CARTEL AND THE MARKET: A CRITIQUE OF THE OPEC DECISION OF 26 MARCH 1999

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MASTER OF PHILOSOPHY

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21st July 2003

CERTIFICATE

This is to certify that the dissertation entitled, **"Cartel and the Market: A Critique of the OPEC Decision of 26 March 1999"** submitted by **Sameena Hameed** is her own work and has not been submitted to any other University or institution or for any other diploma or degree.

We recommend that this dissertation may be placed before the examiners for evaluation.

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DEDICATED
TO MY
DAUGHTER

HEBA

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Sameed

21 July, 2003 *SAMEENA HAMEED.*

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CHAPTER 1

CARTEL AND MARKETS: AN EVALUATION OF OPEC

The Organisation of Petroleum Exporting Countries (OPEC), since its inception in 1960 as a joint political initiative, endorsed a primary objective of arresting the erosion and increasing the level of revenue from oil, apart from aiming to secure total independence in the oil sector. OPEC immediately succeeded in strengthening oil prices and thus gave credibility to its *raison-detre.* Its unilateral assumption of oil pricing responsibility on 16 October, 1973 catapulted it into the centre stage of the international scene and earned it a characterisation of 'a cartel'. A cartel is a group of firms, which acts in collusion in pricing and output policy and is able to restrict the supply of commodity reaching the market and thus influences prices. The fact that OPEC began to hold periodic conferences, at which a price was declared for the oil, reinforced the image of the organisation as a cartel.

The abrupt price rise of 1973 under the aegis of OPEC caused sharp reactions and many researchers to investigate OPEC as a cartel. The oil price rise of 1978-79, the switch over to OPEC quota policy in 1982 and their futile endeavour to sail through troublesome 1980s by effective cartelisation have fuelled many researchers' imagination who seek to vindicate either those who did not believe that the cartel could maintain itself in effective operation or those who believed that the suspended animation of OPEC in 1985 was only the end of a cycle i.e. a break in the story. The political and economic scenario in the 1990s besetting the oil industry in general and

OPEC in particular has dramatically changed from that of 1970s and 1980s and has affected the strength of the organisation as a cartel. This study proposes to evaluate the OPEC decision of 26 March, 1999 to cut production by 1.7 million barrels per day (mbpd), which was to remain in force for one year, in the light of its ability to act as a cartel and how the market perceived the decision and reacted to it. This chapter seeks to examine whether the oil market in the 1990s is consistent with the cartels. Besides, it also explores whether OPEC is a cartel.

I THE ECONOMIC THEORY OF CARTELS

A cartel is a group of sellers operating together to regulate the over all supply in the market in order to keep price above the competitive levels. Many economists believe that cartels fail in the long run even if they are effective in the short run. A number of reasons are attributed to its failure.

The cartel members collude to restrain production in order to get high prices for their goods. However, high prices undermine the cartel's ability to maintain its collusive arrangements. This is because high price provides strong incentive for the non-members to expand production. Even if cartel urges the non-members to join they are not likely to do so. By staying out they can produce without control and still get the benefit of high price. In other words, they benefit from the cartel policies without having to bear the burden of production cuts. This is called the 'free rider' problem of the cartel theory. The high price reduces demand (through conservation and

substitution) and thus undermines the cartel. When the market for the cartel shrinks, problems of maintaining collusion grows.[1]

Once the price is established, still there are conflicts over the sharing of sales and profits. Any strategy chosen is likely to yield unequal benefits for the cartel members. One is to fix the price and allow the members to sell whatever they can. But this would benefit the low cost producer. Another is to fix the production quotas and let the market to determine the price. The high cost producers also do not prefer quotas as it limits their revenues. There are conflicts over quota allocations also. The quotas could be allocated on the basis of relative sales or production capacities of the members in the pre-cartel period. Then it would involve debate over the choice of the base year for the determination of the quotas. Quota determination ultimately depends upon bargaining and negotiation Therefore; it breeds mistrust and suspicion among the cartel members.

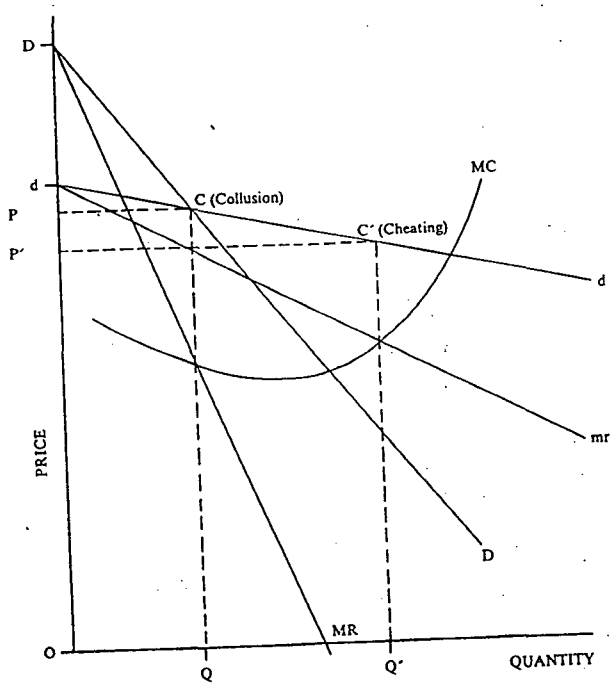
A production quota scheme, once accepted, is equally difficult to implement. The incentive for quota violations is great. In the light of the above discussion the cartel is said to carry the seeds of its own destruction. Since the work of Augustin Cournot (1838), the question of the stability of markets, dominated by few sellers, has continued to interest the economists. The theoretical debates regarding the cartel stability in the writings of Bertrand, Edgeworth, Hotelling, Sweezy, Hitch, Chamberline and others lead to the conclusion that the cartel stability is in part dependent upon the assumptions one makes concerning the complexity of the market and the

[1] Charles F. Doran, Myth, Oil, and Politics: Introduction to the Political Economy of Petroleum, (New York:Croom Helm, 1975), p. 138

degree of knowledge shared by the cartel members.[2] Charles Doran had demonstrated that the incentive to cheat is different from the ability to cheat. The demonstration of the former in the cartel theory is easier than the latter.

FIGURE 1.1

INCENTIVE TO CHEATING BY CARTEL MEMBER WHEN OTHER MEMBERS HOLD PRICE CONSTANT



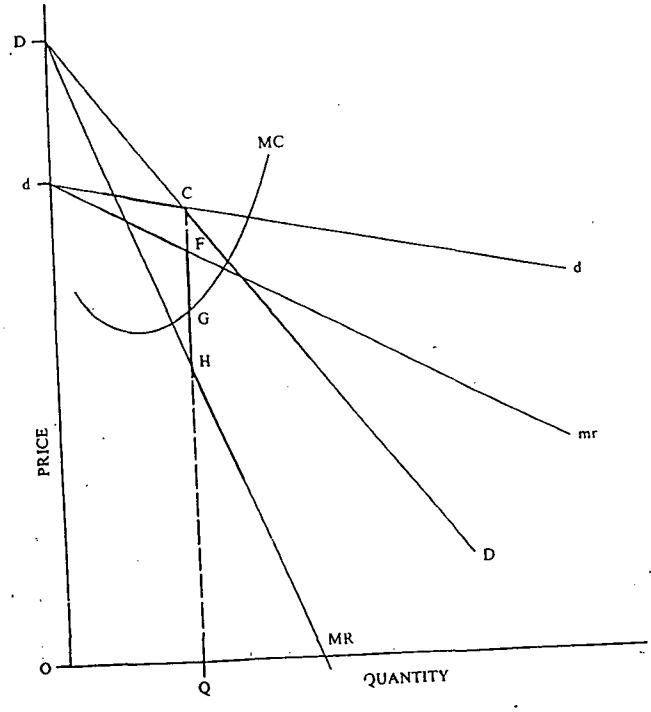
The figure shows the incentive to surreptitious cheating by a cartel member when the other members hold their price constant[3]. A cartel member individually faces a more elastic demand curve than that faced by the cartel[4]. Thus, each member within the cartel faces a kinked demand curve.[5] This is because of the asymmetric responses of the rest of the cartel

[2] Ibid, p.138
[3] A member can cheat by secretly discounting price in order to increase the demand for its goods.
[4] An elastic demand curve is one that is more responsive to unit price change.
[5] A kinked demand curve has a kink and the part of the curve above the kink is more elastic than the one below.

members to unilateral price change by any cartel member. If any member increases the price others don't follow. On the other hand, if the member cuts the price others would soon follow suit. Thus, the dissenter would not gain significant increase in demand as any increase gets evenly distributed among the cartel members. However, if other members adhere to their prices and allow cheating of a particular member to succeed then the member faces the more elastic demand curve dd. In this case the revenue bonus of P'C'QQ' is an ample award.

FIGURE 1.2

ADMINISTRATED PRICES ACHIEVED BY CARTEL LEADERSHIP



The above figure shows that if the other cartel members also cut price such that the cheater faces the inelastic demand curve DD and then his marginal revenue drops from F to H. Thus by attempting to cheat, the

individual suffers an immediate and precipitous decline in marginal revenues. This is a sufficient deterrent to cheat. This also has an implicit punishment mechanism for the cheaters. Thus, the stability of the cartel depends on the ability of the cartel members to restrict the dissenter on the inelastic demand curve DD. This ability maintains itself over the marginal cost range of FH. However, as demand becomes more elastic overtime, with more competitive supplies entering the market, this ability diminishes. Thus, cartel cohesion and stability depends upon the degree of competition in the market and the ability of the cartel members to deter cheating.

(i) OPEC in a Theoretical Framework: A Review of models

Many studies had shown the OPEC as a profit maximising firm (cartel) that seeks to earn monopoly profits, by influencing price and production. The only model, which had been empirically tested, is the single-equation OPEC cartel model. It was accepted by James Griffen (1986) and Clifton Jones (1990) and partially accepted by Carol Dahl and Yucel Mine(1991). The dominant firm model is widely used in the economic literature to explain the OPEC's behaviour. The dominant firm has control over the world oil price but not on its competitors' output. There are three main versions of this model. The first portrays OPEC as the dominant producer in the oil market. The second depicts Saudi Arabia as the dominant producer in the same. The third takes the OPEC core countries as the dominant producer. The later models included two versions. The first one is the two-part cartel (saver-spender), introduced by Robert Pindyek and Hnyilica (1976) and Dimitri Aperjis (1982). The second is a three-part cartel

(the core-price maximisers-volume maximisers) introduced first by P.L.Eckbo (1976) and later by Hendrik Houthakker (1979) and Osystein Noreng (1978). James Griffen and Nielson William (1986) also used a similar model but assumed monopoly behaviour on the part of the OPEC core countries. These single equation models were statistically tested and rejected by A.F.Alhajji in his dissertation on "Modelling OPEC Behaviour: Testing Alternative Models and New Explanations"(1995).

The dominant firm model considered OPEC as a cartel and assumed that members have a unified goal and collectively set the price of oil. The non-OPEC members are the competitors in the fringe. They include Mexico, the North Sea region, U.S.A, Argentina and Egypt. The demand for OPEC's oil is the 'residual demand'. The OPEC set the price where its marginal revenue is equal to the marginal cost. The competitive producers at the fringe supply the market up to the point where the 'set price' equals its marginal cost. The OPEC supplies the rest of the market.

The adoption of the quota policy by OPEC and the oil crisis of mid 1980s had led many analysts to predict the demise of OPEC as a cartel. Prominent among them were M.A.Adelman and Frank Gardner. Both had predicted that in case of surplus oil supplies and shrinking demand in the world oil market, the OPEC members would compete with each other for their respective shares in the world market.[6] It would thus lead to the disintegration of OPEC as a cartel.

[6] Mohammed E. Ahrari, OPEC: The Failing Giant (kentucky: University Press, 1986), p. 107

Some experts argued that the world market is competitive and oil price rise could be explained by factors other than the OPEC's behaviour. P.MacAvoy in 1982 explained oil price behaviour by a competitive model. These models rejected OPEC as a cartel for three reasons. First is that the non-OPEC production supplies the majority of the world output. Second is that the OPEC had never agreed on price. Third is that the OPEC has no mechanism for punishing the cartel members for deviating from any OPEC agreement. According to Alhajji, a punishing mechanism is one of classic characteristics of all cartels. OPEC's lack of one is a serious oversight of those who assign OPEC a cartel status. However, the fundamental disagreement over the structure of the world oil market still exists among the economist. A.F.Alhajji and David Huettner have highlighted six weaknesses of the above models. These are, the use of single equation models, official oil prices, data not adjusted for autocorrelation, limited sample size due to use of quarterly data for OPEC and annual data for non-OPEC and exclusion of demand and production costs from all models. [7]

A.F.Alhajji and David Huettner have developed three models: the dominant firm model, the Cournot model and the competitive model. They are dynamic and multi-equation models. Besides, political instability is also introduced while modelling the oil market. These models established another criterion for rejecting OPEC as a cartel. According to this, a cartel requires dominance in the market in addition to collusion among members. OPEC's market share had exceeded 50 percent in only two quarters (since 1983).

[7] A.F. Alhajji and David Huettner, "OPEC and the World Crude Oil Market from 1973 to 1994: Cartel, Oligopoly, or Competitive?", The Energy Journal, (Cleveland), vol.21, no.3, 2000, p. 34

Consequently, it had not acquired the level of market dominance to achieve the cartel results.

II. MARKET AND CARTELS IN 1990s

In order to evaluate OPEC as an existing cartel it is essential to examine the nature of the oil industry. This objective is to determine whether the oil market in 1990s supports cartels or resists it.

The oil market in which OPEC seeks to exercise its influence has greatly changed from that of 1970s and 1980s. The political and economic environment in which the oil industry operates is shaken up with the dissolution of former Union of Soviet Socialist Republics (USSR), the global environmental consciousness, the rise of newly industrialised economies particularity those of South East Asia and the proliferation of super- trading blocs (viz. the European Union, Association of South East Asian Nations etc).

(i) The Salient Features of the Oil Market

Marginal Supply The marginal oil supplies are from the high cost non-OPEC producers. Two factors are responsible for this. The first is the revenue needs of the OPEC countries, which have put an upward pressure on the price of oil, keeping it at a level such that production in high cost non-OPEC areas become feasible. The other is the rapid advancement in technology, which has significantly reduced the cost of production of non-OPEC producers. The favourable fiscal regimes of sympathetic governments

of non-OPEC countries facilitated it.[8] The producers outside OPEC are meeting most of the increase in the global oil demand.[9] This pattern is likely to continue as long as the above two factors exist.

Operation of the Futures Market (Paper Market) The oil market in 1990s has a relatively new price mechanism to determine the price. Price is a result of the interaction among willing buyers and sellers. There had been a proliferation of futures and forward market since 1980, where trade in papers rather than physical barrel takes place. The trade in paper is motivated by the need to buy and sell risk, associated with the availability of future supplies.[10] In the futures market hedgers, who are 'risk averse' people interact with the speculators, who are the 'risk lovers'. This gives a speculative dimension to the oil market and increases the level of uncertainty that is already prevailing in the oil market. The trade in futures market has profound impact on inventory management.

Carbon Taxes Rising environmental concerns have led to certain fiscal measures in the developed nations, which discouraged the consumption of fossil fuels, responsible for the carbon dioxide emissions. This led to the imposition of carbon tax on the petroleum products. This tax is more pronounced in the developed countries than in the developing ones. This not only transfers producer's surplus to the governments of the oil consuming nations but also insulates the price movements of crude oil from that of

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[8] Rilwanu Lukman, "Energy Issues to the Year 2000:OPEC's Perspective" OPEC Bulletin, (Vienna), vol.27, no.8, September 1996, p. 4.
[9] Rilwanu Lukman, "OPEC: Collective or Individual Sovereignty", OPEC Bulletin, vol.21,no.1, January 1996, p. 4.
[10] Vahan Zanoyan "The Relevant Framework for Understanding Global Crude Oil Markets", in Gulf Energy and the World: Challenges and Threats, (Abu Dhabi, 1979), a publication of The Emirates Center for Strategic Studies and Research, p. 44.

demand. Billions of dollars are invested in both upstream and downstream sectors of the oil industry to meet the more stringent requirements of environmental protection, especially those enacted by the developed.[11]

Emergence of Regional Trading Blocs The formation of regional trading blocs has led to the development of intra-regional energy ties. There were attempts by some regions to internalise energy supplies regardless of the cost. The European Energy Charter is intended to promote the development of former Soviet Union's energy industry as the mainstay of the European oil supplies. It is despite the enormous difficulties involved in it and the potential harm, which could arise from distorting the normal flow of investment.[12] This has distorted the working of the 'free market mechanism'.

Changing Energy Matrix The relative percentage share of different sources of energy has changed in the global energy matrix. Of the five main sources of commercial energy, oil has suffered the biggest loss, when we compare its share in 1995 from that of 1970. The share of oil in the global energy matrix declined by a fifth during this period from 48.5 percent in 1970 to 39.5 percent in 1995. Its closest competitor is the natural gas.

Investment Prospects The above features are responsible for increasing the uncertainties surrounding the oil market. There are uncertainties regarding the future demand for oil in an environment of oil price volatility, carbon tax on oil, futures market and investor's confidence in the oil industry. The state oil companies of producing countries mainly OPEC do not have

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[11] Subroto, Speeches and Statements, (Energy Policy Seminar, Sanderstolen, Norway, 4 February 1994), cited in OPEC Bulletin, vol.25, no.2 , February 1994, p. 6.
[12] Subroto, "Creating Opportunities for China and OPEC to Co-operate in the Global Markets", OPEC Bulletin, vol.30, no.4, April 1999, p. 4.

sufficient funds to plough back as investments in the case of low oil prices. Hence, the oil industry is on a run for the investment capital.

Demand Cycle There is a seasonal relationship between the demand for world petroleum products and crude oil production. In the second and the third quarters of the year (i.e. summer and spring) crude oil production exceeds demand. The inventories build up due to excess supply. The inventories are drawn down during the first and the fourth quarters (winters) when the demand exceeds the supply of crude oil. This cyclic pattern of demand exceeding supplies in the first and the fourth quarters and then supplies exceeding demand in the second and the third quarters, strengthens the oil prices during winters and weakens it during summers.

One can broadly infer that oil industry at present is characterised by high degree of uncertainties. Thus, the information to the market participants (sellers and buyers) is not perfect. Perfect knowledge of market conditions is an important assumption of competitive markets.[13] Further the proliferation of regional trading blocs has distorted the working of the 'free market mechanism'. Hence, the oil market seems to have certain imperfections to support the cartel of oil producers. This is further reinforced if one looks at the composition of the oil market and the pattern of trade.

(ii) Composition of The Market

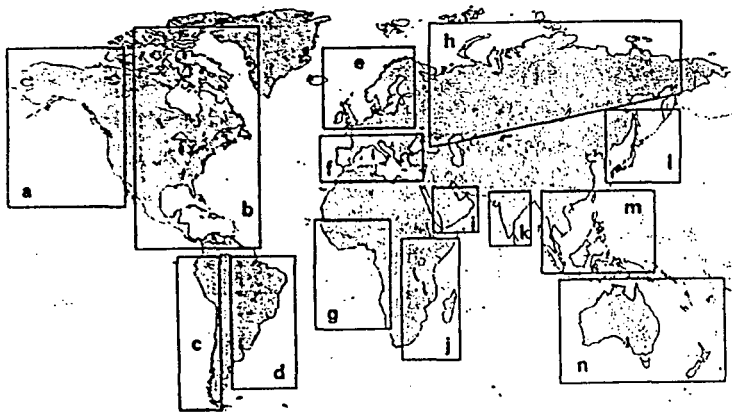
Market is a configuration of the buyers and the sellers. These buyers and sellers can be categorised both in geographic and economic paradigm. A realistic approach to gauge the effectiveness of OPEC decision on the oil

[13] A. koutsoyiannis, Modern Micro Economics, (London: Macmillion Press, 1975), p.155

market is to understand the distribution of sources of demand and supply of oil. Taking a host of considerations, including production pattern, tanker's route, crude oil quality, demand pattern, refinery types, geographical and geopolitical issues, it is possible to identify fourteen commercially viable regions.[14]

FIGURE 1.3

THE COMMERCIALLY RELEVANT REGIONS



The Regions

a Northeast Pacific	f Mediterranean	k South Asia
b Northwest Atlantic	g West Africa	l North Pacific
c Southeast Pacific	h CIS/Eastern Europe	m Southeast Asia
d Southwest Atlantic	i Gulf region	n Australasia
e Northwest Europe	j East Africa	

The crude oil flows from these regions constitute the supply of oil. The refinery types of these regions constitute the demands for oil. Crude oil is of different varieties (chemical composition) that are not perfect substitutes of each other. They vary from light sweet crude with low sulphur content to heavy sour crude with high sulphur content. The export streams of most of these geographical regions mentioned above have a dominant crude variety, which has maintained consistency over the years. About 75 percent of the Mediterranean export flows is of sweet light crude, over 85 percent of the

[14] Zanoyan, n.10, p. 29.

