

## Paper 157 (abstract only)

Title: OPEC: Dominant firm competitive fringe revisited

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Overview: In the traditional dominant firm – competitive fringe model of OPEC crude oil behavior, OPEC acts as a Stackelberg quantity setter. The model assumes that OPEC sets quantity so as to maximize profit according to its marginal revenue equaling its marginal cost, while accounting for the cost structure of a competitive fringe of producers. OPEC faces a residual demand curve resulting from the production activities of the competitive fringe, who produce to the level where their  $MC=P$ . Recent events suggest that modifications to this modeling approach must be made.

First, there are adjustments to the model related to a change in the underlying cost structure of the competitive fringe. These changes are caused by technological advances employed primarily in the non-OPEC competitive fringe. The technological advances that this research focuses on are the combined application of horizontal drilling and hydraulic fracturing, and the improvements that have occurred.

And second, recent production decisions by OPEC suggest that it does not adjust production according to  $MR=MC$  profit maximization criteria. The recent decisions suggest that profit maximization may not be the primary objective, and the nature of the recent decision is assessed for the likely impact on global market shares and prices.

The paper develops extensions to the traditional model in both algebraic and graphical forms. The results provide an alternative view of the dynamics of the price of crude oil.

Abstract:

Methodology: The methodology is mathematical and graphical. This is primarily a theoretical analysis with descriptive linkage to current market observations.

Conclusions: The expected results from this analysis are that the dominant firm-competitive fringe model continues to produce useful results for understanding the interplay of global crude oil producers and the implications for price movements and market share resulting from significant technological changes.

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