# WHAT ROLE, IF ANY, DID OPEC HAVE IN OIL PRICING IN THE 1970s

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Near the end of 1973, the Organisation of Petroleum Exporting Countries (OPEC), increased the average price of crude oil to about US $ 10, - per barrel, more than four times the prevailing price earlier that year. This price was increased another 10% in 1975, nearly 15% from 1975 to 1979 and about doubled from early 1979 to early 1980. By December 1980, the price of the United States imported oil averaged US $ 35.63 per barrel, more than 12 times the price in mid 1973.

This increase in the price of oil has been seen as a result of the collective actions of oil producing countries, and OPEC has become the popular scapegoat for all the macroeconomic ills the international system has suffered during the last 10 years.

In this paper we will survey some of the most representative theories relative to the behaviour and structure of the OPEC and we will try to highlight the OPEC s role in the structure of oil prices during the last decade.

Various factors have been combined to create the image of «OPEC - cartel». Firstly, OPEC had a dominant position in the petroleum industry. From 1945 to 1979, about three fourths of world oil discoveries were in the Middle East[1] and in 1973 the share of OPEC in the world oil production was 55.5 %[2] Thus the incentive for concentration, ownership of strategic raw materials, was present. Secondly, the supply of oil from non - OPEC nations was relatively price inelastic at least in the short to medium term. Although, the price of oil has increased about twelvefold from 1973 to mid 1980, oil output in non-OPEC nations has increased only by 24%[3]. It is estimated that the long run price elasticity

of the non-OPEC oil supply is between 0.33 and 0.67 [4]. Thirdly, the oil demand by non-OPEC nations is price inelastic, at least in the short run. From 1973 until mid 1980, oil prices had risen about twelvefold, while consumption had declined only 10%, from 34.2 to 31.1 million barrels per day[5]. Although the above figures should not be taken literally as they are ex-post and are affected by government policies and specific environmental situations[6] (inflation, exchange rates, freight rates etc.) they have inspired many economists in their efforts to prove that OPEC had all the advantages to be an effective cartel.

Finally, there were many groups interested in promoting the concept of an OPEC «cartel», or they were ready to tolerate and defend monopolistic actions. The member states want to believe that OPEC had cartel powers, otherwise they would have lost their bargaining advantages in negotiations concerning such matters as the Middle East politics and military equipments. The OPEC bureaucracy felt more secure if the world believed in the cartel concept. Industrial countries found OPEC a perfect excuse for their ineffective policies and the alarmists of the Club of Rome were satisfied as the price increase enforced eventually conservation measures all over the world.

Below, we examine the application of various theoretical models on the oil - OPEC market. The traditional collusive oligopoly theory, distinguishes two formal types of collusion, cartels and price leadership. Both types, in their general form, have been exhaustively analysed by W. Fellner[7]. The most typical forms of cartel are :

a. cartels aiming at joint - profit maximization, that is, maximization of the industry profit and

b. cartels aiming at the sharing of the market.

In the former type, the firms (in the case of oil the countries), appoint central agency (OPEC), to which they delegate the authority to decide not only the total quantity and the price at which it must be sold, so as to attain maximum group profits, but also the allocation of production among the members of the cartel and the distribution of the maximum joint-profit among the participating members. The authority of the central cartel agency is complete.

The inherent problems with which such a cartel is faced, are analysed by Fellner, Koutsoyiannis [8] and others and need little elaboration. However, OPEC had never such powers in order to qualify for such a type of cartel. Its meetings ended more often in dissaray than in agreement and as Pindyck9 has put it «the success of a cartel depends on to .... whether a group of producers . . . can agree on an optimal aggregate production level,. . . agree on a division of output

and profits . . . and find a means to detect and deter cheating». Virtues that were never OPEC's characteristics.

Market sharing cartels are more common in practice as the individual members keep a considerable degree of freedom concerning their selling activities and other relevant decisions. The two basic methods for sharing the market is determination of quotas and non price competition.

The first method is an agreement on the quantity that each member may sell at the agreed price (or prices). Shares are allocated on the basis of past levels of sales and/or the basis of productive «capacity». Past levels of sales and/or the definition of «capacity» of the individual member depends largely on their bargaining power and skill. In the case of OPEC the criterion for quota - sharing at least officially, seems to be the producers requirements. «Sheikh Yamani declared that supplies should not be determined by producing capacities but by producers requirements» to. This criterion, however, is even more difficult to be determined than the previous classical criteria and the need for bargaining skill becomes the main factor in allocating quotas.