Gulf is of sour crude and almost 82 percent of the flows from the Northwest Europe is of sweet light crude.[15] The expected future change in the crude supply would have a pattern that would fit this regional break down.

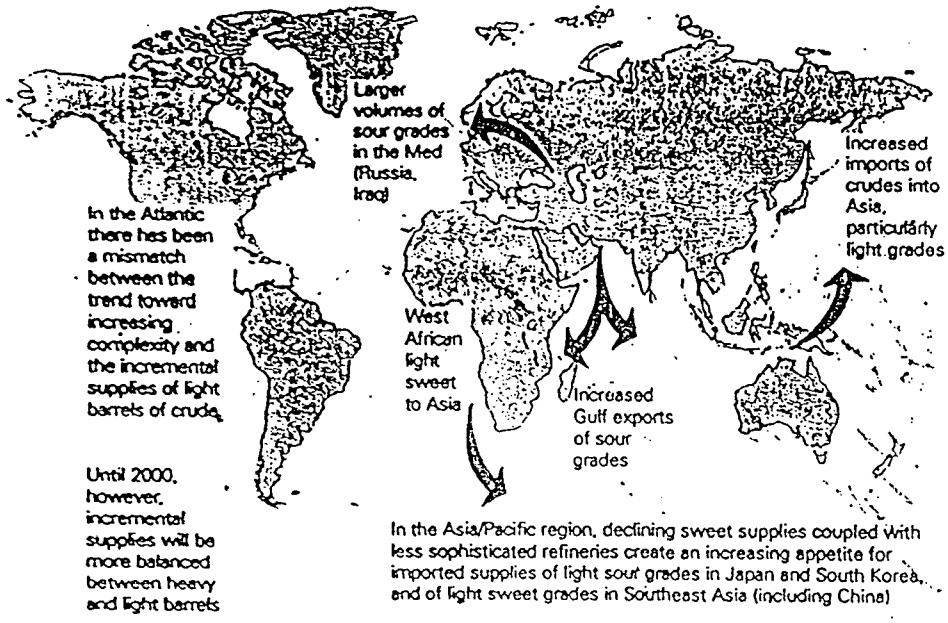
These regions also display different type of refineries adjusted to various chemical composition of crude oil. Therefore, they have a definite demand for different varieties of crude oil. The supply dynamics of a region are limited by the geographic attributes of the region whereas the demand dynamics are largely determined by the economic parameters. The market could also be categorised as the developed and the developing economies. The developed countries have more sophisticated refineries that can handle heavier and sourer crude than those in the developing countries. Therefore, U.S.A's west coast and North West Atlantic refineries can handle heavier and sourer crude than those in South Asia, West Africa. The North Pacific, developing countries have more de-sulphurisation capacity in their refineries, than upgrading capacity implying larger demand for light sour grade of crude oil.

The combination of the two patterns, i.e. supply of crude oil variety, determined by the export flows and the refinery type, set the direction of world trade.

[15] Ibid, pp. 22-23,

FIGURE 1.4

CHANGING PATTERNS IN CRUDE SUPPLY AND REFINERS' DEMAND FOR CRUDE: IMPLICATIONS FOR SWEET/SOUR DIFFERENTIALS



Any change in either of the two patterns alters the dynamics of world trade in crude oil. However, any dramatic change has so far not occurred. So a certain level of consistency in the pattern of trade is expected.

(iii) Pattern of Oil Trade Oil as a commodity responds to the signal of one global market. However, the actual route taken by a barrel of oil from the wells to the final consumer is determined by knife-edge differences in

transport costs as well as vagaries in viscosity, sulphur content and other factors that affect how crude oil is refined into useful products.[16]

The oil from Canada, Mexico and Venezuela is shipped mainly to the United States. Most of the Russian export goes to nearby Europe and the West Asian oil goes to all corners of the world, though mostly to Asia. Japan imports most of its oil from the Gulf. About 80 percent of crude oil imported by India is from the Gulf and its import dependence is likely to increase in future.[17] Australia is also becoming increasingly dependent on foreign oil.

The trade flow of oil has not undergone any dramatic change in its magnitude or direction (table 1.1). The composition of market (in terms of demand and supply sources of oil) has maintained consistency over the years. This suggests that a cartel is not likely to lose its leverage in the changed political and economic environment of the oil industry.

The only organisation involved in oil trade is the OPEC. The Organisation for Economic Co-operation and Development (OECD) countries have formed the International Energy Agency (IEA) in the aftermath of the oil crisis of 1973 but its function is invoked only in case of energy crisis and not in normal energy trade.

[16] David G. Victor and Nadejda M. Victor, "Axis of Oil?", Foreign Affairs, (New York), vol. 82, no. 2, March-April 2003, p. 51.
[17] K.R. Singh, Post-War Gulf: Implications for India, (New Delhi, Fine Arts Press, 1993), p. 130

TABLE 1.1

OIL IMPORTS FROM WEST ASIA

As a percentage of total imports			
Year	U.S.A Percentage	WESTERN EUROPE (Percentage)	JAPAN (Percentage)
1982	16.1	NA	60
1983	10.1	NA	60
1984	10.6	NA	61
1985	7.1	NA	59
1986	16.7	NA	58
1987	18.1	NA	60
1988	23.2	NA	58
1989	25.8	NA	63
1990	27.4	45	65
1991	27.7	41	64
1992	25.6	42	66
1993	23.3	47	69
1994	21.4	45	69
1995	19.8	44	70
1996	18.8	41	70
1997	19.1	44	75
1998	21.8	47	77
1999	24.8	43	74
2000	23.8	42	75

Source: Energy Information Administration: Persian Gulf Oil and Gas Exports Fact sheet online www.eia.doe.gov accessed on 22.5.2003

III. OPEC AS A CARTEL: NEW PREMISES

The review of earlier literature evaluating OPEC as a cartel revealed that they have rejected the cartel status of OPEC on the premise that it is not a dominant producer in terms of the market share. But oil is not like any other commodity where the market share alone reflects the leverage of producer in the market. It has a strategic dimension to it. Jimmy Carter, the former president of U.S.A, had described the national energy crisis as the "moral equivalent of war".[18] Retrospectively it has changed the destiny of nations.

The dominancy in the market of the strategic natural resources (especially oil) is determined by the capability of the producers to avert crisis (both of supply and demand). This is because this capacity generates a certain 'centripetal force' towards it in the market in times of crisis. All hopes are centred on that producer to deliver the market from the crisis. This capability is not available to all producers. This is because reserves are not evenly distributed. The costs of production vary at different places. Most importantly shortages could be mitigated in the short-term by only those producers, which have excess capacities. Further if the producer has a combination of low cost of production, huge reserves and excess capacity then its leverage in the market is greatly enhanced, in terms of its influence on the other producers. This is also true for OPEC as an oil producer.

The OPEC members have the unique combination of low cost of production, huge reserves and excess capacity (Tables 1.2 and 1.3).

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[18] Seth L. Tillman, The United States in the Middle East, (Bloomington: Indiana University Press, 1982), p. 77.

TABLE 1.2

OPEC COUNTRIES FACT FILE

Countries	Proven Oil Reserves (mbpd) (1January 2002)	Years of production at 2001 level (years)	Current Surplus Capacity[1] (mbpd) (May 2003)
Algeria	9.2	17.6	0
Indonesia	5	5	0
Iran	89.7	67.4	0
Kuwait	96.5	>100	0
Libya	29.5	29.5	0
Nigeria	24	24	0
Qatar	15.2	55.5	.150
Saudi Arabia[2]	261.8	85	1-1.5[2]
UAE	97.8	>100	.250
Venezuela	77.7	77.7	0
OPEC 10 Crude Oil Total	706.4	0	1.4-1.9[2]
Iraq[3]	112.5	>100	0
OPEC Crude Oil Total	818.8		

Notes

1. Maximum sustainable production capacity, defined as the maximum amount of production that: (1) could be brought online within a period of 30 days; and (2) sustained for at least 90 days.

2. The amount of Saudi Arabian spare capacity that can be brought online is shown as a range of between 1.0 and 1.5million bbl/d, because a short delay may be needed to achieve the higher level.

3. Iraq was not a party to recent OPEC agreements

Source: Adapted from IEA and Regional Surveys of the world (Middle East and North African Countries (MENA))

TABLE 1.3

RELATIVE COST OF PRODUCTION OF THE U.S.A. OIL COMPANIES

Regions	Cost $pb
Canada	5.75
Europe	4.25
Africa	2.6
Persian Gulf	2.1
Saudi Arabia	1-1.5
U.S.A	4.25

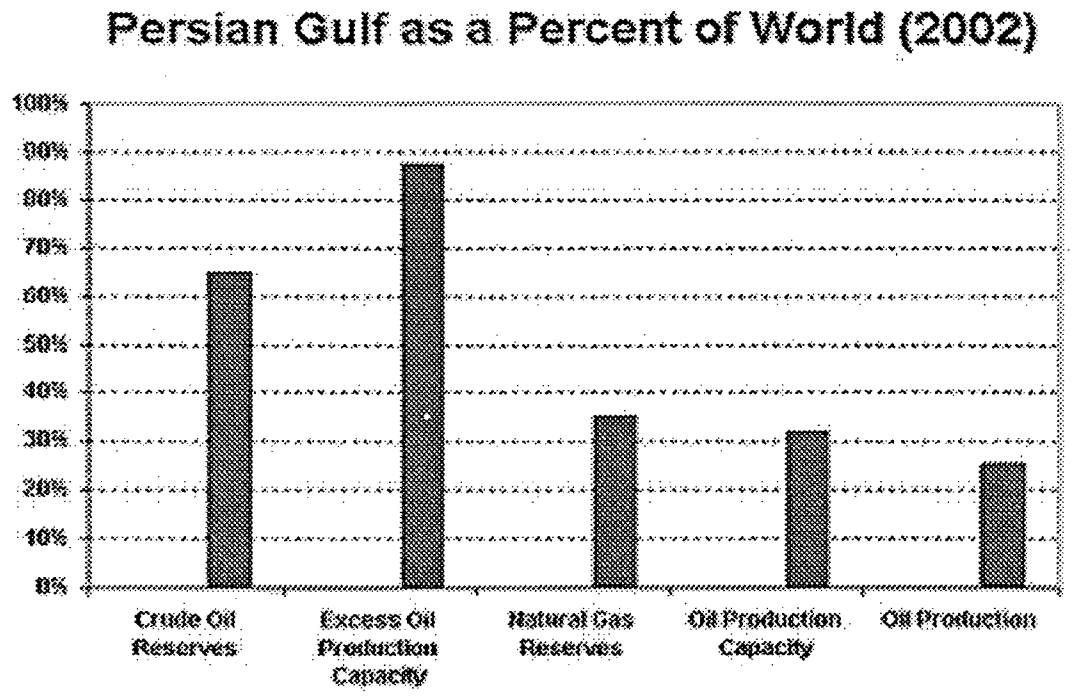
Source: adapted from IEA on line www.wtrg.com accessed on 12.2.2003

The relative importance of OPEC in the management of oil crisis can be gauged from graph 1.1. The picture of the Gulf could be considered as a close approximation of that of OPEC. This is because, with the exception of Bahrain, other Gulf oil producers are members of OPEC.

The picture clearly shows OPEC's ability to dominate the world oil market in a number of ways. It has the ability to make-up in the short run for supply disruptions from any quarter. Thus, it can prevent the oil price from going too high. At the same time it can increase price by cutting oil production. If the non-OPEC oil producers do not cooperate in defending a desired price level by decreasing their production then it has the ability to elicit forced compliance. This is possible by the virtue of Saudi Arabia, which has the weapon of excess capacity of oil production in addition to the comparative advantage of the lowest cost of production. It can force the oil producers to comply with the decision of production cuts else be out competed by the price war. Also it has the ability to deter the OPEC

members from cheating. It can do so by restricting the violator on the demand curve facing the cartel, which is less elastic i.e. DD in fig 1.2.

GRAPH 1.1



It could flood the market with more oil such that the unilateral price discounting by the cheating member does not increase the demand for its oil. The increase in demand for oil (due to lower price) then gets evenly distributed among the cartel members. The cheater as a result gets lower revenue due to lesser oil price and trivially increased demand. Further, it can nullify the effect of overproduction (by cheating) on the oil price by significantly cutting its oil production, thus maintaining the effectiveness of the cartel decisions.

Therefore, the cartel attributes of OPEC cannot be rejected on the grounds of lack of dominance in the market due to the minority market share.

Cartel dominance is based on its ability to influence price and to compel the non-cartel members to fall in line with the cartel's decision. OPEC can achieve this by its ability to act as a swing producer (due to its excess capacity), immense oil reserves and low cost of production.

Even though OPEC production market share is roughly 40 percent yet this could significantly influence the oil market as it belongs to a single entity. This in effect would mean a share of a single producer. No other oil producer outside OPEC has a comparable share. Thus OPEC may have a minority market share but it is a strategic one.

The importance of OPEC is derived from its share in the export rather than production.[19] Of the world's top net exporters, OPEC countries are strongly represented. Of the twelve nations exporting more than one mbpd oil in 2002, nine were OPEC members.[20] It is here the OPEC still can hold the world to ransom. Even though there are more oil producers in 1990s yet most of them are still importers of the same i.e. U.S.A., Norway, China,

The oil market in 1990s still has imperfections in it and hence it can support the cartels. OPEC has the potential of a cartel. However, to have the potential of a cartel is different from the ability to effectively and wisely deploy it. The OPEC members are disproportionately dependent on the oil revenues and have huge budgetary obligations. These have often prevented the OPEC members from effectively using their cartel potential.

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[19] Ismail-Sabri Abdullah et al, Images of the Arab Future (London: Frances Printer (publishers), 1983), p. 230, translated from Arabic by Maissa Taldat

[20] IEA, Country Analysis Briefs online www.eia.doe.gov.com accessed on 23.4.2003

Conclusion A cartel is a group of sellers operating together to regulate the overall supply in the market in order to keep price above the competitive levels. A cartel is known to carry the seeds of its own destruction. This is because high prices ushers in more competitive supplies in the market. Further it undermines the cartel by reducing demand. When the market for the cartel shrinks, problems of maintaining collusion grows. The cartel ultimately disintegrates in the long run as the market becomes competitive.

The oil market in which OPEC, at present, seeks to exercise its influence has greatly changed from that of 1970s and 1980s. The oil market in the 1990s has altered significantly with the non-OPEC oil producers as the marginal suppliers, the operation of the futures market, carbon taxes, the emergence of regional trading blocs and changing energy matrix. However, the rising uncertainties surrounding the market seem to impart certain imperfections in it, which makes it far from being competitive. Further the proliferation of regional trading blocs has distorted the working of the 'free market mechanism'. Thus the oil market still seems to support cartels in general and OPEC in particular. This inference is endorsed by the composition of the oil market (sources of demand and supply) and the pattern of trade over the years, which has exhibited no dramatic change to the detriment of OPEC.

A review of literature suggests that OPEC is at present rejected as a cartel. This conclusion is made on the criterion that OPEC does not have the market share, which is required for the cartel dominance. However, for a strategic natural resource like oil with inelastic demand and supply in the short run the dominance cannot be evaluated on the basis of market share only. The dominance in the market of the strategic natural resources

(especially oil) is determined by the capability of the producers to avert crisis (both of supply and demand). The supply crisis can only be mitigated in the short run if the producer has excess production capacity. In case of demand crisis, the producer cutting its production as well as compelling other producers to comply could only manage it.

OPEC members have this capability owing to the unique combination of low costs of production, huge reserves and excess capacities. Further this ability is concentrated in Saudi Arabia. It enables Saudi Arabia to steer the OPEC in its way in case of deadlocks among the members. This makes the decision-making process easier and re-enforces cartel cohesion.

The OPEC has a minority market share of roughly 40 percent. Yet, it could have a significant influence on the oil market as this share belongs to a single entity i.e. one producer. Therefore OPEC may have a minority market share but it is a strategic one as no other oil producer outside OPEC has a comparable share. OPEC is more dominating as an exporter rather than as a producer.

OPEC derives its cartel strength due to its immense oil reserves, excess capacities, lowest costs of production and dominant export capabilities. However, OPEC members are disproportionately dependent on the oil revenues and have huge budgetary obligations. These have often prevented the OPEC members from effectively and wisely deploying their cartel potential.

CHAPTER 2

OPEC QUOTA POLICY: AN OVERVIEW

One of the distinguishing features of a cartel is its ability to regulate the supply of a commodity in the market in order to influence its price. The cartel typically embarks on a production regulation programme to achieve that objective. This also helps the cartel to keep out competition in the market (that drives the price down) by embarking on a market sharing arrangement. This chapter seeks to evaluate the effectiveness of the OPEC quota policy in meeting this objective of OPEC as a cartel.

(I) QUOTA POLICY: EVOLUTION

The Resolution of the OPEC Preamble states the following objective;

Resolution 1.1.3 (1960)

"That members shall study and formulate a system to ensure the stabilisation of prices, by, among other means, the regulation of production with due regard to the interests of the producing and of the consuming nations and to the necessity of securing a steady income to the producing countries, and efficient, economic, and regular supply of this source of energy to consuming nations, and a fair return on their capital to those investing in the petroleum industry;" [1]

[1] "Resolutions of the First OPEC Conference", Baghdad, 10-14 September 1960, cited in Barry Morgen eds., OPEC: Official Resolutions and Press Releases,(Vienna: OPEC,1990), p.1

Under the name of 'production programming' the quota policy was mentioned for the first time in the OPEC Resolution 1.1.3 of the conference that set up the organisation in September 1960. Perez Alfanzo, the Venezuelan oil minister at that time, was instrumental in the making of the organisation.

The five signatories, who committed themselves to such a system, then kept the production regulation programme on the shelf for nearly twenty years until it became operational in March 1982. Initially, the governments of the Gulf region were competing for higher export volumes of their low cost oil. Saudi Arabia had opposed the idea implacably for twenty years.

OPEC policy was largely grappling with price of crude oil in the 1970s. The price goal itself is a part of a wider objective.[2] This is to solve the long-term development problems.

"That the members are implementing much needed development programmes to be financed mainly from income derived from their petroleum exports " [3]

Oil price is central to the national interests of OPEC member countries. In order to unify oil policies for the member nations OPEC tried to evolve a coherent price structure for its basket of crude oil .The idea was to evolve a price structure which made allowances for differences in transport

[2] Ali M. Jaidah, An Appraisal of OPEC Oil Policies, (London: Longman Press, 1983), p. 6
[3] Mana Saeed Al Otaiba, OPEC and the Petroleum Industry, (London: Croom Helm, 1975), p. 57

costs and quality of crude oil in such way that the different varieties of crude oil have prices equal to their relative values as felt by the refiners at the point of use.[4] With such a price structure there is no substitution between the individual varieties of crude oil in case of short-term shift in demand for the OPEC oil. Thus no crude oil variety would be adversely affected.

Market forces have a significant effect on the behaviour of price differentials (but not on that of the marker crude oil). This is because oil has no immediate 'substitute' in its present use in the short term. There is no economic cap on the price of oil in the case of shortage. Different producers can act autonomously and charge different prices for similar variety. In spite of that, they can sell all their supplies.

