A Test of the OPEC Cartel Hypothesis, 1974-1983: Discussion
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Source: *The Journal of Finance*, Vol. 40, No. 3, Papers and Proceedings of the Forty-Third Annual Meeting American Finance Association, Dallas, Texas, December 28-30, 1984 (Jul., 1985), pp. 1006-1008
Published by: Blackwell Publishing for the American Finance Association
Stable URL: http://www.jstor.org/stable/2327829
Accessed: 26/11/2009 08:44

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DISCUSSION

RICHARD P. CASTANIAS*: The Loderer paper addresses the question of whether OPEC nations have been able to effectively cartelize the international petroleum market. Loderer argues that the policy decisions of an effective cartel affect spot market oil (or related) prices. This hypothesis is tested by examining the correlation between OPEC policy changes and changes in spot oil (and future market contract and stock portfolio) prices during the period 1974 through 1983. A significant correlation is argued to be consistent with an effective cartel, whereas the finding of no correlation between OPEC policy changes and prices is argued to be inconsistent with any cartel model but consistent with the market for oil being competitive. Loderer finds that there is no significant relationship between OPEC policy changes and spot oil (and other) prices during the period 1974–1980, but finds a significant relationship for the years 1981–1983. He concludes that the evidence is consistent with the notion that OPEC is an effective cartel during the latter years but not during the period 1974–1980.

These conclusions are especially interesting in that they clash with conventional wisdom that holds the OPEC cartel responsible for the runaway oil prices of the early 1970's and with the generally high and increasing oil prices of the late 1970's. Loderer's findings are also in contrast with the prevailing belief that the effectiveness of the cartel has lessened in the 1980's relative to the 1970's. Clearly, the Loderer results suggest the possibility that widely held perceptions of the effectiveness of the OPEC cartel are unjustified.

The Loderer findings and conventional wisdom might be reconciled in two ways: either there may be some question about the interpretation of the results of the study, or the results themselves may be suspect due to econometric problems that are obscuring a correlation that actually exists between spot (and other) prices and OPEC policy changes.

As for the interpretation of the results of the study, does it necessarily follow that a competitive market for oil will be characterized by no correlation between OPEC official pricing policy changes and spot prices? The existence of an official price is not in itself evidence of effective cartel. In recent years both Britain and Norway have discussed setting official prices at the average of previous month spot prices, and it has been rumored that Britain will adopt such a policy officially in early 1985. Obviously, such a pricing policy would lead to official price changes being correlated with changes in the market price, even when the market is

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competitive. In fact, it is difficult to imagine a competitive market where "official" and spot price changes are uncorrelated.

It may be equally difficult to argue that a significant correlation between spot and official OPEC prices necessarily will occur in the short run if the cartel is effective. The goal of a cartel in the longer run is to sell desired quantities at desired prices. If the forces at work in the spot market are affected by short-term excess supply or political conditions, but are not a threat to the cartel in the long run, then OPEC may be achieving its long-run goal at prices that vary considerably from spot market prices that are observed at any given point in time.

The interpretation of Loderer's empirical results is confounded by an additional factor. Although most producing countries attempt to sell their oil by contract at official prices, OPEC and other producing nations with official prices can also sell oil in the spot markets. This possibility has received considerable publicity recently when spot sales at prices more than two dollars below official prices have been rumored to involve as much as 80% of British, Norwegian, Algerian, Nigerian, and Iranian production. Saudi Arabia has on numerous occasions during the past ten years accused other OPEC members of price shaving and excessive spot market sales. On other occasions discounting and intra-OPEC price differentials were condoned by OPEC. If the percentage of production sold at other than the official OPEC price varies with time and circumstances, then the degree of correlation between spot and official prices will vary. The correlations actually observed at a point in time may, once again, be subject to various interpretations depending on exactly what circumstances one believes induced sales at spot rather than official prices and on exactly how seriously official prices were being taken.

Although correlations between spot and official prices seem difficult to interpret it should be kept in mind that what is actually being tested here is whether OPEC price announcements really matter. Perhaps marginal price adjustments really did not matter during the 1970's. Most post-1973 OPEC price change announcements came as no great surprise, and official OPEC prices were relatively stable through the seventies. Higher prices do not necessarily even mean larger monopoly rents. What might have "mattered" more during the 1970's, however, was the status of OPEC as a cartel. Suppose the OPEC cartel was successful in 1973 and 1974 at commanding prices that generated higher profits for its members than would have been earned in its absence. Then any information from OPEC meetings that shed light on changes in the probabilities of continued success may well have had an impact on spot (and other) prices. During the 1970's, marginal price change announcements could have but probably did not provide useful information about the status of the cartel. Furthermore, marginal price change announcements should be less useful when the cartel is strong and more useful when the cartel is weak. Once again, this suggests that the Loderer empirical results are consistent with the interpretation that the OPEC cartel was strong during the 1970's but diminishing in clout during the 1980's.

Finally, it should be noted that econometric problems may be obscuring a correlation that actually exists between spot (and other) prices and OPEC policy changes. An example of an econometric problem that could bias the Loderer study toward finding no correlation where one actually exists would be measurement error either in the price series or in the timing and nature of the policy changes. The fact that Loderer finds similar correlations with a variety of price measures is encouraging, and suggests that measurement problems with price may not be too severe. The problems associated with identifying and measuring policy changes that are associated with cartel effectiveness are more difficult and were discussed to some extent previously. Aside from measurement issues, the econometric methods used here seem appropriate for testing the significance of the correlations between prices and policy changes.

In summary, knowledge of the correlation between spot and official policy price changes is not sufficient to allow us to differentiate between cartelized and competitive markets. The Loderer findings are equally consistent with at least two possibilities:

1. the OPEC cartel was effective during the 1970's but not the 1980's, or
2. the OPEC cartel was ineffective during the 1970's but effective during the 1980's.

A more complete specification of the relationship between cartel official prices and spot market prices may resolve the ambiguity of the present tests. Additionally, changes in policy concerning cartel production levels might be formally incorporated into the test (Loderer discusses production policy but, as with prices, the relationship between official policy and effectiveness of the cartel is not presently completely specified). Yet another possibility might be to focus on the spread between spot and official prices. However, until the tests are more completely specified, the OPEC cartel effectiveness hypothesis remains untested.