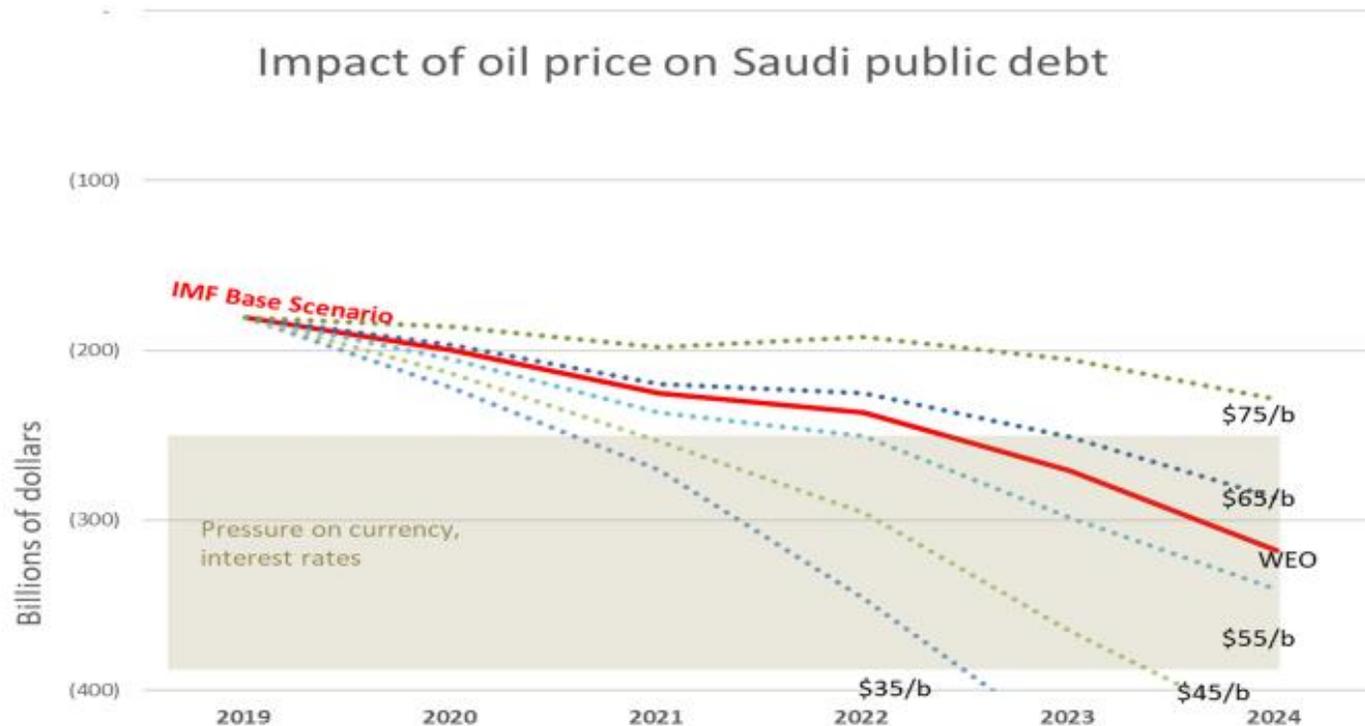
- **Fair Deal:** how much will Guyana lose out on in Stabroek?
- **Forecasting:** What oil price will drive Saudi Arabia into interest rate rises or currency devaluation?
- **Energy Transition:** How much longer will it be safe for Senegal's state oil company to take out loans to buy equity in new oil fields?
- Is Your **Tax Holiday** really worth it? Foregone taxes and investor rates of return in Myanmar.
- **Tax Gap Analysis:** are the payments reported by EITI really what should have been paid?
- **Modeling as the barometer** for whether transparency is effective: do we have all the data we need to predict government revenues? How fractured is collection?

Fair Deal: How much does Guyana lose out on in Stabroek vs “normal” deal?