(i) The Market Conditions

The market was in a similar chaos during 1979-1980. Any attempt to control the price structure inevitably led to the spiralling up of oil prices. Every member of the OPEC priced its crude oil at the level it could get from the market. The market was in such a state that there were buyers who were ready to pay more. The prices of most of the crude oil tripled between January 1979 and January 1981.[5] Not only there was chaos in the market but also within the OPEC. The OPEC members' crude oil prices, royalties, income tax and participation rates differed so much that it looked as if there were more than one OPEC[6]. The Gulf countries, especially Saudi Arabia

[4] Jaidah, n.2 , p.97
[5] Shukri Ghanem, OPEC: The Rise and Fall of an Exclusive Club, (London, Kegan Paul International Limited, 1986), p.160
[6] Ibid p.161

and the United Arab Emirates (U.A.E), used to meet and decide on the price participation rates or the tax system. Then they attended the OPEC conferences with virtual *fait accompli* .The African members of OPEC, mainly Algeria and Libya, used to coordinate their policies and were more aggressive towards the Gulf countries' decisions. They usually announced higher prices, higher rates of royalties and income taxes, especially when the oil market was the sellers' market. The illogical price structure could be considered as the manifestation of the differences and the division among the OPEC members.

(ii) OPEC's Attempt to Control Oil Prices

The 55th OPEC Conference was held in Caracas on 17-19 December, 1979 to decide on price unification. The Caracas Meeting confirmed OPEC's inability to deal with prices and the oil market in a rational manner. OPEC members departed with a price spread of $24 pb for some of the Gulf countries to $ 30 pb for the African group.[7] Saudi Arabia failed in its attempt to unify the oil prices. On first January, 1980 Saudi Arabia, in an attempt to narrow the price differential, increased the price of its oil by $2 pb to cost it $28 for the same. At the same time the, other member countries also increased their prices to maintain the gap. Later, in May when Saudi Arabia made a similar increase, the others again followed suit. The situation was similar in June, when the OPEC members met in Algeria.

[7] Ian Skeet, OPEC: Twenty Five Years of Pricing and Politics, (Cambridge: Cambridge University Press, 1988), p.169

A fundamental change had taken place by the end of 1979. It was the dramatic fall in oil demand. However, the oil sellers did not perceive it. Retrospectively, the evidences were there.[8] There was increase in oil stocks, which were 500 million barrels more than expected. The spot prices were falling and that of the Arabian Light decreased from around $38 pb in January 1980 to $30 pb in September in the same year. The high price producers like Iran and Kuwait could not renew their oil contracts and their production fell in September 1980 from the levels in 1979. It was too late when OPEC realised that tides had changed.

The Algerian Conference on 9 June, 1980 took a hasty step towards price unification. The loose ends left in the agreement provided scope for members to do what they wanted. The following OPEC action was taken in Vienna on 17 September 1980, where the consultation meeting turned into an extra-ordinary one. It was decided that the marker crude would be set at $30 pb and all other prices would freeze at their exiting levels. The $30 pb was the base point from which the future long-term strategy was supposed to take off. Also this price of crude oil was a symbolic victory for Saudi Arabia over those member countries, which wanted $32 pb as the price of marker crude oil. Nevertheless, later Saudi Arabia had to concede to $32 pb when Iraq-Iran war started. The African producers wanted a maximum of $41 pb. The price differentials between the Gulf and the African crude oil remained on agreed target. The price crisis of 1978-1979 was over but loose ends remained.

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[8] Ibid, p.169

However by the time, OPEC members agreed on price differential the market had fundamentally changed. The price management was no longer the issue. When the Bali Conference (December 1980) took place, oil demand had fallen. As the price began to fall in response to the declining demand, the only way for OPEC to defend oil price was to limit its oil production.[9]

In the 60th conference in Geneva on 25 May, 1981 all members except Saudi Arabia, Iraq and Iran pledged a production cut of 10 percent with effect from 1st June 1981.This was the first ineffective step towards a cartel's quota system. The production cuts bore no relation to the individual country's level of production or export. The hardest effect was on the African oil producers, whose prices were relatively and absolutely the highest. Nigeria was the first, which violated and offered concessions to the oil companies to boost its exports. Nigeria duly reduced its price by $4 pb and others followed suit with discounts and special barter deals. Saudi Arabia agreed to a reduction of its 9.8 million barrels per day (mbpd) production ceiling to 9 mbpd.

(iii) Political Background

The perceptions and policies of OPEC, especially Saudi Arabia are influenced by the political developments in and out of these countries. The Iranian Revolution and the Iran-Iraq war had exploded the oil market equilibrium in 1978-79. The political happenings in the rest of the world

[9] Roger Owen and Sevket Pamuk, A History of Middle East Economies in the Twentieth Century, (London: I.B.Tauris, 1998), p.228

were shaping the proceedings of the OPEC Conferences and the attitudes of different members. The Bali Meeting on December 1980 took place during the U.S.A.'s presidential elections. Ronald Reagan was to take over as the next president on January 1981. He had, in principle agreed to the sale of F-15 bomb rack equipments and five Airborne Early Warning and Control System (AWACs) to Saudi Arabia (the deal was already under negotiation with the former president Jimmy Carter). Saudi Arabia took a moderate stand on oil price to appease the Americans. The May, 1981 Conference took place at the height of Israel-Syria conflicts. Saudi Arabia had been active in preventing the outbreak of hostility by devising a Fahd Plan (aired by prince Fahd). The resulting political euphoria made it aggressive in the following meetings, where it refused to accept $34 pb as the price of the marker crude oil. The October 1981 Conference took place in the atmosphere of uncertainties in the aftermath of the assassination of Egyptian President Anwar Sadat .It might have forced the OPEC members to take a united stand. However, the political developments were only secondary to the market motivations.

By the end of 1981 the oil market was again in disarray. The year 1982 brought with it weaker oil demand, competitive price cuts and threat of Nigeria breaking ranks with OPEC (due to depressed oil sales).

The turning point came in March 1982 when the OPEC Conference officially enforced the quota system. It took a firm decision to keep $34 pb as the price of the marker crude oil. It agreed on a production ceiling of 18 mbpd, to be produced by the members on the basis of respective quotas. It

reduced the price differentials to the pre-war levels. It also set up a Ministerial Monitoring Committee to 'monitor the market situation and recommend remedial measures'. After twenty-two years of existence, OPEC had finally turned itself into the cartel that Perez Alfanzo had originally planned. [10] But, many critics had mistakenly claimed OPEC as a cartel even before 1982. The entire span of the quota policy could be analysed in three phases.

(II) QUOTA POLICY: DECISIONS AND THEIR IMPACT

(i) The First Phase (1982 –1986): Targeting Oil Price

The first quota agreement was informally finalised in Doha in the meeting of the Energy Conference and the Organisation of the Arab Petroleum Exporting Countries (OAPEC). The March 1982 OPEC Conference formally adopted the quota policy. It faced the new and unpleasant realities of low oil demand, declining market share and stiff competition from non-OPEC producers from the Atlantic region, with desperate but remarkable firmness.[11]

The striking feature of the conference was the allocation of production quotas among the member countries. Saudi Arabia agreed that the total OPEC production should be restricted and went grudgingly along the quota system. Iran did not agree to the production quota allocated to it. It was given a quota of 2.1 mbpd at parity with Iraq. Iraq also accepted it on

[10] Skeet, n.7, p.184
[11] Ibid, p. 185

the condition that it would adhere to this quota till it was constrained by the war.

The first quota agreement gave temporary support to the oil market. Most significant for OPEC that it improved Nigeria's perception of OPEC credibility. Nevertheless, the agreement could not survive in the following OPEC conference, which had Iran and Saudi Arabia in bitter opposition to each other. The others also fought for higher quotas or price differentials. Ironically, it was Venezuela, the initial proponent of the quota policy that brought an end to the agreement and officially renounced its quota.

Another quota agreement took place in March 1983. The official price for the marker crude oil was set at $34 pb.[12] The price differentials were to be maintained at the existing levels with the exception of Nigeria. Nigerian crude oil was priced $1 pb more than the marker crude. Saudi Arabia was, for the first time explicit about its role as a swing producer. The total OPEC production ceiling was agreed to be at 16 mbpd. It was half of OPEC's output in 1979. The agreement also elicited a promise of export restrain and price alignment from Mexico, a non-OPEC producer. It also secured conciliatory words from Norway but little price support in the Atlantic market.

The member governments engaged in various forms of price discounting (open or hidden) and counter deals. The years of 1984 and 1985 saw competition among OPEC members for increasing the sales,

[12]Press Release No. 2-83 of Sixty-Seventh (Extraordinary) Meeting of the Conference, London, 14 March, 1983, cited in Morgen eds., n.1, p. 208

sometimes beyond the agreed quota levels.[13] Due to this, Saudi Arabia abandoned its role as a swing producer and followed netback pricing in 1985.[14] Consequently, the December 1985 Geneva Conference bravely announced that the rest of the members too would "secure and defend a fair share for OPEC in the world oil market consistent with necessary income for Member countries' development".[15] OPEC declared that its objective to defend its market share would take precedence over that of the price maintenance.[16]

There was great unanimity in decision. Even the 'price hawks' like Iran, Algeria and Libya, which had often stayed away from the mainstream of OPEC decisions in the past, also agreed. But many shivered at the prospects of the price war that would ensue. In fact Iran and Algeria argued throughout the conference and subsequent press release that the defence of both market share and price were feasible and possible. The members in general were more comfortable with the defence of market share strategy as they were not ready to cut production of a single barrel of oil from their existing quota levels. On the contrary, they were lobbying for an increase in the same. The second quota agreement with an objective to control prices thus came to an end. The first phase of the OPEC quota policy where it was used as the instrument of price control also ended.

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[13] Homa Katouzian, "Oil and the Economic Development in the Middle East", in George Sabagh ed., The Modern Economic and Social History of the Middle East in its World Context, (New York : Cambridge University Press ,1989), p.28

[14] Netback Pricing involves the selling of the same crude to different customers at different free on board (fob) prices, each of them unknown even to the buyers and sellers at the time of bargain.

[15] Press Release No. 8/85 of –Seventy-Sixth Meeting of the Conference, Geneva, 9 December 1985, cited in Morgen eds., n.1, p. 236.

[16] Ian Seymour, "OPEC's Policy Switch Carriers Momentous Implication for the Oil Market", Middle East Economic Survey (MEES) (Cyprus), vol.29, no. 10, 16 December 1985, p. A-2.

(ii) The Second Phase (1986-1990): Defending Market Share

The agreement to pursue market share goal later on faced hurdles due to the diverse opinions as to what the desired market share was. In fact, the opinion that were expressed by the OPEC ministers after the conference varied from "well above 16 mbpd" (Sheikh Yamani of Saudi Arabia); "in between 16 mbpd and 18 mbpd" (Hernandez Grisanti of Venezuela); "more than 18 mbpd " (Qasim Ahmed Taqi of Iraq) and "a minimum of 20 mbpd" (Tam David-West of Nigeria).[17] Now the quota policy was used as a market sharing arrangement. OPEC had earlier tried to elicit the cooperation of non-OPEC oil producers to defend the oil price but failed.

OPEC, especially Saudi Arabia now warned the non-OPEC oil producers, mainly the United Kingdom (UK), of the price war in the event of non-cooperation. The warning fell on deaf ears. The feared price crash arrived in January 1986, with the Brent crude oil trading below $18 pb.[18] With a notable exception of the two protagonists (Saudi Arabia and UK) on opposites sides, the other oil producers were losing their nerves. Iran, Libya and Algeria, which were not so keen with the goal of the defence of the market share, publicly renounced it. They advocated production cuts and that OPEC alone should make it to steady the market. Iran halted spot sales of its crude oil. Iran, Algeria and Libya were stepping up political campaign to pressurise Saudi Arabia to cut its oil production to restore prices. The moderates were Venezuela and Iraq, which accepted and appreciated the logic of market share strategy but advocated some kind of a damage

[17] Ibid, p.A-5
[18] "No End in Sight To Market Bloodbaths", MEES, vol. 29, no. 16, 17 January 1986, p. A-2.

limitation due to the resulting price war. On the other side were Saudi Arabia, Kuwait and U.A.E., which were best equipped to withstand the ravages of the price war, in terms of financial resources, lower cost of production and larger production capacities. They advocated market share confrontation as the only viable alternative to discipline the oil exporters. This was clearly the key group, which alone had the oil muscles to orchestrate and nail down the new oil production contracts among the oil exporters.[19]

Saudi Arabia and UK were soon at the negotiating table. U.K. refused to cooperate. If it cooperated then others would comply easily. Saudi Arabia reduced oil production in January 1986 as an exercise of restrain. Venezuela abandoned the official price for its crude oil sales. It gave an official instruction to the national oil company Petroleos De Venezuela on 9 February, 1986. It authorised the latter to have "the commercial flexibility necessary to adapt itself, when it is in the interest of the country, to the new dynamics of the market characterised by changing prices and competition among producers".[20] Yet, under the pressure of competition from other supply sources, particularly the substantial volumes of Saudi netback crude oil in the U.S.A. market, Venezuelan export was reported to have fallen. Indonesia also made it clear that it would abandon both OPEC official output and its production quota of 1.18 mbpd to increase its oil supplies in order to make up for the fall in oil price.[21]

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[19] "Crunch Time for Oil", MEES, vol.29, no. 18, 10 February 1986, p. A-2
[20] "Venezuela Abandons Official Prices", MEES, vol. 29, no. 19, 17 February 1986, p. A-3
[21] "Indonesia to Maximise Oil Output", MEES, vol. 29, no. 21, 3 March 1986, p. A-6

Nevertheless, the formation of African Hydrocarbon Association by four OPEC members –Algeria, Nigeria, Libya and Gabon along with other non- OPEC oil producers should not be seen as their disillusionment with OPEC in adverse market conditions. The African OPEC members affirmed that the organisation was not intended to " duplicate or be in conflict to any organisation to which present members belong".

The deteriorating situation of the oil market soon brought five non-OPEC oil producers – Mexico, Egypt, Oman, Malaysia and Angola to sign a Memorandum of Understanding (MOU) with OPEC to restore and defend the OPEC official price of $28 pb and to stabilise the oil market. At the same time Iraq, Nigeria, U.A.E and Ecuador were lobbying for an increase in their quotas.

The Geneva Conference on March, 1986 failed to divide the total OPEC production 14 mbpd among the members. By April, 1986 the U.S.A.'s oil industry was reeling under the pressure of low oil price. It was not long after President Reagan had boasted that his free market policies had "brought OPEC to its knees". He was believed to have cajoled U.K not to cooperate with OPEC to defend the oil price. The vital interests of the U.S.A. in the energy related domestic industries and financial institutions were damaged. The bankruptcy of Mexico, Venezuela, Nigeria, Indonesia (due to low oil price) also damaged U.S.A.'s strategic interests.

Deliberations over quota decision and OPEC production ceiling

continued till April 1986. In the Geneva Conference of 21 April, 1986, ten OPEC members (excluding Iran, Algeria, and Libya) took a firm decision to follow up and implement the "defence of the fair market share".[22] This carried considerable significance both for OPEC and the oil market. It removed two obstacles that had a paralysing effect on OPEC decision-making process. First, the small size of the market was making individual quota distribution difficult, as the quota levels were unacceptable to the members. As a result, repeated efforts by OPEC to agree upon quota divisions of unrealistically low production ceiling targets of 14,14.5 or 16, mdpd proved futile. Quota division in case of larger market share would be easy and acceptable. The second was the over-riding of the quasi veto power of the tripartite alliance—Iran, Algeria and Libya. The majority of OPEC could now prevail.

Among the non-OPEC oil producers, except U.K., which still remained intractable as ever, others had shown the will to cooperate in the market sharing arrangement. The precedent of OPEC taking the majority way was also followed in the subsequent Brioni Conference in July 1986. Even though individual quota levels were not decided yet there was an agreement to control oil supplies.

However in July, the production was running well over 19.5 mbpd and all members were producing in excess of their quotas. As a consequence, Saudi Arabia abandoned its commitment to adhere to its self-imposed quota

[22] OPEC Majority Decide to Go Their Own Way", MEES, vol. 29, no. 29, 28 April 1986, p.A-1.

of 24.3 mbpd and also discarded OPEC ceiling of 16 mbpd.[23] The oil price had dipped as low as $10pb. According to the Paris based Market Monitoring Bulletin (MMB); the non-OPEC oil production had declined from 25.32 mbpd in the first quarter of 1986 to 24.84 mbpd in the second, of the same year. On the contrary, the OPEC production had topped in July 1986 at 20 mbpd. The members had secured a larger market share, which they aimed for.

However, the market conditions with regard to price turned from bad to worse due to the price war. The price war affected some OPEC members more than the others. Further increase in market share did not compensate the loss in revenue due to the low oil price. Therefore, disagreements with allocation of individual quota continued unabated.

OPEC conferences are sometimes full of surprises as their outcomes are contrary to the general predictions. They come up with firm and coherent decisions even when there is crisis and conflict within the organisation. The Geneva Conference on 5 August, 1986 was one of them. OPEC members (except Iraq) agreed to temporarily return to the discarded November 1984 quotas. Iraq could produce whatever it wished. For the other members, the total production was decided to be 14.8 mbpd. High-level marketing officials stationed at Vienna, during the period concerned, would monitor the oil production of individual members. Any confirmed

[23] "Saudi Arabia Abandons Commitment to Previous OPEC Production Quota", MEES, vol. 29, no. 41, 21 July 1986, p.A1

quota violation of a member would relieve the others of their quota obligations. Yet, behind the façade of cease-fire, the same basic rift over future strategy (to target price or market share) remained a potent threat as ever. The market responded positively to Geneva Conference and the oil price firmed up to $14 pb from $10 pb. There were reports of some overproduction by U.A.E, Venezuela and Libya.

In December 1986, a new OPEC accord set oil price at $18 pb. Saudi Arabia again returned to fixed pricing system. From 1986 to 1990, oil price drifted upwards. With less U.S.A.'s oil production, OPEC gained back the market share it had earlier lost. Even though the world oil demand had declined, OPEC's influence on the oil market increased (table 2.1). The most striking feature of the crisis and turmoil of 1980s was the survival of OPEC. The scenario was "fit for the collapse of OPEC so frequently described by M.A. Addelman".[24] He was a noted oil analyst. Many groups then became interested in OPEC's survival.[25]

[24] Mohammed E.Ahrari, OPEC: The Failing Giant,(Kentucky: University Press,1986), p.161
[25] Alfred A. Marcus, Controversial Issues in Energy Policy, (New Delhi: Saga Publications, 1992), Controversial Issues in Public Policy, vol.2, p. 70

TABLE 2.1

PRICE AND MARKET SHARE OF OPEC

S. No.	Year	Oil Prices $pb	Percentage Change	OPEC Target Price $pb	OPEC Trade Market Share (percentage)	OPEC Production Share (percentage)
1	1980	36.14	NA	NA	78.8	44.9
2	1981	34.22	-5.30	34	74.2	39.5
3	1982	31.78	-7.12	29	67.5	33.8
4	1983	28.79	-9.43	29	63.3	32.3
5	1984	28.06	-2.53	28.5	62.1	32.3
6	1985	27.53	-1.87	NA	58.3	29.7
7	1986	27.35	-0.67	18	61.1	32.3
8	1987	17.23	-37	18	58.5	30.8
9	1988	13.40	-22.23	18	61.3	33.4
10	1989	16.21	20.97	NA	65.5	36
11	1990	20.82	28.44	NA	66.9	38
12	1991	17.42	-16.28	NA	68.5	38.5
13	1992	17.94	2.93	NA	68.2	40.1
14	1993	15.68	-12.60	NA	67.4	41.3
15	1994	15.39	-1.85	NA	65.5	41.1
16	1995	17.48	13.58	NA	64.5	41.1

Source: Adapted from OPEC and MEES

(iii) Phase 3 (1990 –1997): A Mix Bag

The Iraq-Kuwait dispute in 1990 again unravelled OPEC. Incidentally, one of the reasons as alleged by Iraq for its invasion of Kuwait was the quota violation by the latter. There were other political reasons as well.

The Gulf war led to the temporary suspension of production quota.