OPEC had never tried to set production levels during the decade of the 1970s, probably because they did not need to or they remembered their unsuccessfull efforts in 1966. Moreover, as W. I. Mead [11] found «there is no evidence of coordinated control over output with constant market shares». Mead tested R. Pindyck's [12] and T. Moran's [13] hypothesis for the period 1974 - 77. R. Pindyck has clasified OPEC members into «saver countries» and «spender countries». One wouldexpect that the saver countries might be willing to bear the burden of output reduction, permitting spender countries who could not afford output reduction to maintain or increase their level of output. Similarly, T. Moran has classified OPEC member countries into a «core of balance» and «competitive fringe» countries. The former group consists of countries that adjust production to meet the remaining demand, while the latter group consists of «high population, high mobilization» countries that préfet to produce at a rate as close to full capacity as possible. For the under examination period, both models gave results that do not correspond with expectations based on standard models of collusive behaviour.

Even officially, the member countries of OPEC refused the existence of a prorationing programme in 1975 when they were under strain. «No plot for programming oil output to maintain price levels has been evolved by producers contrary to reports. Members of the working party of experts that preceded the oil Ministers meeting dented all knowledge of any such plan. No discussion on a formulated specific scheme has taken place, they said» [14].

In a non-price competition agreement the members agree on à common price at which each of them can sell any quantity demanded. The price is set by bargaining and the members compete on a non-price basis. The question which arises is whether OPEC sets the price of oil. Price setting would require the existence of an overall pricing structure and the changes in prices would come as a result of a bargaining process in an OPEC meeting. However, in the word s of Dr. A El- Mokadem [15] «OPEC never had an overall pricing structure; not even in theory». OPEC never agreed on a price structure based on differentials for gravity, quality and freight, but always this task was left to the discretion of individual members. Thus, in 1977, Kuwait changed its price from US $ 12.32 per barrel to US $ 12.22 per barrel in response to market circumstances though OPEC differentials remained unchanged and the market remained at US $ 12.70 per barrel. As far as the changes in prices are concerned only the increase in the price in December of 1973 can be conceived as an OPEC decision. The decision in October of 1973 was a ministerial decision and the decisions from 1974 to 1978 were actually non-decisions. From 12 meetings during this period only twice there was an agreement on positive decisions. (Sept. 1975 and Dec. 1978) and from December 1976 until June 1977, Saudi Arabia and the U.A.E., had different prices from the rest countries of OPEC. Even before the split, the member countries were changing their prices whithout consultation of OPEC. Thus, it was reported in 1975 by the press [16] that «Kuwait has been cutting the price of oil through the price credit terms, offering a price of US$8,5 per harrel» while the official price was US $ 10.147 per barrel. Moreover, OPEC did not follow the advise of its own consultants. On the 25th of September «Dr. Amouzegar, Iran's chief delegate, revealed that OPEC's economic commission recommended an increase, anything from 78-80% at the highest down to 42% if the erosion in the purchasing power of oil revenues was to be compensated [17]. The result in the subsequent meeting was an agreement for a modest increase of 10 % for a future date which was what Saudi Arabia wanted.

The role of Saudi Arabia in the structure of OPEC has been the basis for the view of a dominant-firm or price leadership model. In this form of co-ordinated behaviour of oligopolists one of the oligopolists sets the price and the others follow it because it is advantageous to them or because they prefer to avoid uncertainty about their competitor's reactions. The leader, in order to have the power to impose his price, must be both a low-cost and a large producer.

Saudi Arabia satisfied both these requirements. Dr. P. Stevens[18], studied extensively Saudi Arabia and for the period 1974 - 78 finds that the oil producer countries conform with the model of price setting leadership. Saudi Arabia in

consultation with the oil companies, determined a relatively narrow band of prices and they entered the OPEC meetings having in mind this band. The negotiations during the meetings were concerned with where, within these limits, the marker would be set. The system, with an exeption of six months in the beginning of 1977, worked well until 1978, when the technical difficulties of the Saudis' to increase their hypothetical producing capacity was exposed with the known consequences for the price of oil. During the same period the price of the other crudes was determined by what the market woult bear.

K. Pakravan[19], comparing four structures (pure competition, pure monopoly, dominant firm and dominant core), finds that the dominant core structure gives the best results for the period 1973 - 1979 and supports empirically the observable fact that Saudi Arabia out-weighted the rest members of OPEC in decision taking.

Dr. El - Mokadem[20] argues that Saudi Arabia's leadership behaviour did not conform with the price leadership cartel model, which operates on the criteria : reduce output in weak market and visa versa. This criticism, although right does not alter Dr. Stevens conclusion, that the central role in price setting belonged to Saudis and not to OPEC. The theory of oligopolistic market structure is not adequately developed and non-conformity with a specific model does not mean the rejection of all possible models. Moreover, Saudi Arabia's efforts for lower prices seem to be justified as the consensus of optimisation models is that «current prices (1979) are higher than OPEC's long run interest would dictate and in the long rum a steady and gradual increase in prices is optimal»[21].