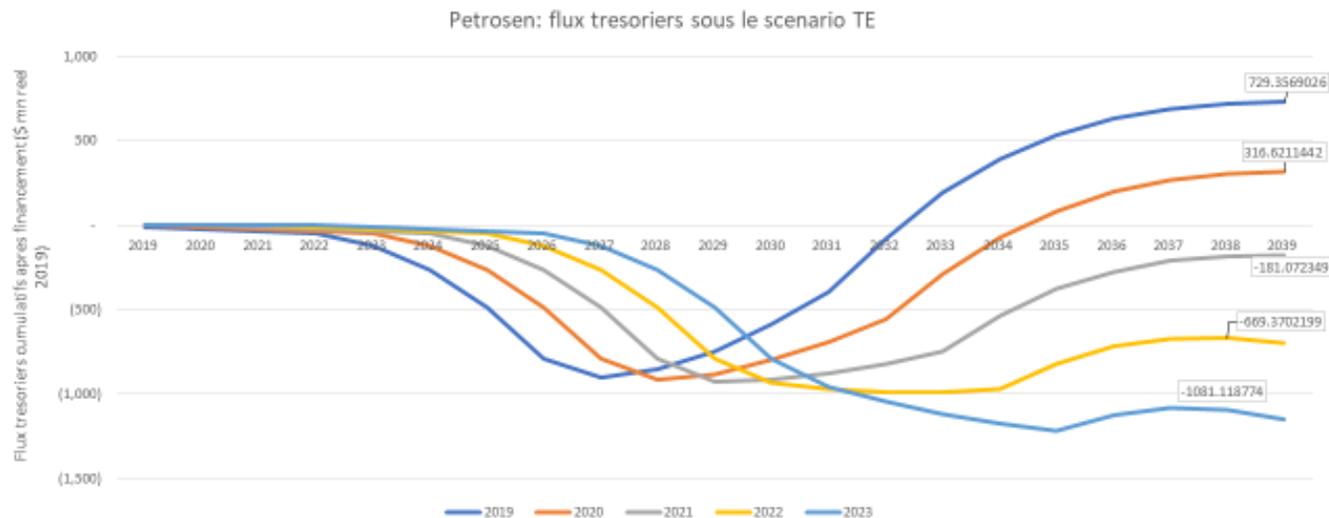
In 2016 Guyana signed a replacement agreement with ExxonMobil and its partners to a first contract agreed in 1999, after the first of many huge discoveries were made. Government share of profits is unusually low at 52-53%. This graph compares earnings for the government under the 2016 contract (the lower revenues line) with a putative alternative regime that falls more into norms described by the IMF of 65% to 85% (the upper revenues line). In base scenario Guyana will lose \$55 billion life of project.

Forecasting: how Saudi debt interacts with oil price



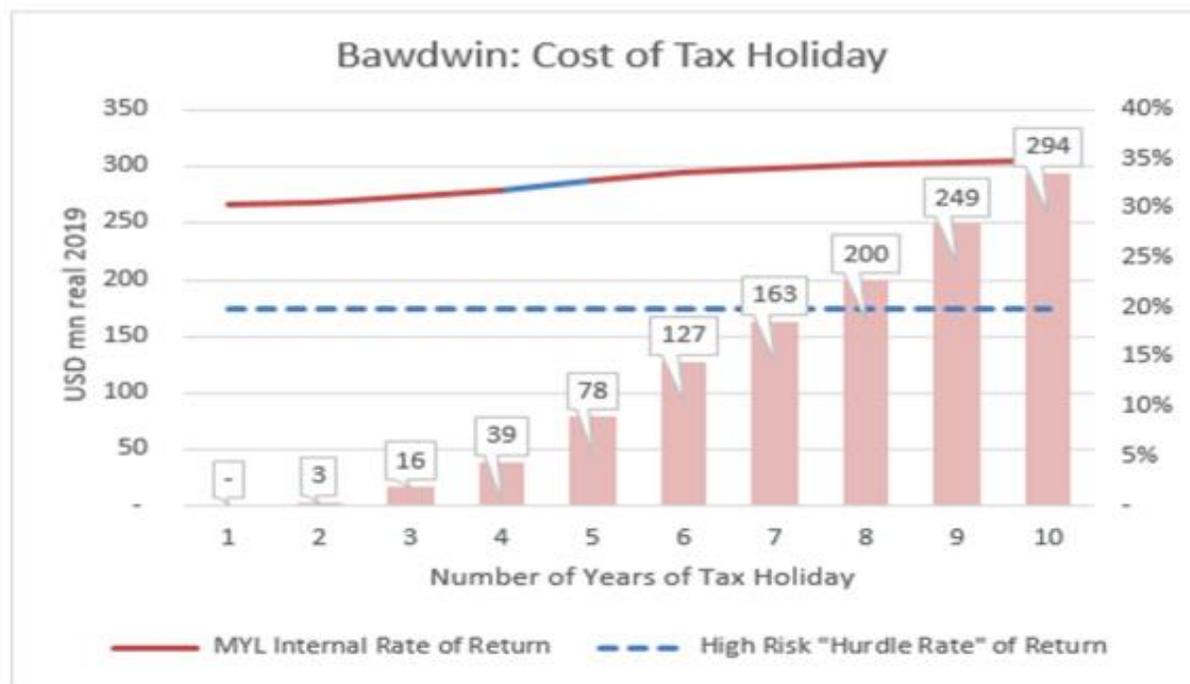
Saudi Arabia's national oil company offered shares on the Riyadh stock market in Dec 2019. But how would the country's public finances affect potential dividends to shareholders? This graph plots IMF predictions for sovereign debt over the next five years, based on one oil price scenario and then compares it to other possible prices. The IMF base scenario (the thick line) shows debt rising to \$300 billion. But if the oil price dropped below \$60 that could accumulate faster, entering the grey zone at the bottom where the government would be forced to put up interest rates, or devalue the currency – both politically sensitive.