The disruption of Iraqi and Kuwaiti oil supplies pushed up oil price to $40 pb. But it soon declined as Saudi Arabia, UAE and Venezuela boosted their production to make up for the shortfall. After the Gulf war, members again worked out the quota allocations. On 15 February, 1992 individual members were allocated quotas. Saudi Arabia and Kuwait rejected their allocated quotas and insisted on a production level of 8 mbpd and 1.18 mbpd respectively. Iran, Venezuela and Saudi Arabia grossly violated their production quotas. The average price of oil was about $19 pb in 1992. Algeria and Iran gave a renewed call for the OPEC production cuts due to the weakening of oil price by the end of 1992. Despite the apparent irreconcilable positions taken by some members, OPEC agreed on a credible production programme for the first quarter of 1993, in the Vienna Conference on 25 November, 1992.

The Vienna deal may not be perfect according to the experts, but it demonstrated OPEC's ability to restore the quota framework and improve production discipline when it became necessary.[26] The members reasonably endorsed it. Still the oil price fell by $1 pb. OPEC had produced by nearly 7,00,000 bpd more than its production ceiling of 24.5 mbpd. The following Vienna Conference saw another tug of war between Kuwait and the rest of the members. Nonetheless, the decision was reached and price of oil went up by $1 pb to $19 pb. Kuwait, which had undergone intense pain due to lower quotas, complained about quota violations and the connivance of the Production Monitoring Committee.

[26] "OPEC Gets Back on Quota Track", MEES, vol. 36, no. 9, 30 November 1992, p.A-4.

In June 1993, Kuwait and Iraq temporarily opted out of the quota policy. The oil price fell to $16 pb in July 1993.There was greater degree of violations. By August 1993, OPEC had reached another critical point in its thirty-three years old history. OPEC revenue had fallen by $8 billions in 1993 from that in 1992. Oil price was at a three-year low level. Algeria proposed setting aside of the production agreement in favour of a revenue sharing agreement. [27] The Geneva Conference on 25 September, 1998 concentrated the mind of the members on prices rather than volume due to the drop in oil price to an unacceptable level of $15 pb. The price dropped further to $13.69 pb in November, 1993. For the first time in the history of OPEC, the oil production managed to stay within its official limits.[28] Most of the reduction was attributed to Iran, which had produced below its quota. Better compliance also continued in January and consequently price moved up by $1 pb.

In April 1994, OPEC again reaffirmed its strategy to preserve its market share. This was the reflection of the persisting pre-occupation of Saudi Arabia, U.A.E. and Kuwait with volumes. For this reason Saudi Arabia once again came under scathing attack by Iran, which advocated a cut back of 1.4 mbpd in OPEC production ceiling of 24.52 mbpd. Besides, being adversely affected by low oil price, Iran no longer had the capacity to compensate the loss in revenue by increasing its production volume.

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[27] "Ajit-Laoussine Urges OPEC to Scrap Market Share Policy in Favour of Revenue Strategy", MEES, vol.36, no.51, 20 September 1993, p.A-2.
[28] "OPEC Keeps within Quota Target for November", MEES, vol.37, no.11, 13 December 1993, p. A-2

OPEC was indeed in a crisis. It ran deep as described by Sheikh Yamani as a "fault line that runs right through the Organisation" between the price seekers and the volume chasers. However, subsequent conference witnessed greater unity to freeze existing quota levels. The oil price pushed up to $ 17 pb by June 1994.

The Bali Conference in November, 1994 again accorded priority to the price objective and settled a one-year quota agreement. The agreement received quick acceptance by all, including Kuwait, which had reservations about the period. The year ended with the withdrawal of Gabon from OPEC membership. It, like Ecuador (which left OPEC in 1992) cited financial constraints to meet its budgetary obligations towards OPEC.[29]Quota limitations to their oil production may also be a significant cause for their departure from OPEC. The main trouble for the oil price in 1993 and 1994 had been the increase in non-OPEC oil production especially from the North Sea. Through out 1995 the OPEC members were giving vent to their frustration over increase in the non-OPEC oil supplies at their expense. According to International Energy Agency (IEA) non-OPEC supplies increased from 43.1 mbpd in 1992 to 46.3 mbpd in 1996. Weak oil demand and increasing supplies in the market forced OPEC to continue with the existing quotas in 1996.

However, in November 1997, OPEC for the first time in four years officially increased its production ceiling. It was increased by 10 percent to

[29] "Gabon Leaves OPEC: Membership Reduced to 11", MEES, vol.38, no. 15, 9 January 1995, p. A-1

reach 27.5 mbpd for the first half of 1998.This spelt disaster for the oil price, which was already affected by the fall in demand due to the Asian Crisis. OPEC along with some non-OPEC oil producers made two production cuts to stem the price fall. One was in March 1998 and the other was in June 1998. The two production cuts took out nearly 3.1mbpd of oil from the market. Still the oil price dipped to a low of $10 pb in December 1998.

The Vienna Conference on 26 March, 1999 did what the Geneva Conference in August 1986; the Bali Conference in November 1994 had done before. It demonstrated the cartel strength of OPEC in influencing the oil market in deep crisis. It agreed to a production cut of 2.1 mbpd, (in addition to 3.1 mbpd) thus taking out about 5.1 mbpd of oil from the market. Consequently, oil price trebled to reach $30 pb in December 1999 and increased to $35 pb in September 2000. The later years saw pre-occupation of OPEC with the oil price, as the budgetary compulsions of the member countries became more pressing.

In the third phase, OPEC frequently changed its objective and had used quota policy accordingly. Nevertheless, it managed to influence the oil market as a cartel on two occasions, namely the oil crises of 1993 and 1999.

Saudi Arabia as a Swing Producer

The role of Saudi Arabia needs to be separately discussed owing to its unique role as a swing producer. For some years, it refused to accept any numerical quota given to it. In practice, it set its own production ceiling,

which was close to the difference between the total OPEC ceiling and the aggregate of other members' quotas. Thus it implicitly accepted the role of the swing producer, which it was reluctant to accept explicitly. During the second quota agreement on March 1983, it for once, accepted the role of the swing producer to make up for the market requirements. Saudi Arabia soon got tired of quota indiscipline of other members and ended its role of the swing producer by opting for a formal quota of 4.35 mbpd export in October 1984.[30] In fact, it continued as a swing producer till September, 1985 due to its strict adherence to the official prices. A few months later, while experimenting with netback pricing it torpedoed that particular version of the quota system. The aim was to regain its eroded market share. This had significance of the termination of OPEC's role as the swing producer in the world oil market.

The identity of the prime seller mattered as much as its sales. When Saudi Arabia abandoned its role as the swing producer, it also made sure that the price of its crude oil could no longer be taken as OPEC's marker as it implied a similar role.[31]Saudi Arabia temporarily dispensed with any official price for its crude. Later, King Fahd ended the experiment and accepted a Saudi quota but rejected any swing producer role.

Saudi Arabia's oil policy had been to secure and defend its market share. It had maintained oil production close to its average quota of 8 mbpd.

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[30] J.E.Hartshorn, Oil Trade: Politics and Prospects, (Cambridge: University Press, 1993), p.178

[31] J.E.Hartshorn, "Netbacks and the Price Collapse", MEES, vol.29, no. 23, 17 March 1986, p.D1

It had often overproduced to discipline the recalcitrant oil producers with the threat of price war. Yet, during 1993 crisis in order to maintain better price, it agreed to reduce its OPEC quota by 4,00,000 bpd to 8 mbpd and later voluntarily relinquished its entitlement for a quota rise. But nothing seem to push up the oil price and Saudi Arabia found itself worse off both in terms of price and volume.[32]

III. EVALUATION OF OPEC QUOTA POLICY

The OPEC quota policy has earned more criticism than applause for its performance. An effective quota policy gives the cartel members a fair market share in the market if used as a market sharing arrangement. It also should give the cartel members the ability to strengthen oil price in case of its decline. The effectiveness of any policy should be seen in relation to its objective (goal). OPEC quota policy was originally adopted to defend oil prices. Later, it was also used as a market sharing arrangement. But critics have always evaluated it in perspective of its price goal. In fact, during the period it was most criticised as been ineffective in defending the oil price (1986-1988), it was not aiming for the price goal. However, the most commonly cited reason for the alleged ineffectiveness was that of quota violations. It is therefore necessary to examine the quota violations

(i) Quota Violation: Causes and Consequences

Estimates In an analysis of production patterns and quotas of OPEC

[32] Ian Seymour, "Saudi Oil Policy in Perspective", MEES, vol, 37, no.37, 13 June, 1994, p.A-4

members, three criteria are used for assessing over production in 1980s.[33] The first criterion is based on a legal interpretation of the production agreement. It compares production quotas with actual production levels for a given period. According to this, Nigeria had overproduced between April 1983-December 1988. Nigeria, Ecuador and Indonesia overproduced to nearly an equal extent during April 1983-September 1984. U.A.E and Kuwait overproduced more than Nigeria between October 1984 and December 1988.

The second criterion takes a political perspective on the production agreement and compares quotas implicit in the actual OPEC aggregate production with that of the individual countries in various periods. Under this period Qatar and Ecuador overproduced, more than Nigeria between April 1983 and September 1984. U.A.E and Ecuador overproduced more than Nigeria between October 1984and December 1986.

The third criterion interprets the production agreement from an economic perspective. It compares the oil output level that was required to fulfil the price objective with the actual production levels. Results show that under this criterion, overproduction for OPEC as whole was only *significant* in 1988. In that year Nigerian share of overproduction at 3.7 percent was significantly lower that of U.A.E., Saudi Arabia, Kuwait, Iraq and Ecuador.[34] In the 1990s Iran, Kuwait, Venezuela and sometimes U.A.E. violated their quotas more than the others.

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[33] Sarah Ahmad Khan, Nigeria: The Political Economy of Oil ,(Oxford:University Press, 1994), p. 38

[34] R.Mabro, OPEC's Production Policies, (Oxford: Oxford Institute of EnergyStudies,1989), pp. 11-24

Kuwait

Kuwait was one of the frequent violators in 1990s.It had busted its production quota in disregard to OPEC as no OPEC member was ready to undertake production cuts in favour of an expansion of Kuwait production. OPEC members appeared to disregard Kuwait's claim for an increased production quota due to the war damages it had suffered.[35]

Post war Kuwait promised to adhere to its production quotas only on two conditions. One was the guarantee for an increase in its quota and the other was that the other members also complied. It was hard pressed for cash and it wanted its oil production to return to its mid-1980s position of a major foreign exchange earner. Acute need for cash had pushed its leaders to increase oil production, to accept low oil price per barrel and to risk the irritation of OPEC.[36]

OPEC's free rider problem has neither being squarely acknowledged nor adequately dealt with. This supports the position of the Kuwait, which believes that the only way to avoid victimisation in OPEC, was to expand capacity and production continuously, in order to serve Kuwait's interest rather than OPEC's. Kuwait also felt that OPEC's interest was not on a wide base.

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[35] Mary Ann Tetreault, The Kuwait Petroleum Corporation and the Economics of the New World Order, (West Port (U.S.A): Greenwood Publishing Group, 1995), p.150

[36] Mary Ann Tetreault ,"Independence, Sovereignty and Vested Glory ;Oil and Politics in the Second Gulf War," Orient , (Hamburg (Germany)), vol. 34 , no. 1, March 1993, p .92 .

Iran

Iran had been one of the frequent violators. It busted its quota partly to boost its oil revenues and partly to compete with Iraq's overproduction. Iran had flatly refused to agree to any increase in Iraq's 1.2 mbpd quota. Instead, it insisted on a reduction of Iraqi quota in line with general production cuts .It openly declared that it would produce two extra barrels of oil for every extra barrel of Iraqi oil.[37]

Iranian economy had suffered due to nearly a decade of Iran-Iraq war, U.S.A's sanctions and low oil price. Also it had been in disagreement with the OPEC oil policy. So a cash-strapped Iran pursued an oil policy of producing every possible barrel of oil.

Iraq

In 1985-1986 Iraq was insisting on an increase in its quota. Iraq argued that it accepted the 1.2 mbpd under March, 1983 London Agreement purely on a provisional basis. According to it, the quota allocated did not reflect its true production capacity but merely the war affected one. Therefore, it warranted revision as additional capacities had been created. At the Geneva Conference, Iraq represented by Ramzi Salman stated that on the basis of historical patterns and other appropriate criteria, its estimated fair share in OPEC was 13.1 percent.[38] Any thing less than it were absolutely unacceptable. It worked out to be 2.096 mbpd at 16 mbpd OPEC

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[37] Ian Seymour,"Saudi Arabia ,OPEC and non-OPEC',MEES, vol. 29, no.1, 14 october,1986, p. A-6

[38] "OPEC and the Quota problem" MEES, vol. 29, no.24, March 1986, p. A4

production level. Here the notion of 'fair share' rather than the 'incentive to cheat' was the reason behind Iraq's overproduction. At that time, according to MEES estimates Iraq was producing at 1.8 mbpd and was moving towards a level of 2 mbpd as additional capacities were added. Similarly in 1990s Iraq, under Saddam Hussein wanted to regain its former position of a dominant oil producer both in the Gulf and OPEC.

Venezuela

It had been one the moderate members of OPEC. But it had often been at odds with the rest over the issue of the balance between production and export levels. It was exporting additional volumes from its stock of around 2,00,000 to 3,00,000 bpd, though its actual crude oil production was well within its quota in September 1986. It continued to defend its practice on the grounds that OPEC agreements were for production not for export. The others strongly feel that this practice contravenes the spirit if not the letter of the quota agreement.

United Arab Emirates (U.A.E.)

It had chipped in a claim for a quota of 1.5 mbpd as against the 9,50,000 bpd recognised by OPEC in 1986. It claimed that it had been formally promised during the March, 1983 London Agreement that it would be accorded priority in the future quota increase. It had never, recognised the lowering of its quota from 1.1 to 0.95 mbpd in November, 1984.

Another reason for its quota busting was its federal set up. Under the federal constitution, each emirate is fully responsible for its own oil policy

and the federal government or the oil ministry has no say in it. The Emirate of Dubai has never, in practice accepted OPEC's rule on either oil production or oil price.[39]

During 1986 oil crisis, Dubai had made it clear that it would not make any reduction of its customary production of around 370,000 bpd to meet the overall UAE quota. This meant that if 9,50,000 bpd UAE quota were to be observed, Abu Dhabi would have had the unpleasant task of reducing its output below 6,00,000 bpd. Even in more easy times, this level was difficult to comply with.

Ecuador

It indicated in early 1986 that it would be prepared to cut back about 30,000 bpd of oil production from its current levels of output of 3,00,000 bpd. This would entail an increase of 87,000 bpd, from its quota of 1,83,000 bpd. The economy of Ecuador is critically dependent on oil revenues. In 1985 its President Leon Febres Cordero said that if there is strict adherence to quotas then "chaos would break loose, the republic would fall and the democratic system would come to an end".[40] This reflected its compulsions to violate the oil quota.

Nigeria

Even though Nigeria was not a serious production quota violator, yet an examination into its relationship with OPEC significantly bears on OPEC's stability and cohesion and hence the effectiveness of its policies. There were other sharp edges in relationship.

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[39]"U.A.E. Faces Difficulties in Meeting OPEC Quota Limitation", MEES, vol. 29, no.48, 8 September 1986, p. A-3.
[40] MEES, vol.29, no. 5, 11 November 1985, p. A-5.

Tensions between Nigeria and OPEC erupted over pricing issues in 1983-84. It was facing stiff competition from North Sea crude oil grades, in the Atlantic Basin. Nigeria was seen as the weakest link in the OPEC's price chain because it was affected by two-price system. One was influenced by the North Sea oil prices and OPEC administered the other. Nigeria had made unilateral cuts in its oil prices in February, 1983 and October, 1984 (first by $5.50 pb and then by $2pb) to reach $30 and $28 pb respectively. On both occasions, it was responding to price cuts of North Sea oil. It had earned the reputation of "maverick" due to its pricing policies. Its disillusionment with OPEC had nothing to do with its quota level, given that Nigerian quota was not generally less than its production capacities.[41]

Another area of friction between OPEC and Nigeria was related to the counter deals (Barter deals) especially in 1984-1985. It had a possibility of concealed discounting. An estimated 1,75,000 bpd of oil was involved in counter trade when General Buhari was in office (from December 1983 to August 1985). OPEC had decided to keep quiet in view of financial difficulties faced by Nigeria.

There was also intense political and public criticism of Nigerian membership of OPEC in the early 1980s, largely due to OPEC quota restrictions, falling Nigerian oil production levels and consequent decline in oil revenues. Nevertheless, in later years Nigeria adopted a more accommodating attitude towards OPEC. Besides, the conventional justification of the advantages of the cartel and the strength of individual

41 khan, n.33, p.29

members in it, there were reasons specific to Nigeria, for retaining its link with the OPEC. First, a political one was the consideration of Nigerian - Saudi relations, which had religious, economic and political dimensions.[42] The second, a psychological one, was based on the tense relationship of Nigeria with it former coloniser, Britain. The perception that Britain would be more than satisfied with its break-off from OPEC militated against the anti-OPEC tendency in Nigeria.

Nigeria shouldered a greater degree of responsibility vis a vis the organisation, by downplaying its previous price policies and significantly reducing its old counter-trade deals, during the second half of 1980s and 1990s.The problems of alleged Nigerian overproduction and the brief reintroduction of netbacks in 1992 were not as severe as those in the early 1980s.

General Reasons for Quota Violations

In addition to the country specific reasons there were general ones as well. These emanated from the prevailing political and economic conditions. The disagreement and conflict between members as in the case of Iran –Iraq war, the political rift between Saudi Arabia and Libya or the territorial dispute involving Iraq, Iran and Kuwait, both transcended petroleum issues and were centred on oil policy.[43] These political discords among OPEC members had been largely instrumental in creating deadlock

[42] Ibid, p. 37
[43] Howard L.Lax, Political Risk in the International Oil and Gas Industry, (Boston: International Human Resources Development Corporations Publishers,1983), p.61

over quota allocations. Due to their differences in perspective of the Iranian Revolution of, Libya and Iraq had drifted apart. The subsequent Iran-Iraq war had widened the chasm. Nonetheless, Libya expressed solidarity with Iraq during the Gulf war when Reagan come to power in U.S.A. and followed policies to undermine the ruling Gaddafi Regime.[44]The Gaddafi regime was in fierce opposition to Saudi -Arabia due to its support for the Khomeini Revolution in Iran, on its stand on the issue of Israel and its opposition to the presence of U.S.A`s forces in the holy city of Mecca and Medina. However, later Libya successfully mended fences with the Saudi Arabia, even though it was known to call the Arab rulers "cowards, liars and hypocrites".[45]

OPEC had no generally 'agreed upon' criteria for allocation of production quotas among its members, which they believed to be reasonably just and therefore should adhere to.[46] Hence, there was a constant desire to increase one's relative position or share in the OPEC production cake and that led to the predatory behaviour among the members. This was the case of Iraq and Kuwait. Here the notion of 'justice' prompted the members to cheat rather than 'the incentive to cheat' as given by the cartel theory.

Rampant cheating also took place due to the lack of effective mechanism to punish the cheaters. OPEC tried to monitor members'

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[44] Maummer al-Qaddafi came to power in 1969. During his rule Libya was at odds with U.S.A for its linkages with terrorist activities.

[45] Aftab Kamal Pasha, Libya in the Arab World: Qadhafi`s Quest for Arab unity, (Aligarh:Detente Publications on behalf of Centre for West Asian Studies ,Aligarh Muslim University ,1988), p.90.

[46] Tetreault , n.34, p .151

production and exports through a committee and an independent accounting firm. But neither of them had been particularly effective in discouraging quota cheating. Cheating is particularly easy on the international oil market. Only the meters in the oilfield pumps and pipelines, and in the tanker operators, can keep track of volumes of crude oil. Once oil is on the high seas or into the network of international pipelines, it quickly loses all traces of its origin. With the cooperation of distributors and marketers, any country can pump more than its quota, more or less with impunity.

Besides quota busting, other factors could also influence the effectiveness of the policy. These emanated from the existing conditions of the market and its participants.

