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The Dynamics of the Revenue Maximization–Market Share Trade-Off:

Saudi Arabia's Oil Policy in the 2014–2015 Price Fall

Executive Summary

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This paper follows on from '*Saudi Arabia's Oil Policy: More than Meets the Eye?*' published in June 2015, which raised a set of fundamental questions in relation to the sharp drop in the oil price between June 2014 and January 2015, and OPEC's decision, spearheaded by Saudi Arabia, not to cut output in response. Namely; has there been a shift in Saudi Arabia's oil policy? And if so, what are the implications for the short and long run dynamics of the oil market? Has the role of the 'swing producer' moved from Saudi Arabia to the US shale producers? In this paper, we develop a simple analytical framework, which formalizes Saudi Arabia's decision-making process, relative to the fundamental revenue maximization-market share trade-off in the 2014-15 oil price fall.

We argue that Saudi Arabia aims to secure a target revenue, a target market share, and to optimize the size of its spare capacity. As the policy instruments available to the Kingdom are limited, all three targets are achieved through modifying output (and investment, which affects output in the longer term). The degree of market share is correlated with the size of spare capacity; thus we can reduce the ultimate policy objectives to revenue and output levels.

A shock that results in a significant shift in the oil price and/or output level triggers a response from the Kingdom. Our framework rationalizes the response mechanism in the face of a market disequilibrium due to shocks, by showing how any oil market disequilibrium can fall into one of four different scenarios presented in the paper: namely, 'within-target' variations, an output drop, a price fall, and a price-output fall.

While factors, such as revenue requirements of the Kingdom, the intrinsic value of market share, production level constraints, and the role of demand and surplus capacity, always play a role irrespective of the type of oil shock, there are additionally event-specific factors unique to each oil price fall. The advent of US shale oil in the most recent oil price collapse is one such event-specific factor. The characteristics of event-specific factors play an important role in the short-term oil policy of the Kingdom, and the lack of information about the nature of these factors introduces considerable uncertainties in various dimensions. For instance, one uncertainty is whether the effects of specific factors on oil market crises are of a transitory or permanent nature. The effect of uncertainties becomes even more pronounced when related to a critical piece of information needed for a policy response. An important dimension of uncertainty regarding unconventional oil in general and US shale oil in particular, as an event-specific factor, pertains to its elasticity. The shale oil supply curve can be of any form, with different implications for Saudi Arabia's policy response.

Using a simple game, we show that under uncertainty, it is always better off for the Kingdom to assume shale oil supply is elastic and not to cut output. But we also argue that as Saudi Arabia learns more about this new source of supply, its policy will adapt accordingly. The fact Saudi Arabia's oil policy could change as the trade-off between revenue maximization and market share evolves, and as new information is transmitted to the market, will keep the market second-guessing. It will continue to shape market expectations and influence market outcomes.