Energy Transition / long-term forecasting: what future new NOCs (Senegal)?



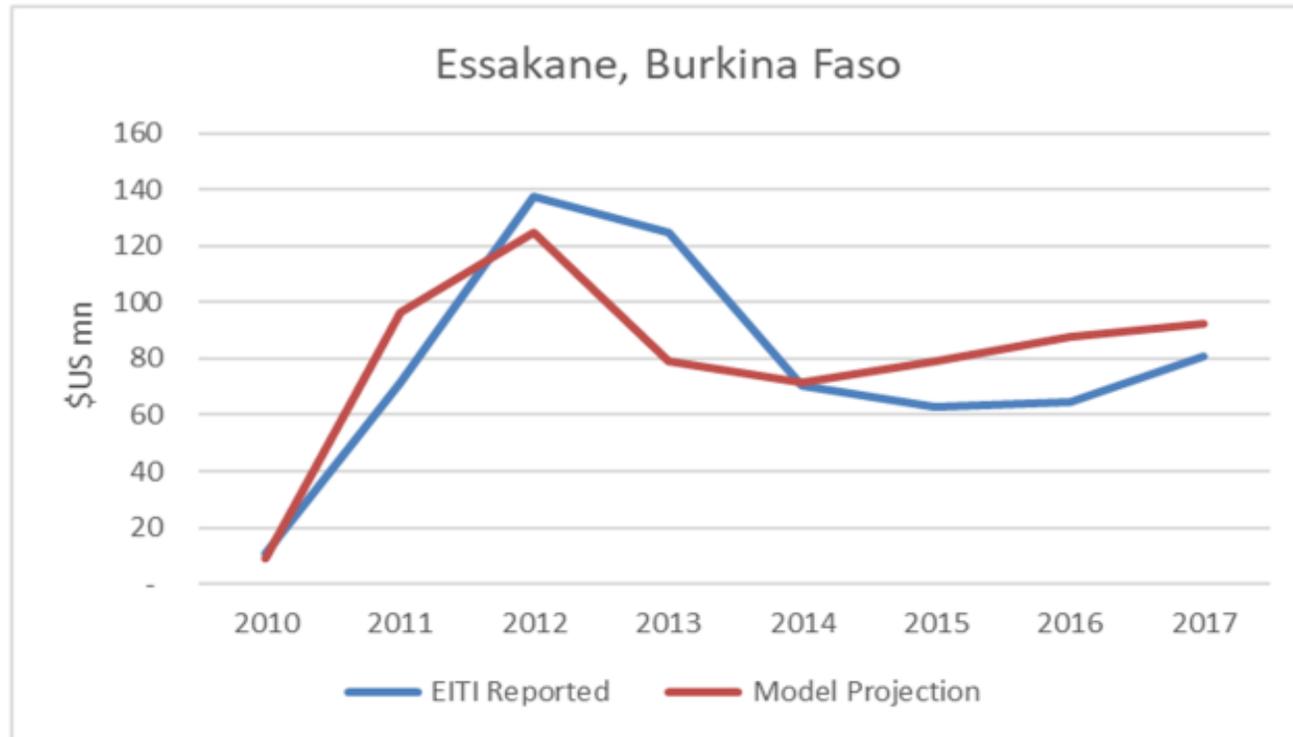
What does the energy transition mean for national oil companies? This graph shows how value could be destroyed when oil demand peaks, taking Senegal as an example. Projecting demand peak in 2024, based on an IMF working paper, each of the lines represents the net balance sheet of Senegal's NOC Petrosen after it has paid back the loan on its equity stake. For the SNE field currently being *developed* (the blue line) Petrosen finishes positive after repaying a billion-dollar loan. But an SNE-size field *discovered* today would never pay itself out because Petrosen would be repaying its loan out of oil revenues that by then were strongly declining.

Myanmar: how much does a tax holiday cost?



Are tax holidays worth it? This graph presents a case from Myanmar's largest investment prospect, Bawdwin. The bars show how much corporate income tax would be lost to the government if a tax holiday of the corresponding number of years is granted. At the norm of 7 years, Myanmar loses \$163 million in taxes. However that still does not resolve the question of whether incentives were necessary. The right hand axis charts the company's rate of return. The red line at the top varies between 31% and 36% depending on the tax holiday decision. But that is still above a typical 20% "hurdle" rate of return a company might seek at start up.

Burkina Faso: Tax Gap Analysis



Is what *was* paid what *should have been* paid? This graph uses EITI reports to show tax payments (the blue line) reported in Burkina Faso's largest mine, Essakane, since it began in 2010, and compares them to payments the financial model, based on the company's commercial information and the contract, predicts should have been made (the blue line). The spaces between the two lines are "tax gaps". Here they go both ways. The lower reported payments after 2014 may relate to a revolution in the country that year – officials say the issue is under discussion in government. But not all gaps can be readily explained. The model often serves to frame questions for further research rather than provide full answers.