Data Infirmities

The marginalisation of OPEC as an organisation encouraged individual producers to protect and enlarge their shrunken market share. This discouraged the practice of reporting production levels in a timely and truthful manner. Many OPEC governments for domestic reasons had stopped the publication of their oil market statistics. Not only OPEC but also U.S.A (under President Reagan) had stopped reporting on some national oil statistics.[47] The Chase Manhattan Bank stopped publishing its estimates of the capital expenditures in the oil industry in 1987. Several other companies and firms that used to produce their oil statistics also discontinued their publications. Lack of transparency affects the ability to read market

[47] John Gault and J.E.Hartshorn, "Oil "Transparency" Is Frustratingly Opaque." MEES, vol. 35, no. 46, 17 August 1992 p. D1

condition and make rational or reasonable decisions. Policy failures may not always result from bad policies but could be a result of data infirmities, which aggravates flaws and reduces effectiveness. This could also be true for OPEC quota policy. Quota violations may not be the sole reason for the alleged ineffectiveness of the policy but the database of the quota allocation may not be adequate due to the inaccurate reading of the market conditions.

Cost factors

The oil industry is inherently unstable due to 'high sunk costs' incurred in exploration and development activities. Consequently, it cost little to produce an extra barrel.[48] Hence, there is no incentive to reduce production to balance demand and supply of oil. This partly explains why no North Sea oil production had stopped when Saudi Arabia precipitated the price collapse of 1985-1986. It was estimated that even a price of $5 pb would cover 90 percent of the operational cost of North Sea oil production.[49] This had bearing on the quota discipline of the OPEC members who were getting frustrated at the gain of non-OPEC producers at their expense.

(ii) Contradictions in the Quota Policy

OPEC had more than often been divided on the issue of long-term objective. On one side, Saudi Arabia, Kuwait, and U.A.E. have been the proponents of market share policy. On the other Iran, Algeria and Nigeria

[48] Alirio A. Parra, "OPEC and Market Share: A Direction of Change", (paper presented in the conference on ' The Fall and Rise of Oil Prices' in Bergen, Norway on 15 May 1986), cited in MEES, vol. 29, no. 33, 26 May 1986, p. D1.

[49] Hartshorn, n. 30, p. 79.

have been the price seekers. Venezuela wanted a middle path of pursuing market share objective subject to a certain damage limit to the price war. Nevertheless, OPEC managed to agree on a unified goal be it higher price or larger market share. However, OPEC could not maintain consistency in its priorities. It was more obvious in the third phase. Time and again, it had switched over from one goal to the other. It would increase its production to secure a larger market share and worry about damages of low prices. Similarly, it would cut production to firm oil price and worry about the erosion of its market share. This inconsistency reflects the contradictions in the short-term and long-term interests of the OPEC members. The short-term interests need higher oil price for larger oil revenues whereas long-term interests need the stability of export markets. It is this dilemma of interests that had led OPEC to unwisely regulate both price and output at the same time.

Price and output regulation are two mutually exclusive options to increase revenue. OPEC had often been advised by a group of consultants to either regulate price or output (market share) at a time but not both. However, they could not agree on, which was more practical to control. Even then they tied their quota agreements with the official oil price especially the first and the second quota agreements. OPEC seems to have understood this as late as 2001.

OPEC targeted oil price in the range of $ 22 to $ 28 pb and automatically increased or decreased production as the case may be if the

price moved away from this target.[50] OPEC had championed a price level of $25 pb for the last ten years. This price range catered to both the revenue and the investment needs of the member countries. It had also reconciled the difference in strategies favoured by the rival groups in OPEC. Further it did away with the rigidities of the old quota policy. The rules for any change in the quota were far too rigid. Typically, OPEC ministers met twice a year and at these meetings any change to both total and individual production quotas required the unanimous agreement of all ministers. Disagreement on either total production or individual country share meant that the existing quota would be in place for another six months. Yet, disagreements over the individual quota still exits. OPEC's efforts to make its production quotas more sensitive to dynamic changes in global demand did not work very smoothly in 2000.

Even though OPEC conferences had discussed quota violations it never seems to address the reasons behind it. Also problems like the use of netback pricing formulas, distress sale of cargoes etc. were not discussed in order to improve quota compliance.

OPEC's practice of managing supply has meant that its share of world production was essentially flat at just over 40 percent since the early 1990s. Much of OPEC's production-price management efforts have benefited non-OPEC producers (both companies and governments) by guaranteeing relatively stable prices in the $20.00 pb range for West Texas Intermediate (WTI) in the 1990s. That was still not sufficient to meet the

[50] John Shiry, "Pricing Commentary" on line www.thewebmarket.com accessed on 2.2.2003

countries' social and military spending needs and also to fund significant new or upgraded production and infrastructure projects. On the contrary, it increased non-OPEC supplies especially that of Alaska's North Slope and the North Sea. One of OPEC's sharpest dilemmas is that its quota policy has stimulated intense competition from producers outside the exporters' group, an outcome contrary to its objectives.[51]

(iii) SUCCESS

The outstanding success of the OPEC quota policy is that it had belied the predictions of the demise of OPEC. The predictions of the disintegration of OPEC under the pressure of inter-member competition for market outlets are based strictly on economic theory and have being proved wrong.[52] OPEC is a model of a commodity producer group, in which the producer yields greater influence over the industry, if they collude. The logic is that the whole is greater than the sum of its parts.

Even though OPEC had been a divided group with eleven different voices, which had more than often led to cacophony, it had been able to effectively influence the oil market in deep crisis, through production regulations. The Geneva Conference in August 1986, the Bali Conference in November 1994 and the Vienna Conference in March 1996 (discussed in chapter 3) are outstanding examples. This was made possible by the formation of Gulf Cooperation Council (GCC) in 1982. It gave a forum to the coalition of Saudi Arabia, Kuwait and U.A.E. (dominant in OPEC) to

[51] The Financial Times (London), April 2, 1998
[52] Lax, n.43, p. 15

coordinate their oil policies in advance of OPEC meetings.[53] Four members of the GCC (Saudi Arabia, Kuwait, the U.A.E. and Qatar) account for nearly half of OPEC production capacity, two third of OPEC proven reserves and nearly half of the world's proven reserves.[54] Thus, when the GCC block is united on oil policy, it carried much weight in the OPEC council. Meetings of the GCC had been significant in setting the stage for key OPEC agreements on price, such as March 1983 reduction of the bench mark price and of the production quotas.[55] However, perfect solidarity also does not exist within the GCC. The June, 1989 OPEC Ministerial Meeting, which featured a Saudi-Kuwaiti confrontation on quotas, vividly illustrates that even when GCC members are in accord on long term oil strategies they can disagree sharply on tactics.

Another important point is that OPEC has also learned to structure its quota-policy process. Some of the power to change the quotas has shifted to the OPEC Secretariat from the Council of Ministers. This is a huge change in decision-making. Over time, the Secretariat would better understand how it can manage quota changes in a way that is more transparent and integrated with the real world of pricing that is dominated by traders on the NYMEX and London and Singapore commodity exchanges.

The quota policy gives OPEC an attribute of a swing producer given the fact that it has an excess capacity of 1.4 to 1.9 mbpd. It is this ability to

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[53] Edward. N. Krapels, "US Energy Interest in the Gulf", in Charles F. Doran and Stephens W. Buck ed., The Gulf Energy and Global Security: Political and Economic Issues, (Boulder(U.S.A.): Lynne Rienner Publishers, 1991), p. 25

[54] Stefhen W. buck, "Introduction", in Doran and Buck eds., n.53 , p. 7

[55] Joseph Write Twinam, "Gulf Cooperation Council", in Doran and Buck eds., n. 53, p. 112

significantly increase or decrease oil production that makes OPEC central to the functioning of the oil market. The oil market still needs OPEC as an anchor for some sort of an indication about a reference price level.[56] It also needs OPEC to trigger some short-term price fluctuations (the whole futures market works on speculation about oil prices). Retrospectively, the market had reacted widely to any West Asian news. The energy producers (outside OPEC), their financers (banks and corporations) need OPEC to keep oil prices at a level to prevent them from bankruptcy.

Conclusion

The OPEC quota policy had faced problems at the decision-making and implementation levels. The conflicting priorities of different OPEC members had created deadlocks over individual quota allocations. Nevertheless, OPEC had never ceased to demonstrate its ability to come up with coherent decisions, which had significantly influenced the oil market. Further there had been frequent changes in OPEC's objective and therefore in the usage of the quota policy. The OPEC quota policy in relation to its objective had been effective, in spite of the quota violations. Even though all its quotas had been honoured more in breach than in observance yet by the end of 1989 the market related prices were indeed very close to OPEC's target.[57]

There had been different nuances to quota violations. The violations were not only because of 'the free rider problem' of the typical cartel theory

[56] Robert Mabro, "OPEC and the Price of Oil", (presentation made to the London Oil Analyst Group on 9 February, 1993), cited in MEES, vol.36, no. 20, p. D-4
[57] Hartshorn, n. 30, p.179

but also were rooted in the existing market conditions, individual members' political and economic limitations as well as compulsions and their notions of a 'fair quota'. However, the threat of quota violation still looms large on the effectiveness of the quota policy.

An outstanding success of the quota policy is that the OPEC had survived the oil crises of 1986,1993 and 1999. OPEC had not only saved itself but also had shown its cartel influence on the oil price at least in deep crisis. It other times, even though its direct influence on oil price is limited yet merits lies in 'latent benefits'. Often, benefits are more significant in terms of 'loss or chaos averted' than 'perceived gains'. OPEC quota policy had given anchorage to oil price. Oil price owes both its reference and fluctuations to the happenings in OPEC. Oil industry is also indebted to OPEC for its healthy growth. Not only had OPEC averted the chaos of price war but also made up for the supply disruptions in any quarter. It can avert too high or too low prices both of which are inimical to the oil industry.

CHAPTER 3

THE DECISION: 26 MARCH 1999

There had been a general prediction that OPEC has lost its cartel strength. It is alleged to be no more effective in influencing the oil market in 1990s. The OPEC decision on 26, March 1999 at Vienna came as the surprise to all the market participants. This chapter seeks to examine the details of the Vienna Accord.

(I) THE CONTEXTUAL BACKGROUND

Oil prices during 1990s had spelt much grief for the Organisation for Petroleum Exporting Countries (OPEC). Oil price volatility had been OPEC's problem in the early nineties. Oil prices had reacted wildly to any West Asian news that threatened supply disruptions. Volatile oil prices are as much a malaise for the oil industry as are the low prices. Oil price stability is the holy grail of the oil industry, for without it there could be no future planning. Much needed investment surplus of the big companies is diverted away from the oil industry. This is grim in the face of the fact that the state oil companies of most of the OPEC members were cash strapped and did not have the capacity to augment their oil production capacity. Thus OPEC's future capability to serve any future rise in demand would be seriously undermined. From mid nineties the oil prices went for a slide. Falling oil prices had slowed the rate of effective decline in the intensity of global oil use over the past ten years, but the rising tax rate on fossil fuels had prevented a recovery in

demand in many Organisation for Economic and Development (OECD) countries. The main driving force behind the oil demand is economic growth but change in real price of oil affects the intensity of oil use in the economy as the consumer change their behaviour, invest in new equipment or switch to alternative fuels. The intensity of oil use had continued to fall in more developed OECD countries, where the taxes had boosted consumer prices whereas the intensity has been rising in the developing countries where the tax rates are lower.

The taxes were as high as 70 percent of the final price of the oil products, paid by the consumers. So a fall in price of crude oil had not been fully translated into increase in demand. Producer's surplus in case of high prices had been increasingly transferred to the governments of the consuming nations.

The pain to the oil producers in general and the OPEC countries in particular, intensified with the price collapse of 1998, when the oil prices touched the historically low level of $10 per barrel in December 1998. The key to the oil price collapse lay in the first quarter of the year 1998. World oil consumption had dropped by 0.6 barrels per day between the fourth quarter of 1997 and the first quarter of 1998; not only due to the Asian crisis but also due to the mild winter in Northern Hemisphere.[1]

Instead of reducing production to counter the situation, OPEC's crude production rose by 1.6 million barrels per day between those two quarters.

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[1] Sheikh Zaki Ahmad Yamani, Speeches and Statements, (London, The Common Wealth Institute, 17th February, 2000), on line www.cges.co.uk/pripo200.htm accessed on 15.5.2003

About half of the increase was due to Iraq and the rest was the result of the higher production quotas agreed to, in November 1997 conference at Jakarta.

As a result the global stocks rose by 2.1 million barrels per day in the first quarter of 1998, pushing the average stock cover up by three days' worth over the fourth quarter of 1997. It caused the price to fall by $5 per barrel. When the situation turned worse OPEC did make the production cuts twice in the year 1998. One was in March and the other was in June. (Table 3.1)

TABLE 3.1

OPEC PRODUCTION CUTS IN 1998

Member Countries	Feb 1998 Production (base year) b/d	April 1998 Production Cut b/d	Percentage Cut	July 1998 Production cut b/d	Percentage Cut
Algeria	868,000	50,000	5.7	80,000	9.2
Indonesia	1,380,000	70,000	5.0	100,000	7.2
Iran	3,623,000	140,000	3.8	305,000	8.4
Kuwait	2,205,000	125,000	5.6	225,000	10.2
Libya	1,453,000	80,000	5.5	130,000	8.9
Nigeria	2,258,000	125,000	5.5	225,000	9.9
Qatar	700,000	30,000	4.2	60,000	8.5
Saudi Arabia	8,748,000	300,000	3.4	725,000	8.2
UAE	2,382,000	125,000	5.2	225,000	9.4
Venezuela	3,370,000	200,000	5.9	525,000	15.5
Opec Total	26,988,998	1,245,000	4.6	2,601,998	9.6

Source: Adapted from OPEC, Vienna

The production cuts were not only inadequate but also too late given the demand-supply equation of oil. Oil revenue accruing to the members of

OPEC had peaked in 1980 at $439 billions (constant 1990 dollar prices) and had constantly declined since then.[2] The dramatic $51billion drop in OPEC's oil income in 1998 pressurised the members, especially Saudi Arabia to think seriously on production cuts.[3] Saudi Arabia's national debt was believed to have touched 115 percent of its Gross Domestic Product (G.D.P) and the budget deficit was $11bn in 1998.[4] Further Saudi Arabia could only pay wages and salary bills with its much-depleted income of 1998. No wonder Saudi Arabia was instrumental along with Venezuela to engineer the third round of production cuts in March 1999. The prevailing oil market conditions had not only stimulated the economic variables to make them compelling for action but also had caused the occurrence of certain events of political significance. Financial pressure was not the only driving force behind Saudi Arabia's initiative for the Vienna accord. Visit of United States Energy of State Mr. Bill Richardson to Saudi Arabia could be understood in the following light.

The reaction of the world oil industry against excessively low oil prices was very strong. Very low prices of oil had made investments in the non OPEC oil reserve unfeasible, especially where the cost of production was very high as in United States of America (U.S.A.), the North Sea, the Caspian Sea, the Gulf of Mexico etc. The oil companies of U.S.A. had registered erosion of their profits and some had registered heavy losses. The

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[2] www.eia.doe.gov/emeu/plugs/plopec.hml, Energy Plug: OPEC Revenue Fact Sheet accessed 12.9.2002

[3] Yamani, n. 1.

[4] Menry T. Azzam: "Mounting Financial Pressure in the Gulf and the Need to Establish Strategic Relationship with oil companies", paper presented in 9th annual conference of CGES London 1999.

small and independent companies, which were unable to bear losses closed down. Even these companies could not generate the surplus required to cover the depreciation cost of plants and the cost of developing upstream operations. In 1998 the decline in profits of U.S.A's companies from the upstream operations were staggering which were nearly 146 percent for Arco, 77 percent for Texaco, 52 percent for Chevron, 42 percent for Exxon etc. As a result of low prices, oil production in U.S.A. was believed to have declined by more than 600 million barrels per day (mbpd), mainly in the onshore oil field in the lower 48 states.[5] The collapse in the oil price and the consequent decline in production of the non-OPEC oil would have adversely affected U.S.A.'s efforts to diversify its oil sources. For the last fifteen years there had been a trend of declining U.S.A.'s dependency on the OPEC oil, especially from West Asia. An eventuality of this kind implied a far-reaching economic and political consequence. The U.S.A. could not have ignored the adverse repercussions of the low oil price on domestic oil production in the same way as it could not ignore the effects of high prices on its economic growth and internal inflation. The political factor had been a stronger determinant of the oil industry especially for the Gulf producers of OPEC. It was these considerations that prompted Saudi Arabia to abandon its policy of minimum output of 8 mbpd (in pursuance of its market share objective) and enter into "side negotiations" with other major producers, Venezuela and Iran, for the production cuts. The financial crisis in these countries and the

[5] Fadhil J. Chalabi, "OPEC and 21st Century: The Struggle to control prices", Journal of International affairs, July 1999, article prepared for Columbia university online www.cges.co.uk/ep0799.htm accessed on 12.5.2003

consequent social tensions urged these countries to agree on the Vienna accord.

Iran, which was already producing at full utilisation level, was almost bankrupt. Even the 10 percent increase in oil production quota during the Jakarta meeting in 1997, did not redress the malaise as it did not have the capacity to produce more. It was at frequent discord with the OPEC over the issue of baseline for the production cuts in 1998. During this period of discord, political change was stirring in Iran. For the past one and a half year Saudi-Iranian relations improved significantly. This could be attributed to the new President Khatami, who was now able to exert his authority over the conservative dominated portfolios such as the foreign affairs and the oil and energy. Iran's schizophrenic policy at March 1998 OPEC meeting, had the moderates supporting production cuts on the 3.6 mbpd baseline, while the conservatives arguing for 3.9 mbpd.[6] With Khatami's initiative, Iranian stand was reconciled to the 3.6 mbpd as the baseline for the production cut. On friendlier terms with Iran, Crown Prince Abdullah ceded to president Khatami's new cuts from 3.6 mbpd.

Similarly, Venezuela was also in severe financial crisis due to the falling oil revenue. There was growing discontentment in Venezuela over the OPEC's policy towards it. In March 1998 agreement, Venezuela was burdened with the largest percentage production cuts and Iranians walked away taking no pains (as they were overstating their production levels). In

[6] James Richard ,New Cohesion in OPEC? Pricing And Politics", Middle East Review of International Affairs,(Tel Avive), vol 3, no.2. June 1999,p 2.

recent years Venezuela's oil policy was based on the objective that any OPEC deal must be equitable and must include the non-OPEC producers also. The change of government in Venezuela and its determination to reverse the oil price slide generated an additional force to the emerging consensus over the March 26th 1999 decision at Vienna. Venezuela's new president Hugo Chavez secured for the country a smaller percentage production cut than the rest of the cartel.

The change in domestic politics of Iran and Venezuela enabled Saudi Arabia to achieve a more transparent agreement, which sent good signals to the non-OPEC producers also. Norway, a non-OPEC producer that participated in March 1998 agreement, recognised OPEC's prospects for better compliance. It added its stamp of credibility to the deal with a production cut of 1,00,000 barrels per day.[7]

Russian could not increase its production to generate more revenue, due to transport constraints. Russian transport capacity utilisation was 100 percent at that time. There were talks about a new 50 million tonnes a year pipeline from Titan Pectoral to the Baltic Sea, but this project was at least two years off. So any chance of increasing oil revenue lay in the increase of the oil price. In March 1999 OPEC accord; Russia pledged a production cut of 100,000 barrels per day.

The prevailing political scenario and the existing market conditions also contained certain destabilising factors, which could make the members

[7] Ibid, p. 22.

of the Vienna accord sceptical about the success of the accord, in jacking up the oil price. One was the future level of Iraqi oil, if it returned to the market, with the expected removal of the United Nations sanctions. Iraq's reserves were second to Saudi Arabia and its current production level was 2.6 mbpd, which was less than half its pre Gulf war level. The United Nations (U.N.) Security Council had voted unanimously to increase the Iraqi oil export under the U.N oil for food programme from $2.14 billions to $5.21 billions over six months. Iraq declared that it only had the capacity to export $4 billions over six months period. The Gulf war and the U.N. economic sanctions had crippled Iraq's oil Industry. As long as the sanctions were in force Iraqi oil would have limited impact on the world supplies of oil. At best it could increase its production to pre-war level of 3.8 mbpd and that too, with the help of the U.N. It would have taken about two years' times and cost about $5 bn, which Iraq could not afford while the sanctions, persisted. However, a sanction-free Iraq could have a far-reaching impact on world oil supplies.

