

Organisation of the petroleum exporting countries (opec)



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OPEC – A cartel?

Introduction

Organisation of the Petroleum Exporting Countries (OPEC) is an international cartel of oil producing states (Princeton). It was founded in 1960 by Iran, Iraq, Kuwait, Saudi Arabia and Venezuela with an objective to co-ordinate and unify petroleum policies among Member Countries. It also wanted to secure fair and stable prices for petroleum producers, an efficient/regular supply of petroleum to consuming nations and a decent return to those investing in the industry (OPEC*). The current members include the five founding countries, Algeria, Angola, Ecuador, Libya, Nigeria, Qatar and UAE (OPEC*).

OPEC is synonymous with cartel or monopoly in the economic literature. OPEC has puzzled many economists because it does not have the characteristics of a cartel, even then the international oil market does not seem competitive (Huettner, 2000). Adelman states:

“ There is no way to explain the price upheavals by higher demand, deficient supply, changes in discounting, or political objectives. The only story that makes sense is that sellers achieved some degree of market control: Monopoly. In a little over a decade, OPEC became a cartel unbound” (Adelman, 1995)

Economics textbooks use OPEC as an example of a profit-maximizing cartel, and that cartels divide the market, establish quotas, and defend prices. Yet, OPEC never divided the market, had no quotas until 1983, and never defended oil prices as an organization (Huettner, 2000).

Many models have been developed to forecast oil prices and to model the world oil market based on the assumption that OPEC is a profit-maximizing cartel. The only consistent element in these models is that all of them failed in their forecasts and predictions[1]. A few studies argued that OPEC did not fit the cartel model but this part of the literature is underdeveloped because of the widespread assumption that OPEC is a cartel. The failure of the cartel approach suggests that non-cartel approaches are needed to explain the oil market (Huettner, 2000).

In this essay I shall try to talk about OPEC, and analyse it using various economic theories. Besides this I have touched upon some key literature content on “ OPEC as a Cartel”. This gives an insight into various economists view on the OPEC. Also a comparison of OPEC with other Cartels is looked upon to highlight some of the major differences OPEC has from other conventional Cartels.

What is a Cartel?

When companies learn to co-operate, cartel behaviour may emerge. Cartel was a way to make more profits, by moving price towards the monopoly side on the demand curve. Cartel outcome compared to Non-Cooperative outcome in Cournot Model is shown below in 1 (Courtesy: Peter Swann slide). Cartel may break up under pressure because of a breakdown in trust.

Cartel's can be explained by the prisoner's Dilemma too. Table 1 describes the outcomes (Courtesy: Peter Swann). Basically in a cartel you get rewarded for co-operation and punishment in case of a defection. This is the case for

most Cartels. However we will see how OPEC differs in the case of non-cooperation compared to conventional cartels in further discussions.

Supply and Demand Curves

An explanation to shifts in oil prices can be interpreted by studying demand supply curves. Let's consider the oil producers decide to decrease supply due to some turmoil in any oil supplying country (2). The supply curve will move to the left. This correlates to an increase in price but the overall quantity of oil sold decreases.

There is also a reality of increased demand from developing countries like India and China (3), which shift the demand curve to the right. This correlates to an increase in both price and oil sales.

Cartels, demand elasticities and profit maximization

A ' profit-maximizing' cartel operates on the elastic part of its demand curve. If the cartel does not operate on the elastic part of its demand curve, it does not dominate the market or it is maximizing something else. If the cartel is maximizing revenues, the elasticity must equal one; if it is maximising profit, elasticity must be larger than one. The cartel in question is neither maximizing profits nor revenues or has no power as a cartel if the elasticity is less than one (Huettner, 2000).

Let's consider a simple model to calculate the elasticity of demand for OPEC oil under the widely used assumption that OPEC is a profit-maximizing cartel.

The demand for OPEC oil is nothing but the residual demand. This is the difference between world oil demand and the supply of non-OPEC oil. The following model (Table 2) was used by Alhajji and

Table 4 demonstrates the results of the estimates by Alhajji and Hettner (2000) for the equation 4. The table shows the demand elasticity for OPEC's oil and Saudi oil between 1973 and 1994 on a quarterly basis. The results clearly show that OPEC's demand elasticity has been less than one for the entire period, as against Saudi Arabia which has had elasticity more than one. This means OPEC has been operating on the inelastic side of the demand curve, which is in contradiction to the profit-maximising model and also the revenue-maximising cartel model. However the demand elasticity for Saudi Arabia shows that it is a swing producer. This is results from only one model. There might be a need to apply other models to understand the elasticity in greater depths (Huettner, 2000).

Summary of the various studies on Cartel

Many studies have been undertaken to study cartels by using various models. They can be mainly be categorised into non-cartel and cartel models. These models range from purely political considerations by Moran (1982) to property-rights arguments and target-revenue models by Teece (1982) (Bockem, 2004). Odell and Rosing (1983) studied Cartels and concluded that changes in property rights explain the sharp increase in oil prices in 1973. They believed that changes in property rights led to lower production and lower investment, this during the time when oil companies were overly optimistic about the future of oil supplies (Odell, 1983).

There are other studies which believe that political factors caused increase in oil prices and that the limited absorptive capacity of OPEC members sustained these prices. These studies include Salehi-Isfahani (1987) and Ezzati (1982). Some economists believe that the oil market is competitive and that speculation, market inefficiency and panic caused the oil crisis (Huettner, 2000). Bohi and Toman (1993) had concluded that OPEC was not using its possible monopoly power to its full potential (Bohi, 1993).