Various other models have been suggested trying to explain OPEC's strucure. Salant[22] considers OPEC as a Nash-Cournot equilibrium structure with monopolistic core and a competitive fringe, Pakravan[23] considers it as a «dominant monopoly» structure, Gilbert[24] and Tourke[25] consider OPEC to be a dominant firm cartel and A. Daniels [26] based on a Telser[27] type model suggests that the oil market is determined by cartel rivalry and voluntary prorationing.

Ezzat [28] in an effort to incorporate all possible oligopolistic structures in a more comprehensive model and based on Adelman's[29] notice that «the fate of the cartel depends essentially on the strength of exogenous factors, demand and uncontrolled supply, versus the strength of an endogenous factor, the cohesion of the group» built a model which is able to assess the cartel's stability and survivability.

The existence of a «destruction gap» (negative difference of demand for OPEC oil minus minimum production requirements for economic needs) for a proonged period of time, will lead to a downward pressure on OPEC crude oil price,

to a disintegration of OPEC and to a competitive market. On the other hand, the existence of a «stability gap» (positive difference), may leed to an upward pressure on OPEC crude oil prices and to greater strength and stability for the OPEC cartel.

On the basis of this model, the last decade, was charracterised by a «stability gap». Demand was running ahead of supply and given the technical inelasticity of supply, a demand pull increase in the price was inevitable.

Various other factors have contributed to the increase in the price of oil. A.D. Johany [30], has studied the alteration of property rights and suggested that «the price of oil would have sharply risen independently of the pressure or absence of OPEC». Inflation had altered the relative value of oil and as Minister Yamani said in 1975 «on the basis of price Index of OECD countries since 1948, the price of 1974 should have been more than US$ 12.-per barell»[31]. The same view is confirmed by Pfiss[32] which writes «there is little or no increase on the price of oil dominated in 1946 dollars».

We will not elaborate more on the foundamental real reasons which push for a higher price of oil in the early 1970s as they need by themselves a separate study, but we will try to speculate on the possible effects of the non existence of OPEC.

It is highly speculative to rerun the history assuming that some events happened and other did not, but we think that it is secure to assume that the economic boom in the industrialised world would have happened even without the existence of OPEC. The United States would have had to rely on imported oil in any case and geopolitical events such as closure of the Suez canal, Arab-Israeli war and others would have happened independently of the existence of OPEC. The above factors secure an increasing demand for oil and disruptions in supplies.

Taking a monetarist point of view, inflation would have continued to accelarate, as it did from 1968, even without the shock of the oil price. Thus, inflation would have altered the relative price of oil.

Finally, Colonel Quadafi would have been successful due to his uncompromising and threatening attitudes and the special situation in which he found his country[33]. Therefore, foundamental reasons for an increase in the oil price would have been present even without OPEC.

The strengthening in demand, the inelasticity in supply, the operation of the «Law» of increasing terms [34] and the 1973 war, would have secured the first oil shock probably with a slightly different timing.

The shock would have been even mure severe as vïthont OPEC combanies would have found it difficult to prevent «leap frogging» and the extreme political pressures for nationalisation would have created even greater disruptions in supply as the Saudi Arabia would not have the mechanism through which to offer gradual participation as a neutralising mechanism.

After 1974, Saudi Arabia dominated OPEC and its policy had always a moderating influence. Dr. Stevens[35] analyses extensively the reasons that led the Saudis to keep this policy (long term interests, good citizenship, low absorbtive capacity, interdependence with west., e.t.c.) and we will not elaborate on the subject.

After 1978, the general picture was characterised by disarray and «non-existence of OPEC» as the imporrtant pricing decisions were made by members outside the OPEC framework. The price skyrocketed and the volatility increased as the low volume spot market which were used as a [36] thermometer for measuring the degree of tightness of world oil markets, exagerated the Iranian crisis. Probably this situation would have dominated through the whole decade without the existence of OPEC.

The conclusion of Edith Penrose[37] that «it (OPEC) not only made possible in the earlier years reasonaly orderly negotiations between companies and governments but it created a forum where the more conservative governments of the oil producing countries could exert an influence without resorting to public confrontation with their more radical colleagues and in particular, it enabled them to avoid political actions which might have forced them to go much futher in a radical direction than they would have wished», seems to give a fair idea of the role of OPEC during the 1970s.

## CONCLUSIONS

OPEC during the 1970s has become the scapegoat for all the misfortunes of the international economy. Behind the notion «OPEC - cartel» were hidden groups which were promoting their self interests and used OPEC as a smoke-screen.

OPEC never had the power and never acted as a cartel with the theoretical meaning of the word. During the 1970s, it was transformed form a collective bargaining agency to a clearing house for information and exchange of opinions.

Saudi Arabia as dominant firm and pricing decisions through implicit or explicit collusion between Saudi Arabia and the more extreme members (weighted

for the Saudis) seems to be the best model describing the oil pricing structure from 1974 to 1978.

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b. the large numbers of companies operating in the country and
c. Libya's bargaining technique

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