The Energy Intelligence group estimated that, with proper investment, Iraq would double its production in less than two years and flood the market.[8] OPEC feared that Iraq would wake up from deep slumber and drive oil prices down.

Another factor, which could have fuelled speculation, was the level of missing inventories in addition to the record level of high inventories, which were approximately 350-400 million barrels. The missing inventories were in the productions statistics of OPEC but not in the consumption statistics.[9]

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[8] Ibid, p. 23.
[9] Ibid, p. 23.

Another factor, which indirectly contributed to the making of the decision but was not the immediate cause was the rising environmental concerns and the signing of the Kyoto Protocol in December 1997. The Kyoto Protocol aiming at a drastic reduction in carbon dioxide emission was soon expected to be translated into policy actions and fiscal measures that would reduce consumption of fossil fuels, especially that of oil and coal. This would justify carbon tax on the use of oil. The political pressure on behalf of the environmentalist was mounting to a point where green parties were becoming a seriously force to reckon with.[10] These taxes on petroleum products were as high as 70 percent and in case of gasoline 80 percent compared to 40 percent and 70 percent respectively twenty years ago.

These high tax walls, which isolate the price of oil products in domestic market from that in the world market have the effect of reducing consumption below what it otherwise would have been. This integrated the efforts of the oil producers (both OPEC and non OPEC) to save the relative share of oil in the energy matrix. The crude oil as a fuel was losing to the natural gas. The share of oil in energy consumption had decreased from 54 percent in 1978 to 43 percent in 1998, in Organisation for Economic Cooperation and Development (OCED) countries. The fall was more pronounced in Western Europe and Japan.[11] The new realities besetting the oil industry tries had brought a behavioural change in OPEC, which now sought to strengthen the leadership of all oil producers OPEC or non-OPEC.

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[10] Chalabi, n. 5

[11] Fadhil,J. Chalabi, Impact of oil prices on natural gas supply and demand balance, presentation in IIES Persian gulf gas Resource conference 7 and 8th Nov 1999 ,p. 11.

This led to the formation of an ad-hoc cartel and the signing of the historical Vienna Accord, which included four non-OPEC members also, namely Russia, Norway, Oman and Mexico.

(II) THE DECISION: 26 MARCH 1999

The key players were Saudi Arabia, Venezuela, Iran, Norway, Mexico, Oman and Russia, which were the prime movers of the Vienna Accord on 26th march 1999. This OPEC decision of the production cut of 1.7 mbpd was to remain in force for a period of one year, with effect from 1st April 1999. The remarkable thing about this decision was that it secured cooperation of the non-OPEC members namely Russia, Norway, Mexico and Oman. This feature is typical of collusive oligopoly market where sellers recognise their interdependence in the market and collude to reap monopoly industry profit.

Ten OPEC member contributed about 1.7 mbpd of the production cut while the non-OPEC members together contributed about 4,00,000 bpd. The total production cut was of the magnitude of 2.1 mbpd. This production reduction of 2.1 mbpd was in addition to the cut of 3.1 mbpd achieved in March and June 1998 which gave the global figure of more than 5 mbpd reduction since march 1998.[12] The production cut of the individual OPEC member is given is table 3.2. The base line of production cut would be the production level of individual countries in 1998 obtained from the secondary sources.

[12] Yousfi, Yousuf, "Opening Address to the 107 meeting of the OPEC conference", no/1999, 23 March 1999, Vienna, Austria.

TABLE 3.2

DISTRIBUTION OF PRODUCTION CUT OF 23 MARCH 1999 AMONG OPEC MEMBERS

Member Countries	July 1998 Production level (bpd)	March 1999 Production (bpd)	Production Cut Percentage
Algeria	7,88,000	731,000	.94
Indonesia	1,280,000	1,187,000	1.9
Iran	3,318,000	3,359,000	*
Kuwait	1,980,000	1,836,000	1.02
Libya	1,323,000	1,227,000	1.28
Nigeria	2,033,000	1,885,000	1.20
Qatar	640,000	593,000	2.78
Saudi Arabia	8,023,000	7,438,000	3.69
UAE	2,157,000	2,000,000	1.574
Venezuela	2,845,000	2,720,000	2.2
OPEC-10	23601786	22977999	4.5

Source: Adapted from OPEC Press Releases, Vienna

*The discrepancy is due to the controversy over Iran's production level as the base line.

Saudi Arabia took the largest cut and that too intended to implement it one month earlier. Next was Venezuela, followed by Iran, in terms of absolute volume. Whereas in terms of percentage Venezuela was given a lower percent production cut as compared to March 1998. Iran was given the baseline of 3.6 mbpd. These new production levels were not considered as quotas but were temporary production level till March 2000.

Non-OPEC Members Four non-OPEC members namely Russia, Mexico, Norway, and Oman pledged a total of 4,00,000 barrels per day production

cut in the March 1999 decision. Mexico had more involvement with OPEC than any other major non-OPEC oil producing country. It was the key player in March 1998 production cuts. Mexico's Isthmus crude oil is the only non-OPEC crude oil included in the 'OPEC Basket', the arithmetic average of which is used as an indicator of the average price per barrel of the OPEC oil. Mexico had agreed to 125,000 barrels per day production cut. New targets would be 1.52 mbpd down from previous pledge of 1.644 mbpd.

Russia had announced a cut of 1,00,000 barrels per day in the 107th meeting of OPEC at Vienna. Russia had attended many of OPEC's meetings since 1997 and had often made commitments for the production cuts in coordination with Russia. However, there had been often considerable ambiguity regarding whether Russian's reduction pledges were for production or for export.

Norway does not generally participate in OPEC meetings but the world's third largest oil exporting country had adjusted its production in coordination with the OPEC on three occasions since 1998. Since Norway is an extremely small oil consumer, the production cut it announced affected productions rather than export. Norway met with the major world oil producers including many OPEC members in early March 1999 in The Hague.[13] After this meeting, Norway announced the production cuts of 100,000 barrels per day. It stipulated that its cuts would be from the annual government production projections (3.2 mbpd) rather than from the existing levels.[14]

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[13] www.eiadoe.gov.com accessed on 20.5.2003.
[14] www.eiadoe.gov.com. accessed on 20.5.2003

Oman is a small Gulf producer that had attended most of the OPEC meetings in the last few years and had made three commitments to reduce production in cooperation with OPEC. In March 1999 meeting, it announced a production cut of 63,000 barrels per day.

The meeting at Vienna lasted only for few hours and is noted for the speed at which the decision was taken. The March,1999 OPEC conference is a manifestation of a new trend that has evolved recently. Major producers like Saudi Arabia, to lesser extent Kuwait, Venezuela and occasionally Iran, take the lead in production regulation through 'side talks'. The 'OPEC Conference' in Vienna served merely as a cover for the ratification of agreements reached in The Hague, following the negotiations led by Saudi Arabia and preceded by the deliberations within the Gulf Cooperation Council (GCC) and Iran.[15] The Vienna meeting could be seen as a mere formality in endorsing those agreements previously made, in which OPEC secretariat did not participate.

(III) ISSUES AND CONCERNS OF MAJOR OPEC MEMBERS

Issues and concerns of individual OPEC members in the Vienna Accord could be best understood by the significance of the oil revenue in the overall economy of these states. Broadly, issues concerning them were same given the fact that all these economies were critically and more than proportionally dependent on the oil revenues. However, these issues and concerns of OPEC members have different nuances due to their differences

[15] Chalabi, n.5

in the status of oil reserves, cost of production and state of economy. Most of the oil producing countries of OPEC like Saudi Arabia, Iraq, Iran, Kuwait, United Arab Emirates (U.A.E.) and Qatar belong to the West Asia and are broadly categorised as the rentier economies. These rentier economies have crystallised a parochial and authoritarian political structure. These authoritarian regimes could only stand erect on the pillars formed by the interest groups nourished by the oil rent. Professor Wiarda had described West Asia in the following terms,

"In the political realm all these regimes remain authoritarian. Economically they have done reasonably well lately not because they are efficient or self-sufficient but because of oil foreign subsidiaries or proximity of wealth that rubs off on them".[16]

The West, especially the U.S.A and ironically the oldest democracy in the world had endorsed such regimes. They helped in maintaining their status quo. These regimes were friendly suppliers of oil. They were not only good sellers but also promising buyers of arms and ammunitions from the West. They had to maintain their regimes amidst internal social unrest, fuelled by deprivation, ushered in by globalised competition. As a consequence of high defence spending, the West Asian states made fewer investments in the economic and social development (e.g. education). In 1995 military expenditure as percentage of G.D.P was; Iran (3.9), Iraq (14.8),

[16] Howard, Wiarda, 'Introduction to Comparative politics: Concepts and Processes '(Belmont, California: Wordsworth publishing: 1993), p. 135.

Saudi Arabia (10.6), Kuwait (11.8), Qatar (4.4), and U.A.E (4.8).[17] As a result, these economies remained undiversified and unproductive, with oil having the pivotal position. It gave life to the ruling authoritarian regimes. Hence, the acceptable price which a barrel of oil fetched for these economies was not only guided by its cost of production but also the level of current expenditures these states had to occur, to win the loyalty of the interest groups and to prevent social tensions from erupting. These states pursued 'cradle to grave' welfare policy, which involved a huge amount of subsidies. The threat of social tensions was great in countries like Saudi Arabia, where there was increased threat from Islamic extremists.

Saudi Arabia

The consequences of oversupply during 1997 and 1998 had been dire for Saudi Arabia, whose oil revenue fell by almost $14 billions (30 percent) while the population growth hovered near 4 percent and the unemployment remained high. At the same time it was impossible to cut down current expenditure on the bloated public sector or the billions of dollars spent on the royal stipends and other rents. Also the bombing of U.S.A. military base at Khobar and the activities of Osama bin Laden outside the country increased fears of brewing indigenous revolt.[18] According to the International Institute of Strategic Studies, Saudi Arabia's expenditure on defence alone in 1998 amounted to $20.5 billions representing 79 percent of its oil income, 41 percent of the total expenditure and 16 percent of G.D.P. of

[17] Ali. R. Abootalebi, "Middle East Economies: A Survey of Current problems and issues", Middle East Review of International Affairs, vol. 3, no. 3, Sept. 1999, p 63
[18] James, n. 6 , p. 18.

that year. This by any standard was high, especially during the time when oil prices fell to $10 per barrel. Under these financial constraints, Saudi Arabia, through Vienna Accord seemed to be geared to maximise oil revenues in the short turn in order to meet current expenditure. In order to maximise per barrel income it had kept put on the backburner its two other major concerns. One was the long-term goal of market share and the other was the increasing cost of maintaining unutilised capacity. The Centre for Global Energy Studies (CGES) had calculated that Saudi Arabia needed a minimum level of $16 per barrel just to meet its salaries, interest, subsidies, supplies and maintenance costs. In order to cover normal investment expenditure and to reduce Saudi debt burden by $3 bn each year, it would require a minimum price of $20 per barrel.[19] However, Saudi Arabia is one of the lowest cost producers with an average cost of production approximately equal to $1 to $1.50 per barrel[20]. In economic theory, the owners of the abundant low cost resources are assumed to capture most of the market, leaving the residual share to be taken by high cost producers, who would eventually set the price for the market at level above their cost. As a result, low cost producers earn rent, which is the cost difference per barrel in addition to higher revenue due to a larger market share. Once the oil market opened up and became competitive it should have been the interest of low cost producers (Saudi Arabia, Iraq and Kuwait) to limit the expansion of higher cost competitors. The optimum policy of Saudi Arabia should always be that of a greater market share albeit at a lower price. Thus it would have discouraged

[19] Yamani, n. 1

[20] Gawdat Bahgat, "Managing Dependence: American-Saudi Oil Relations", Arab Studies Quaterly , (Washington D.C) vol 23, no 1, winter 2001, p.24

investments in the high cost areas, increased demand for oil and maximised income through balanced combination of per barrel income (i.e. the price) and volume. [21]

In the Vienna Accord of March, 1999 Saudi Arabia was doing just the opposite by reducing production, hence its market share .The jacking up of oil price would make investments in the non-OPEC oil reserves feasible and profitable. Since 1991 Saudi Arabia's oil policy had been to have a market share of minimum 8 mbpd, a policy it adhered to until March 1999. The kingdom even tried to increase its market share during the OPEC Conference in Jakarta, December 1997. The OPEC ceiling was also increased by 10 percent even when the Asian economic crisis was taking its toll on oil demand. As a consequence, price fall was accelerated. The price of Brent crude oil fell to less than $10 per barrel. Due to the economic and political constraints discussed above, Saudi Arabia was forced to abandon its 8 mbpd floor and reduce its output to 7.4 mbpd as a part of OPEC's bid to increase price by cutting production. The Vienna Accord was designed to redress the short run economic problems of Saudi Arabia. However, it brought two other concerns to Saudi Arabia. One was the decline in market share. Market share to Saudi Arabia not only had economic importance but also had political dimensions. It determined the different nuances of Saudi-U.S.A. relations. The backing of U.S.A. was extremely important to maintain the stability of the ruling regime in the face of brewing social tensions. Saudi Arabia tries to be the largest supplier of oil to U.S.A (at the subsidised rate) in order to demonstrate it's importance to U.S.A. In the Vienna Accord, the

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[21] Fadhil J. Chalabi "Oil and Development Policy in Saudi Arabia", online www.cges.co.uk/ep140200.htm accessed on 24.4.2003

production cut offered by Saudi Arabia would move Mexico or Venezuela ahead of Saudi Arabia as the main supplier to the U.S. A.'s market.[22] Saudi Arabia's market share had already fallen by a full percentage during 1997. Another area of concern was to prevent new investments in the non-OPEC areas. Very high prices would divert investments in the non-OPEC oil reserve namely the North Sea and the Caspian Sea, which were not feasible at low prices. High prices would increase the future oil supplies and consequently drive oil prices down leaving the oil producers in the same dilemma as that of the 1998 oil price fall. Due to high current expenditure, Saudi Arabia aimed for a price of $20 per barrel, which was high enough to justify investments in the Caspian Sea, the North Sea and the lower forty-eight states of U.S.A. Hence, the Vienna Accord would eventually put Saudi Arabia in a vicious circle. The situation becomes grimmer when there were determined efforts by the U.S.A. to reduce the dependence on the Gulf oil. The West with regard to the Central Asian oil and gas reserves was playing the second great game. For this economic rationale was kept aside. For example the Baku-Ceyhan pipeline was full of economic fallacies. The Baku-Ceyhan pipeline starting from Baku and ending at Ceyhan, would run for 468 kms through Azerbaijan, 225 kms through Georgia and 1,037 kms through Turkey. Oil executives had been blunt in saying that subsidies were the only option that made sense for the long and expensive Baku Ceyhan pipeline.[23] High oil prices facilitated this trend.

The Vienna Accord was signed at the time when there was great uncertainty over the question of future level of Iraqi oil. The embargo on the

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[22] Richard, n. 6, p. 19.

[23] Stanley Kober, "The Great Game Round No 2 :Washington Misguided Support for Baku-Ceyhan Oil Pipeline" Foreign Policy Briefing ,(Washington),no 63,October 2000 ,p5

Iraqi oil gave OPEC a breathing space and facilitated Saudi Arabia to increase its production from 5.4 mbpd before the war to 8 mbpd. Saudi oil in fact replaced 80 percent of the Iraqi oil in the market. Without the U.N embargo on the Iraqi oil, Saudi Arabia would have been unable to survive financially, owing to it's increasing budgetary deficit, with levels of oil production previously allocated to it.[24] Return of the Iraqi oil in the market would further compel Saudi Arabia to reduce its production and bear an increase in the cost of maintaining excess capacity. Otherwise the Iraqi oil would have further depressed the oil price.

Venezuela For Latin American largest producer matters were much more disturbing. To meet OPEC's quota, Venezuela ordered cuts in production of more than 25 percent from its peak 1998 levels. Even though the prices meant more money per barrel yet it could not compensate the drop in production volume. The average price of Venezuela's crude (known as 'Tia Juana) was $10.57 per barrel in 1998. By July the average 1999 price was $12.02, a price increase of only 13 percent compared to 19 percent drop in output over the same period. For Venezuela oil constituted 18.5 percent of G.D.P, 37.5 percent of government revenue and 70 percent of hard earned currency.[25] It was losing heavily to Mexico, the second largest regional producer, which fared handsomely from the production cuts. The national oil company Premex earned an additional $1 billion for every marginal $1 per barrel increase in the price of the oil. What was considered wise in the long run proved painful for Venezuela in the short run. Another issue of concern for it was that its major variety was of very heavy crude. 'Orimulsion' a very

[24] Chalabi, no 5
[25] Richard, n. 6, p. 21.

heavy crude, was abundant in Venezuela's Amazon region. The fuel was rejected by U.S.A for its heavy sulphur content. Venezuela was searching for markets in Asian developing nations. Further price rise of heavy crude was relatively lesser than that of the light sweet crude, when production of both was cut back. Real demand results from the individual refinery requirements for the specific type of crude. When the lighter, sweet crude is in short supply, refiner must consider the additional cost of refining the heavier, higher sulphur crude against the alternative of paying more for the lighter sweet crude. As long as the light sweet crude was available most refinery would pay an additional price to get it.

Iran In Iran oil constitutes 40 percent of G.D.P. Since the Iranian revolution the conservatives had dominated Iran's oil policy. Iran often had been black listed by the U.S.A. and subjected to sanctions, due to its revolutionary extremist policies. During 1997,the cash-strapped Iranians had one policy objective to produce every possible barrel of oil up to country's capacity.[26] They had been overstating their production levels in hope of establishing a base line for the future cuts of 3.9 mbpd instead of 3.6 mbpd ; they had been actually producing. It had been often at loggerheads with Saudi Arabia and Kuwait over the question of production cuts. Since it was fully utilising its capacity any chance of increasing oil revenue would only come through higher prices. Tehran claimed that it lost $11 billion with every $1 drop in the price of oil.[27]

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[26] Ibid, p. 20.

[27] Shebonti Ray Dadwal, "Oil price crisis. Implications for Gulf Producers" , Strategic Analysis (New Delhi), vol. 33, no. 1, April 1999. p,151

Higher prices would mean that the investments would get diverted to the non-OPEC areas such as the Caspian Sea, the North Sea etc that were not feasible at the low oil prices. With price increase these high cost oil reserves would get precedence over the low cost Iranian reserves due to the sanctions and uncertainty in the political scene in Iran. This argument could be best understood in the light of the following fact. The Baku-Ceyhan pipeline was planned to avoid the territory of Iran even through this was the shortest route to the Gulf. This shows that there was an attempt to increasingly marginalise Iran politically and economically. Iran needed billions of dollars to augment its productive capacity and to replace depreciating drilling and other machineries as the National Iran Oil Company (NIOC) did not have the fund or the technology to do it alone.

Common Issues of Concern for Some OPEC Members

There were certain issues, which concerned few OPEC members alike. When the cartel embarks on a production cut there are excess capacities, which remains unutilised, and the maintenance of which incur huge costs. This ultimately adds to the cost of production hence it not only decreases profitability but also comparative advantage. OPEC's unused capacity stood at 7.0 mbpd, more than three-quarters of which existed in only four countries, Saudi Arabia (42 percent) Kuwait (10 percent), Venezuela (14 percent) and UAE (9 percent).[28] Saudi Arabia's unused capacity according to the Centre for Global Energy Studies estimates cost Saudi Arabia $500 millions each year, which added 17 cents to the cost of

[28] Chalabi, n 11.

every barrel it produced. The cost to Venezuela of keeping 0.8 millions barrel per day of capacity unused was approximately $240 million per annum or 24 cents per barrel of production.[29]

The five founding members of OPEC wanted to achieve a price band of $20-25 per barrel. Too high price would mean a decline in the market share of these members. From the past experience it was known that the burden of drop in OPEC's market share in defence of prices fell more on Saudi Arabia, Kuwait and Iraq. Their combined share dropped by 4 mbpd between 1979-97 whereas others members (like Iran, Qatar, UAE and Venezuela) increased their production paradoxically by more than 2 mbpd.[30]

So the concern of these founding members was that the price should not go as high as $30 per barrel. Libya, Algeria, Indonesia, and Nigeria, due to their limited capacity wanted $30 per barrel as the oil price. Since countries like Saudi Arabia, Kuwait, Venezuela were sacrificing their market share to boost oil prices their major concern was the observance of compliance by the non-OPEC members so that they don't expand production at the cost of the OPEC producers. Compliance from the non-OPEC also depended upon the level of adherence from the OPEC member. If the non-OPEC members believed that the OPEC would adhere to, the production cuts and the market would respond by jacking up the oil prices, they would also comply. If they perceived cheating then they would also over produce to

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[29] Zaki Yamani, "Oil Price Challenges into Next Century" , presentation in CGES & oil & Gas Joint Conference, 9th & 10th September 1999 ,Texas, U.S.A. online www.cges.co.uk/pr1099.htm accessed on 12.2.2003

[30] Chalabi, n. 5,

increase their revenues .As oil prices go down the producers would supply more to increase their revenue, that is embark on a backward bending supply curve.