There are other studies which focussed on Saudi Arabia acting as a dominant producer. Singer (1983) is one such study which introduced this line (Singer, 1983). Even Adelman argues in many of his articles that Saudi Arabia acts as a dominant producer (Adelman, 1995).

There are many other studies which have not been mentioned here, but I am sure we will have many more interesting studies using different modelled approaches to answer the economics behind OPEC and the oil pricing.

Comparison among international commodity cartels

There are various Commodity cartels in international trade. A comparison of OPEC with some of these cartels has been highlighted here. The intention of this is to highlight the difference between OPEC and the others. Most of the data used here was taken from Alhajji and Hettner (2000), (James, 2005) and (Pindyck, 1978) study on Cartels.

1. Quota system

OPEC did not have a system until 1983. This is a sign of OPEC not being a cartel by definition since cartels assign quotas to its members since its origination. Other cartels are known to assign quotas at the very offset of the <https://assignbuster.com/organisation-of-the-petroleum-exporting-countries-opec/>

cartel. Even after 1983 OPEC members did not completely abide by the quotas. In most cases quotas are known to be enforced, followed and monitored. However the Quota system increased transaction costs within the organisation and pushed OPEC further away from the ideal and frictionless cartel (James, 2005). Table 5 describes this very behaviour of other cartels.

The Tin Producer Association (TPA) and International Tin Council (ITC) and all their tin agreements have been under a quota system (Gocht, 1988). Even the international Coffee Organization (ICO) and their international coffee agreements have a quota system (Maxey, 1996). Even unsuccessful cartels, such as the sugar cartel, the International Copper Cartel, International Cocoa Agreement, the International Wheat Agreement of 1933, etc all had a quota system at the offset of their birth (Brown, 1980)

2. Monitoring system

OPEC established the ministerial monitoring committee in 1985. Under this process OPEC may send monitors to a suspected country to check for violations. However, this monitoring is only for a short period of time, and it does not involve any certification of exports. This contrasts monitoring systems of other cartels which work around the clock. For example the coffee cartel has hired an auditing company to monitor compliance. The (ICO) requires all exporting members to issue certificates of origin for every shipment (Brown, 1980).

3. Punishment mechanism

Classical cartels had a punishment mechanism to deter members from any cheating. In the tin cartel, for example, violation will lead to a reduced quota

in the following quarter. In the coffee cartel, cheating countries will suffer a future quota reduction equal to the amount of the over shipment. Second and third over shipments have double-deduction penalties for the over shipment. Repeated violators may be expelled from the organization with a two-third voting majority (Brown, 1980). The most severe punishment is found in the diamond cartel with De Beers acting as the cartel authority. De Beers uses the buffer stocks to punish quota violators who want to leave the cartel (say by lowering the price of their type of diamond). OPEC has no such punishment mechanism.

4. Cartel authority

OPEC member governments retain production autonomy. This is not the case in other cartels where the authority of the cartel is above the member countries. The tin cartel for example, has the power to order a member country to lower its production to maintain the price floor (Brown, 1980).

5. Buffer stocks

The objective of buffer stocks is to enable cartels to control the prices within a range. The cartel would maintain a fund and keep some part of the commodity in stocks. The cartel authority can use these funds to buy the commodity from the open market when prices fall below the minimum level, thus ensuring an increase in price. OPEC does not have any such mechanism. OPEC does set a guideline price, but prices fluctuate around it without limits. In fact data show that OPEC pricing follows market prices (Huettnner, 2000).

4 shows the production/production capacity of OPEC members between 1973 and 1994. The excess capacity is the difference between production capacity that exists mainly in three countries Saudi Arabia, Kuwait and UAE. Other OPEC members produced at capacity most of the time. OPEC does not control the excess capacity of these countries (Huettner, 2000).

6. Large market share

OPEC's oil production and market share had declined to 30% and was at a maximum of 56% between 1970 and 1999. The current share for OPEC is around 33% (OPEC*). This is considerably small as compared to other cartels. The coffee cartel for example controls over 90% of the world coffee production. The tin cartel controls more 80% of the world tin production. Even unsuccessful cartels like International Copper Cartel had controlled 70% of the world market share (Huettner, 2000).

Conclusion

OPEC has been discussed with various basic models like cartout model, Prisoner's dilemma, and demand/supply curves. This discussion ignored real data, and looked upon only the theoretical implication of economic models on OPEC, assuming that it is a cartel. Having analysed some of the literary work on Cartels, and related data for OPEC, it is clear that OPEC is not any conventional cartel. The absence of a large market share and the fact that demand elasticity is less than one for OPEC clearly raises questions on OPEC being a cartel by definition. Saudi Arabia, which is part of OPEC, does have demand elasticity greater than one, thereby allowing it to go for profit maximisation. Some countries associated with OPEC do have excess capacity

and OPEC's lack of any punishment mechanism to control this does tend to offer countries associated with it to maximise their profits.

This essay only looks at basic economic model implication on OPEC. There is scope to do further studies on this area. Further aspects of OPEC's impact on macroeconomics could be studied. OPEC's contribution to member countries' maximising profits could be studied in greater depths.

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[1] Many studies published in the 1970s predicted prices above \$75 a barrel in the 1990s. (Huettner, 2000)