However, oil price got higher (as a result of production cuts), the centrifugal forces within OPEC would be greatly enhanced and members would be tempted to over produce as the standard cartel theory predicted.

Conclusion The Vienna Accord was signed in spite of the apparent irreconcilable positions of some of the OPEC members. It was signed to deliver the oil market from the crisis in which the price dipped to the historical low levels of $9.93 pb in January 1999. In this respect, it followed the precedent set by the Geneva Conference in August 1986 and the Bali Conference in November 1994. Saudi Arabia was the key player in the decision. Political factors, namely the change of governments of Iran and Venezuela and the visit of the U.S.A. Secretary of State to Saudi Arabia were largely instrumental in cementing the deal. However, political influence is not an exceptional or accidental factor in the making of this decision. The cohesion in OPEC had often occurred through political events. Nevertheless, it should not undermine the solidarity in OPEC due to the fact that the OPEC members are themselves political heads of their respective States. However, the same oil divergence of interests, issues and concerns among the OPEC members persisted behind the Vienna Accord

CHAPTER 4

IMPACT: MARKET RESPONSES AND RESISTANCES

The Organisation of Petroleum Exporting Countries (OPEC) decision of 26 March, 1999 was hailed as the resurgence of OPEC's cartel strength. This chapter seeks to examine the effectiveness of the decision through an analysis of the market responses and resistances. Did the decision achieve its desired objective of oil price rise, increased oil revenue and higher investment in OPEC? Could it send a message to the world that oil markets are still captive to OPEC's decision?

I. A THEORETICAL OVERVIEW

Market responses to oil production cuts are both short run and long run. Short run responses are those, which immediately occur whereas long run responses occur after a time lag.

(i) Short Run Responses

(A) Price If the oil production cuts are such that the demand-supply equations create excess demand then the immediate market response is to increase oil price. The price rises to wipe off excess demand. In addition to, this there is also a speculative dimension to the oil market. This is because, trade in futures market (paper market) has increased substantially and physical markets are not altogether immune from even short term and highly speculative swings in the paper market. If the market (both buyers and sellers) takes the production cuts seriously and anticipates greater demand

than supply in future then the price rises. Here the speculator believes that production cuts would eliminate excess supply and he successfully bids higher prices for the future trading. Since the spot oil prices are linked to the future prices, they also increase.

(B) Inflation The high oil price induces price rise in other commodity markets as oil is used as inputs in many industries e.g. petrochemicals, refineries, transport etc. Both the developed and the developing economies experience the inflationary effect of oil price rise. But the developing countries are subjected more to the inflationary pressures due to structural rigidities and supply constraints in their economies. Inflation decreases the export earnings in real terms.[1] Similarly it decreases the import burden in real terms.

(C) Trade Overall trade and trade in oil increases in nominal terms. This is more significant in case of developing economies. If a developing country is an oil exporter then its export value rises in nominal terms (if oil price rises). Its imports may also rise. Higher export earnings increase the capacity to import. It is because more purchasing power is placed in its hands. If the oil importer is a developing economy with inelastic demand for oil then with oil price rise this import value also rises. As a consequence, the percentage of trade in Gross Domestic Product (GDP) increases.

(D) Terms of Trade Terms of trade are defined as the ratio of export price to import price. With the oil price rise, terms of trade significantly improve for the oil exporting countries when oil exports have a dominant share. Terms of

[1] Real value is the difference between the nominal value and inflation.

trade deteriorate for the oil importing countries, when oil import dominates the import basket. The deterioration of terms of trade is more severe in case of the developing and the less developed economies, which are exporters of primary commodities.

(E) Balance of Payments Oil price rise affects balance of payments of the countries if oil is either a major export or a major import. This effect is more pronounced in case of the developing countries. The balance of payments improves for the oil exporting nations unless it is offset by corresponding increase in imports (due to higher capacity to import). Balance of payments deteriorates for the oil importing countries. It deteriorates more severely in case of oil importing country being the exporter of primary products, which face both price and income inelasticity of demand.[2]

(F) Currency Depreciation High import bills may even cause domestic currencies to depreciate in the developing countries. Currency depreciation makes the oil import priced in dollars dearer (costlier), hence intensifies the adverse impact of the oil price rise in the developing countries. If there is currency depreciation in oil exporting country (due to higher demand for dollars to pay for other imports), then export gains significantly decrease in real terms.

(ii) Long Run Responses:

Long run responses often work towards building up of market resistance to abnormal price levels.

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[2] Income elasticity of demand means proportionate change in demand for proportionate change in income. Price elasticity of demand is the proportionate change in demand for proportionate change in price.

(A) Growth The consequences of oil price rise culminate in slowing the growth of economies especially that of the oil importing developing countries, which are on expansionary phase of heavy industrialisation. Rising oil price may boost the economies of the oil exporting nations but the benefit is generally less than the loss of economic growth in the oil importing countries such that the net impact on the global economy is negative.[3] Fuel in developing countries is also crucially linked to their growth in another way. Fuel export or import has a significant effect on the ability of the developing countries to import other capital goods essential for their growth and development.[4] The oil exporting countries are not better off in the long run even if they have reaped export gains in the short run. The demand for their exports is invariably linked to the growth of other economies, especially that of the developed countries. The developing economies, especially that of Asia, are the expanding market of oil. The International Monetary Fund (IMF) estimated that a price rise of $10 per barrel' if sustained for one year would reduce G.D.P. of the world by 0.6 percent, ignoring the side effects on investors' confidence, stock markets and policy responses. The G.D.P of the industrialised countries would shrink by 0.5 percent while that of the developing countries by 0.75 percent.[5] Thus, the market slows the growth of economies to build demand side resistance to high oil price.

(B) Investment One of the market responses, if high oil price stabilises, is to increase investments in new oil fields, which are otherwise not feasible at low oil price. These investments are to increase production of oil, to upgrade

[3] International Energy Agency (IEA), World Energy outlook 2002, (Paris), p. 2.
[4] United Nations(UN), World Economic and Social Survey(WESS), 2001, (New York), p. 29.
[5] IEA, n.3, p. 4.

technology in order to reduce cost of oil production, to decrease intensity of oil use per G.D.P and to reduce dependence on oil by developing alternative sources of energy. These investments work to build up supply side resistance to high oil price.

(iii) Market Resistances:

The market always moves to achieve equilibrium through free play of demand and supply forces. The market resists deliberate acts of any cartel to influence price to an abnormally high or low levels. This effect is more pronounced at a time when the consumer is the sovereign. He dictates a pattern of demand that the supply seeks to fulfil. The oil market also tries to resist in a similar way.

(A) Short Run Resistances The petroleum industry gives inelastic demand and supply responses to oil price rise. It is due to the long gestation period involved in bringing about any significant change in supply and demand patterns. Hence, short run resistances could be offered only by those developed countries, which had matured over a period of time in facing the oil crisis. They make contingency plans to tackle the crisis in the short run. These contingency plans may take the shape of maintaining strategic petroleum reserves like that of the United States of America (U.S.A.) and drawing out oil from it. They can be members of some organisations like International Energy Agency (IEA), which monitors the energy market and tries to avert energy crisis. There can also be lowering of the inventory levels or over-utilisation of existing production plants. All these measures would

imply movements along the demand and supply curves but not permanent shifts in these curves.

(B) Long Run Resistances: The oil market in the long run resists by making permanent changes in the overall demand and supply of oil such that an abnormally high or low price returns to the normal price level. This normal level is determined through free play of total demand and supply of oil in the market. If there is a substantial price rise due to production cuts the market endeavours to increase the oil supply and decrease the oil demand.[6]

Demand side Resistances The market resists in the long run by lowering the demand for oil in favour of alternative fuels like natural gas, coal etc. This depends on the price of alternative fuels, which should be low enough to encourage oil substitution. This is called the substitution effect of price rise. Another way of reducing demand for oil is to reduce the energy intensity of G.D.P. i.e. to increase oil use efficiency. Both the ways of reducing oil demand are dependent on the level of technological progress in an economy. Flexibility in the developed countries in lowering oil demand is much greater than that of the developing ones. It is due to their greater capability of technological innovations and changes. Energy related technologies are capital intensive whereas the developing countries face capital scarcity. This explains the inability of the developing nations to improve oil use efficiency or to switch over to other fuels effectively so as to reduce their vulnerability to high oil price. The infrastructure of the petroleum

[6] Supply is positively related to price and demand is negatively related to price.

industry inhibits commercialisation of new technologies.[7] Hence, effective technology transfer to the developing countries and its related benefit of scale economies do not take place.

Supply side Resistances The market resists high price by increasing the oil supply in the long run. The increase in oil supply occurs either by an increase in indigenous production or undertaking exploration in other oil fields, which are different from the conventional sources. The market resists any cartel act to increase prices, by ushering in more competitive supplies. In this regard also, the developed economies enjoy greater leverage than the developing ones. The oil companies of the developed countries have the resources to increase indigenous production of oil as well as explore other oil fields. The developing countries and the less developed ones do not have the required resources for exploration and production of indigenous oil to the extent of self-sufficiency in meeting domestic demand. However, in the present world, finance is globalised and foreign capital cross international borders to finance lucrative oil projects. Further, multinational oil 'majors' are participating in oil exploration in different developing countries. But ambiguity in the investment policies of the governments of the developing countries and the degree of regulation involved in it deter the oil exploration contracts with these majors from materialising. Further these oil exploration and development contracts with the oil majors are not sensitive to market changes and do not have adequate risk sharing arrangements.[8] Often these

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[7] V.R.S. Arni, Emerging Petrochemical Technology: Implications for the Developing Countries, (New York, UN, 1982), UNIDO/IS.350, p. 8.

[8] Kameel. I.F. Khan ed., Petroleum Resources and Development: Economic Legal and Policy Issues for Developing Countries (London, Belharian Press: 1987), pp. 264-65.

contracts are engulfed in legal issues. The increase in indigenous oil production even to the extent of self-sufficiency, may not lead to the decline in oil imports. This is typical of less developed economies. For example, Zaire is an oil producer, which exports virtually all its oil production and imports to meet its domestic needs.[9] This is because the domestic refinery is not designed to process the local grade of crude oil but is compatible with the imported crude. These least developed nations do not have the required resources to re-structure their refineries to process the quality of domestic crude.

II. THE MARKET AFTER OPEC DECISION ON 26 MARCH 1999

The centrality of OPEC to the functioning of the world economy could be analysed from scrutinising of the impact of the Vienna Accord on the market and the consequent responses.

(i) Immediate Impact

(A) Price The immediate impact of OPEC decision was on price of crude oil that moved up from a historical low level of $9.93 per barrel (pb) in January 1999 to a new high level of $30 pb in February 1999. It further increased to $35 pb in September 2000. This price per barrel is above the average oil price of $28 pb during the Gulf–crisis (1991) and only 10 percent less than the average price in the 1973 oil crisis (both prices in current dollars).[10]

Trade in both the physical barrel market and the futures market influences the price level. Even weeks before the agreement was signed,

[9] Ibid, p. 266.
[10] Sheikh Zaki Yamani, Speeches and Statements, (delivered at a conference of The Commonwealth Institute London, on 11 February, 2000) on line wwwcges.co.uk/pro200.htm accessed on 12.5.2003

speculators bid up the price of futures in expectation that the OPEC agreement would correct the glut in world crude oil supply. As the price of the futures increased, the spot price of crude oil also rose. Since most of the purchase of crude oil is based on the spot price of market crude, the average price of traded crude oil worldwide rose from a low level of $9.93 pb in January 1999 to $15 pb by the end of the month. This shows that the market was optimistic about the effectiveness of the decision even before it took place.

(B) Effect on Consumers The consumers of crude oil are the refineries and the petrochemical industries. In the refineries, crude petroleum is refined into petroleum products (heavy fuels, middle distillates and light fuels). The price rise of crude oil was greater than that of the petroleum products. Hence, the profit margin of the refineries decreased. It was also the case of petrochemical industries, where petroleum was used as the feedstock. The increase in the price of oil increased the price of petroleum products in all the countries. Retail price of petrol in the U.S.A. rose from $1.10 to $1.50 for a gallon in February 2000. The wholesale price of home 'heating oil' rose by 4 percent from December 1999 to February 2000. In England, the retail price of diesel increased by 47 percent to peak at $2.12 per gallon.[11] The rise in retail petrol price increased the cost of living of the consumers and decreased their real incomes.

(C) Effect on Producers As crude oil price fluctuates over time, the distribution of profits on each barrel among the oil producers, refiners and

[11] John Cook, Speeches and Statements, (delivered to Sub-committee on Energy and Power, Committee on Commerce, House of Representatives, U.S.A., 9th March 2000), online www oil-gasoline.com/default, asp?id=526 accessed on 2.6.2003.

retailers change considerably. During the price rise of 1999 and 2000, the West Asian share of net profit from a barrel of oil nearly doubled in U.S.A and Europe. Higher crude oil price brings greater proportion of post tax receipts to the oil producers. During the first half of 1999, the retail prices in U.S.A. rose slower than that of crude oil. Here the producer reaped all the benefits of price rise and the refiners and the distributors saw their profit margin squeezed.[12] By contrast in the United Kingdom (UK), where the energy taxes on petroleum products were high, the retail prices increased faster than that of the crude oil. Here the share of profit of the distributors and the governments of the oil importing nations were greater than that of the oil producers.[13] However by February 2000, the distributors of U.S.A gained more than the producers from the oil price rise. This is because shortage of oil was felt in the downstream sector, which caused petroleum product prices to rise faster than that of crude oil.

These were the direct effects of the Vienna Accord on different participants of the oil industry. However, these actors were also subjected to the indirect effects, which resulted from the impact of oil price rise on the world economy and on the economies in which they operated.

(ii)Secondary Effects

(A) Trade Rising oil price caused nominal gains in world trade during second half of 1999.[14] Export values of the oil producing nations rose due to higher price per barrel. Their imports also rose, as the rising export revenues

[12] CGES, Global Oil Report, January-February 2000 online www.cges.co.uk/ accessed on 28.5.2003.
[13] Ibid.
[14] U.N., Economic and Social Survey (ESS), 2000, p. 1.

enhanced their purchasing power and their capacity to import. The import of oil importing countries also rose in nominal terms due to higher cost of an oil barrel. Both imports and exports of many developing countries registered strong growth in 2000, which grew about 16 percent and 15 percent respectively.[15] (See table 4.3) Many West Asian economies also registered robust growth in their international trade boosted mainly by high price of oil during 2000. In most of the oil exporting West Asian countries, the imports grew stronger than the exports.[16]

(B) Balance of payments Even though there had been strong and widespread expansion in world trade in 2000, still large trade imbalances persisted among the major economic groups. Trade deficit of U.S.A. deteriorated to $450 billions at the end of 2000, from $340 billions in 1999. There were trade deficits also in Australia and New Zealand. In Europe the current account deteriorated because of the increased oil bill.[17] The oil importers of Asia had inflated import bills as a consequence of higher oil price and higher oil demand of their expanding economies. Sri Lanka paid Rs.1876 in February, 2000 as compared to Rs.879 for the same barrel of crude oil. South Korea had to pay an additional 3 percent of its G.D.P for oil import priced at $30 pb. In general there are about twenty developing countries including Ethiopia, Cambodia and Lebanon, which have their oil import bills exceeding their debt service payments.[18] This also highlights the nexus between foreign exchange and oil price.

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[15] U.N., World Economic and Social Survey (WESS) 2001, p. 28.
[16] Ibid., p. 29.
[17] Ibid., p. 29.
[18] K.N.Amulya and Reddy, Energy after Rio: Prospects and Challenges (New York, UN, 1997), p. 54.

Trade imbalances resulted from adverse movements in terms of trade. Movements in terms of trade were largely related to oil price rise. Particularly hard hit were the developing and the less developed economies, which imported oil and exported agricultural goods with declining prices in 2000. [19] On the contrary, the terms of trade improved for the oil exporters.

(C) Inflation Inflationary impact of oil price rise was felt in both the developed and the developing countries, though in the former it was on a lower base. In the Euro-zone, the annual increase in the Harmonised Index for consumer prices rose above 2 percent and remained above the upper bound of the target range. It was due to the external impulse throughout 2000, generated by an increase in Euro dominated price of oil.[20] The inflation crept up by 0.5 percent in Germany and by 0.7 percent in U.S.A. The overall inflationary effect of high oil price was severely felt by consumers in the Organisation for Economic Cooperation and Development (OECD) countries. It made OPEC and the oil market a prime concern in the economic policy making in U.S.A. and the European Union.

Inflation in the developing oil importer economies is of cost-push type and is more severe in South Asia's least developed ones. Rising fuel prices contributed to the weakening of their domestic currencies.[21] In India the contribution of oil inflation to the overall inflation was 39.6 percent in March 2000, which further peaked to 58.2 percent in September 2000.[22]

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[19] UN, WESS 2001, n. 15, p. 29.
[20] UN, ESS 2001, n.14, p. 74.
[21] UN, Economic and Social Survey of Asia and Pacific (ESSAP) 2002, p. 41.
[22] Kaushik Bhattacharya and Indranil, Bhattacharya "Impact of Increase in Oil Price on Inflation and Output in India", Economic and Political Weekly (Mumbai), vol. 36, no. 51, 22 December 2001, p. 4735.

Inflationary impact of oil price rise was also felt in oil exporting West Asian countries. Here the inflation is of 'demand-pull type'. High oil revenues placed more purchasing power in these economies, which were not diversified and productive enough to cater to the increasing demand for goods. As a consequence the price in other commodity markets also rose. Inflation in OPEC nations reduced their export revenues in real terms and made them worse off than they were three years ago.[23]

Inflation is beneficial to investment in the developing economies. Lure of high profit margins induce the capitalist class to invest, though the inflation causes pain to the salaried consumer class. On the balance the developing countries as a group recorded an appreciable improvement in their economic performance in 2000 compared to that of the preceding year. This was possible because the Asian economies were recovering after the crisis. The American economy also registered a robust economic growth. If the oil price rise took place when the world economy was in recession, it would have precipitated the downturn.

(D) Growth: The impact of increased oil price gradually reduced the growth of the world economy in 2001 (the impact on growth takes place after a time lag). According to the United Nation's (UN) World Economic and Social Survey (WESS) 2001.

> "This is the reason for the present slow down of the world economy and may be more widespread than the previous oil crisis because of higher oil intensity of output in developing countries and economies in transition".

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[23] Sheikh Zaki Yamani, Speeches and Statements (delivered at a joint conference of CGES and Oil and Gas Journal, Texas (U.S.A) on 9 September, 1999) on line www.cges.co.uk/pr1099.htm accessed on 15.5.2003

The economies of U.S.A., European Union and Japan had slowed down considerably in 2001. The rate of economic growth of developing countries fell from 5.8 percent in 2000 to 2.3 percent in 2001. (Table 4.3) In fact, since 1970s all economic downturns in U.S.A., Europe and the Pacific region were preceded by sudden increase in the price of crude oil. On the contrary low oil price contributed to the revival of the Asian economies after the 1997 crisis, the robust growth of U.S.A. and the budding recovery of Japan. The effect of oil price on economic growth is asymmetric. The economic stimulus resulting from low oil price is significantly less than the depressing effect of high oil price.[24]

(E) Demand The demand for crude oil is a derived demand. It is derived from the demand for the end products in which crude oil is used. The demand for crude oil is a function of price of oil and its products, economic growth and population. The long run price elasticity of demand is very close to unity.[25] Oil demand has a negative correlation with price. This implies that any attempt by OPEC to increase oil revenues through price rise would be resisted by the market by reducing oil demand. Hence, such an attempt would be self-defeating in the long run. How long this 'long run' would take, measures of the existing strength of the cartel to control the oil market. Further oil demand has a positive correlation with economic growth and population. On the balance, the factor that moves oil demand is obvious by the following. The recovery of the Asian economies in 1999 from 1997 crisis facilitated an increase in oil demand. China's oil demand grew by 5.1 percent and in rest of Asia it grew by 2 percent. The stagnation of oil demand in Brazil, Columbia, Ecuador and Venezuela in 1999 was less due to high oil

[24] IEA, n.3, p.4.
[25] CGES, Global Oil Report, July-August 1999, on line www.cges.co.uk/ accessed 28.5, 2003.

price but more due to problems of economic growth and political instabilities. The 1999 oil price rise is the fourth oil shock since 1973. In spite of constant attempt by the developed industrialised nations to reduce their demand for oil, the other factors of economic growth and rising population have offset the negative effect of price on oil demand. According to the IEA, the per capita consumption of oil in the developed countries is higher than that of the developing ones even though their oil intensity per G.D.P. had declined. Oil consumption rose in 1999 by slightly more than 1 million barrels per day (mbpd), with the industrialised nations accounting for about half of the increase.

The oil demand in the expanding economies of the developing nations is much more affected by the requirements of economic growth and the rising population than high oil price. The demand responses to the previous oil price rise are given in (table 4.1).

TABLE 4.1

OIL DEMAND RESPONSE TO REAL OIL PRICE RISE

No.	Period Average	Real oil Price[1] $per barrel	Demand Euro-15 mbpd	Demand USA mbpd	Demand world mbpd[2]	Rate of Economic growth (percentage)
1.	1973-1980	42	14	18	39	3.8
2.	1981-1986	48	12	16	59	3.2
3.	1987-2001	22	13	18	69	3.6

1. OPEC basket price
2. Excluding the former Centrally Planned Economies.

Source: British Petroleum (BP) OPEC and Centre for Global Energy Studies (CGES) cited in. www.cato.org/pubs/regulation/regultn-arch.htm accessed on 14.4.2003

The table 4.1 shows that between the first two periods (1973-1980 and 1981-1987) the world oil demand has not proportionately decreased

with the increase in real oil price. In the developed countries, for a price rise of 14.3 percent, demand decreased less than proportionately. In U.S.A it decreased by 11 percent. The supply responses to oil price rise of 1999-2000 are shown in table 4.2.

TABLE 4.2

OIL DEMAND

	1999 (mbpd)	2003 (mbpd)	Rate of Growth (percentage)	Average demand 2001-2003 (mbpd)	Rate of growth over 1999 (percentage)
OECD	47.7	47.9	0.42	47.7	0
North America	23.8	24.1	1.2	23.9	0.4
Western Europe	15.2	15.3	0.6	15.2	0.0
Pacific	8.7	8.5	2.2	8.5	-2.2
Developing countries	18.6	19.4	4.3	19.1	2.68
FSU	4	4	0	3.9	-2.5
Other Europe	0.8	0.7	12.5	0.7	-12.5
China	4.2	5.0	19.4	4.8	14.28
Total world demand	75.3	77.0	2.25	76.2	1.19

Source: Adapted from OPEC cited in Sept-Oct OPEC Bulletin, vol. 33, no. 8, p. 44.

The rate of growth of world oil demand from 1999 to 2003 was 2.2 percent, for the OECD and the developing countries it was 0.42 percent and 4.3 percent respectively. The rate of growth of average oil demand (period 2000-03) over that of 1999 was 1.19 percent for the OECD and the developing countries it was zero percent and 2.68 percent respectively. The oil price had risen by 37.5 percent and 2000 respectively. (Table 4.2)) *High*

oil price does not sufficiently explain the slow growth in oil demand. The effect of economic growth on oil demand has to be accounted for. The world economic growth went for a downturn in the second half of 2000.[26] The economies of U.S.A., Japan, and European Union had slowed down considerably during the same period. They also induced deceleration in the developing economies (Table 4.3).

TABLE 4.3

SELECTED INDICATORS OF GLOBAL ECONOMIC CONDITIONS, 1998-2002

	1998	1999	2000	2001[a]	2002[b]
Economic growth (percentage change in GDP)					
World	2.3	2.9	4.0	1.3	1.5
Developed economies	2.5	2.7	3.5	0.9	0.8
Japan	-1.1	0.7	2.4	-0.5	-1.2
United States	4.6	4.0	4.1	1.2	0.7
European Union	2.6	2.3	3.5	1.6	1.5
Developing economies	1.6	3.5	5.8	2.3	3.5
Economies in transition	-0.7	3.0	6.0	4.3	3.8
Growth in volume of trade (percentage)					
World[c]	4.2	5.4	12.4	1.0	2.1
Developed Economies Export	3.9	5.2	11.6	-0.3	0.5
Import	5.9	7.7	11.5	-0.3	1.4
Developing Economies Export	4.9	4.7	15.0	3.4	4.5
Import	-1.4	1.7	16.1	5.0	6.5
Commodity prices (annual percentage change; US dollar terms)					
Non-fuel primary commodities	-14.7	-7.0	1.8	-5.5	1.7
Oil	-32.1	37.5	56.9	-14.0	-23.7
Inflation rate (percentage)[d]					
CPI in the developed economies	1.5	1.4	2.3	2.3	1.3
CPI in the developed economies	10.5	6.8	5.9	6.0	5.3

Source: United Nations, World Economic Situations and Prospects 2002 (January 2002); IMF, World Economic Outlook (Washington, December 2001) and International

[26] UN, ESSAP 2002, n.21 , p. 6.

Financial Statistics, vol. 55, no. 2 (February 2002); The Economist, various issues; and national sources.

cited in: UN, Economic and Social Survey of Asia and the Pacific 2002

a. Preliminary estimates.
b. Forecast
c. Exports and imports (goods and services)
d. Developed and developing economies ratio weighted at purchasing power parity.

The demand for oil is influenced more by economic growth than oil price. This reflects the centrality of oil and oil fuels in the functioning of world economies. At best, it can be said that the oil price reduces oil demand by lowering economic growth. The world economies are still not capable of proportionately reducing oil demand at a given level of economic growth, as a resistance to high oil price. The oil demand would take a longer time than anticipated, to have unit price elasticity.

(F) Supply The supply of oil in the long run has a positive correlation with oil price and investments made to augment oil supplies. Another factor that is crucial is the investors' confidence in the stability of oil price. High fluctuations in price, cast uncertainties in the oil market and deter investments in oil industry.

TABLE 4.4

OIL SUPPLIES RESPONSE TO REAL OIL PRICE RISE

No.	Period Average	Real Oil Price $ Per Barrel	OPEC output (mbpd)	Non-OPEC output (mbpd)	Total output (mbpd)	OPEC share (percentage)	Non-OPEC Share (percentage)
1.	1973-1980	42	30	21	51	49	34
2.	1981-1986	48	19	27	46	33	46
3.	1987-2001	22	27	32	59	39	40

1. OPEC Basket price
2. Excluding NGLS
3. Excluding the Former Soviet Union

Source: Adopted from OPEC, BP, and CGES cited in www.cato.org/pubs/regulation/regultn-arch.htm accessed on 14.4.2003

Table 4.4 gives supply responses of the world to previous oil price rise. There is a perceptible increase in oil supplies especially from the non-OPEC producers since 1973 oil shock. When oil price falls, the oil producers choose to stay in production even if profit margins are thin or when there are loses. The producer can bear losses as long as the average variable cost is covered and the loss is equal to the value of fixed cost.[27] This is to ensure security in oil supplies.

TABLE 4.5

OIL SUPPLY

	1999 (mbpd)	2003 (mbpd)	Rate of Growth (percentage)	Average supply 2001-2003 (mbpd)	Rate of growth over 1999 (percentage)
OECD	21.3	22.3	4.6	22	3.28
North America	14.1	14.8	4.7	14.5	2.83
Western Europe	6.6	6.8	3.0	6.75	2.27
Pacific	0.7	0.7	0	0.75	7.14
Developing countries	10.8	11.6	7.4	11.25	4.16
FSU	7.5	9.7	29.3	8.82	17.6
Other Europe	0.2	0.2	0.0	0.2	0.0
China	3.2	3.4	6.25	3.3	3.12
Processing gains	1.6	1.8	12.5	1.7	6.25
Total non-OPEC	44.6	48.9	9.6	47.2	5.8
OPEC NGLs supply	3.2	3.6	12.5	3.47	8.43
Tot non-OPEC supply and OPEC NGLs	47.7	52.5	10.0	50.7	6.70

Source: Adapted from OPEC, cited in OPEC Bulletin, vol. 33, no.8, Sept-Oct, 2002 p. 44.

The supply responses to oil price rise in 1999-2000 was similar. (Table 4.5) The market also endeavoured to diversify oil supplies. There was a renewed interest in Central Asian oil fields because access to Central

[27] A.Koutsoyannis,Mordern Micro Economics,(London: Macmillian Press, 1975),p. 158

Asian oil fields was expected to balance off OPEC.[28] North sea oil exploration work has increased. The number of oil wells drilled increased from eighty in 1999 to hundred and seven in 2000 and hundred and twenty-seven in 2001.[29] U.S.A has recently tied up with Russia to augment the Russian oil export in order to diversify its import sources. [30]

(G) Investment Level and destination of investments in the oil exploration and production capacity would determine who would supply the future increment in demand. The degree of confidence in the sustainability of price rather than the actual price level determines the amount of investment during a period. Without new investments, non-OPEC supply would certainly fall in the long run as the oil industry needs to add around 2 million barrels per day of new production capacity each year to standstill.[31] Although drilling activity was depressed in late 1999 and oil companies' budget was slow to respond to high oil price, yet there was massive increase in non-OPEC production capacity.[32] This was because most of the oil fields that were planned in more propitious times finally materialised. However, production in the most vulnerable fields of U.S.A and the North Sea, where there were large cuts in upstream capital expenditure in 1998, continued to decline in 1999. According to the Investment Statistics: Oil and Gas Activity, 4th quarter 1999, the total investments in exploration are estimated to be at 7.1 billions for

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[28] Satish Chandra, "Central Asia The New Great Game", Journal of Indian Ocean, vol. 10, n. 1, April 2002, p. 56.
[29] "North Sea Survey:Continuing Appeal of Grey Waters" Petroleum Economist (UK), vol. 69, n. 4, April 2003, p. 10.
[30] Victor and Victor, n.9, p. 47.
[31] CGES, Global oil Report, November-December 1999, on line www.cges.co.uk/01 accessed on 1.6.2003.
[32] Ibid.

2000.This is an increase of 3.4 billions compared to that of 1999, which was estimated to be 5.2 billions.

(H) Alternative fuels: The market also resisted to oil price rise by increasing the supply of alternative fuels. Natural gas is emerging as a close competitor to oil. Natural gas production has significantly increased due to high oil price and the choice of cleaner fuel. The increase is more in case of countries, which are becoming increasingly dependent on foreign oil and at the same time have abundant natural gas reserves, for example Australia.

III. PRESENT VULNERABILITY OF NATIONS TO OIL SHOCKS

(i) Developed Nations Since the first oil shock in 1973; the leading economies were constantly trying to mitigate the effects of high oil price (engineered by the actions of OPEC). They had endeavoured to decrease demand by increasing oil use efficiency and by substituting oil by other sources of energy. A major long-term challenge faced by U.S.A. and other leading economies is to break the link between economic growth and oil consumption. They tried to explore new sources of oil and also tried to increase the supply of alternative fuels. The degree of success achieved by the developed countries in mitigating the adverse effects of high oil price could be estimated by a close examination of U.S.A. after the Vienna Accord.

U.S.A. after March 1999 Price Rise The oil price rise of 1999-2000 underscored U.S.A.'s vulnerability to imported oil supplies.[33] On 22 September 2000, President Bill Clinton authorised the release of 30 million

[33] Gawdat Bahgat, "Managing Dependence: American- Saudi Oil Relations", Arab Studies Quarterly, (Washington D.C), vol. 23, no. 1, winter 2001, p. 1.

barrels of oil from the Strategic Petroleum Reserves (SPR) over 30 days in an attempt to bolster U.S.A.'s oil supplies and to alleviate possible shortage of 'heating oil' during the upcoming winters. In 2000 U.S.A.'s import of 10.9 million barrels per day was 57 percent of its total demand.[34] Its oil import was rising since 1980s due to the increasing gap between domestic oil production and consumption. The domestic production is projected to grow at 0.8 percent between 1998 and 2020 while the consumption is projected to grow at 1.6 percent.[35] In 1999, the SPR held 567 million barrels of crude oil. This could replace only 59 days' worth of net imported petroleum as compared to 493 million barrels reserve in 1985 which could replace 115 days' worth of net petroleum imports.

Pressure from the Consumers Increasing price of petrol, heating oil, gasoline and reduced profits of oil refineries and petrochemical industries had generated unrest among the consumers. Rising oil price became an election issue. Al Gore, the Vice-President of Clinton Presidency, contested for the presidential post. At that time he was likely to lose if in U.S.A. the petrol prices hit $2.00 per gallon.

Pressure from the consumers was so intense that U.S.A. pressurised OPEC to increase production. In March 2000, the House of Representatives passed a bill urging the administration to cut off aid and military sales to the members of OPEC.[36] Similarly, in July 2000, the Senate Anti-trust Sub-

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[34] EIA, Country Profile: United States of America, October 2000, on line at www.eia.doe.gov. accessed on 1.6.2003.
[35] EIA, Annual Energy Outlook 2000, (Washington D.C:United State Government Printing Office (USGPO), December 1999).
[36] Tom Doggestt, "House Approves Bill to Pressure OPEC", Reuters (London), 22 March 2000.

committee approved a bill to initiate anti-trust litigation against OPEC for fixing prices and setting production levels for crude oil.[37] All these reflect the uneasiness in U.S.A. over the oil price rise and its existing vulnerability to the adverse effects of high oil price. Their dependence on oil has not reduced substantially to mitigate the effects of oil price rise. This dependence of the developed countries strengthens the cartel of the oil exporters.

(ii) Developing Countries There is no denial about the existing vulnerability of developing nations to oil shock. Despite massive capital investments many of the newly industrialising developing countries in Asia are or have become energy (oil) import dependent.[38] Their future resistance to oil price rise is also bleak, due to lack of energy planning and energy efficiency policies. There is a limited scope for oil substitution in the developing countries. Oil substitution investment projects tend to be at a disadvantage as compared to other development programmes of poverty alleviation and unemployment in competing for the scarce capital. However, successful oil substitution had been carried out in the industrial and the electricity sectors in some countries like India.[39] But in most of the developing countries, it is unlikely that significant oil substitution would materialise in the transport sector. Further decentralised renewable energy technologies have relatively limited potential for oil substitution.[40] They are generally not a cheaper substitute for oil. The capital necessary to develop,

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[37] "US Senate Subcommittee Approves Bill to Sue OPEC", Middle East Economic Survey, vol. 43, no. 31, 30 July 2000 p.A-6

[38] Economic and Social Commission for Asia and Pacific (ESCAP), Energy Efficiency: Conservation and Efficiency Centre in Asia, (New York, UN, 1997), p. iii.

[39] Oil Substitution Task Force Report, Oil Substitution: World Outlook to 2020, (New Delhi, 1983), Task Force constituted by World Energy Conference Conservation Commission, p. 260.

[40] Ibid, p. 26,

transport and utilise alternate sources of energy is relatively large as compared to the capital formation in the developing countries.

The subsidised energy prices have led to wasteful consumption and reduced the need for promoting energy use efficiency. Difficulties in raising capital investment needed for natural gas energy system (i.e. long distance transmission lines and local distribution networks) could slow the shift to natural gas in the developing world.[41] Equally difficult is to make the technology changes to facilitate consumption of alternative fuels.

Often the construction of pipelines for transportation of natural gas gets blocked in geopolitical issues. In case of Iran-India gas pipeline, which has to pass through the territory of Pakistan, the project has being delayed due to deliberations on Pakistan's hostility towards India. This pipeline with the capacity around 100 million cubic meters would originate in Bandar Abbas. It would pass through the cities of Minals and Iransualsar and would enter Pakistan in the Panjkoor area. The pipeline would enter India in the Viavea area (Gujarat) and would pass through Radhanpur in Ahmedabad, from where it would be extended to Calcutta.

India after 26 March, 1999 Oil Price Rise

India imports around 70 percent of its domestic oil demand. It is a growing economy with an increasing population. It is projected to become the seventh largest consumer of energy within a decade. At the same time India's indigenous oil and gas reserves are not expected to last beyond

[41] UN, n. 29, p. 78.

2014-2016 at current levels of consumption.[42] So India does not have many policy options in the long run than to increase oil use efficiency and diversify sources of import of natural gas. It also needs to develop other sources of energy.

Due to the high oil price, India's import bill of crude oil and petroleum products in 1999 was estimated to be 30 percent higher than that of the previous year and touched $9.8 billions against $7.5 billions in 1998-1999.[43]

Although the burden of high oil price was not passed on to the consumers (due to the administered price mechanism), the combined oil pool deficit exerted pressure on government finances, affecting the macro economic indicators and inflation in 1999. [44] In Indian context, the International Monetary Fund (IMF) report 2000 indicates that a sustained $5 pb increase in price of oil leads to 1.3 percent point increase in inflation after a year and reduces the annual G.D.P growth by 0.1 percent points. In case of administered prices the impact of price rise is said to peak after eight months.[45] The Indian government responded by an increase in the administered prices of petroleum products during September 2000. In this way it partly passed on the increase in price of oil to the consumers.

The process of transmission of oil price rise to other commodities occurred in two phases.[46] The first phase occurred within the first quarter of the oil shock where the price rise in other commodities was small and was

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[42] Shebonti Ray Dadwal, "The Current Oil Crisis: Implications for India", Strategic Analysis (New Delhi), vol. 24, no. 2, May 2000, p. 398,
[43] "Oil Policy Imperatives", Monthly Commentary on Indian Economic Conditions (New Delhi), vol. 16, no. 3, October 1999, p. 9.
[44] In Administered Price Mechanism prices of petroleum products are regulated and are not at parity to international prices of crude oil.
[45] Bhattacharya and Bhattacharya, n.22, p.4735.
[46] Ibid, p. 4735.

based on expectations. The second phase started when the production cycle of the economy was complete and the prices of other commodities rose steeply. The time lag involved was five to seven months. During this period 3.8 percent point inflation in mineral oil, *ceteris paribus*, translated into additional 0.2 points inflation in other commodities. Inflationary tendencies were known to persist for two years though with decreasing magnitude.[47] There was also a fall in output as shown by a decline in Index of Industrial Product (IIP). The negative impact on output peaked within one quarter of rise in oil price and persisted for three more quarters. Recovery started after one year.

Two factors have contributed to India's rising energy demand. One was the promotion of energy intensive industries in pursuit of self-sufficiency. Second was the shift from traditional to commercial sources of energy in the rural zone. Energy subsides have led to wasteful consumption. India's poor energy efficiency track record is related to the lack of comprehensive and coherent energy policy.[48]

Conclusion

The discussion in this chapter is converging to some broad conclusions. The theoretical overview of market responses and resistances shows that oil market tries to resist like any other market to cartel monopoly. However an examination of oil markets after the Vienna Accord reveals that the capability of the market to resist cartel act of production cut to firm oil price is circumscribed by certain fundamentals of the oil market. These are uneven spatial distribution of oil reserves, different cost of production in them

[47] Ibid, p. 4740.
[48] ESCAP, n. 38, p. 27.

and limited substitutability of different varieties of oil. These constrain increase in competitive oil supplies. The positive correlation between economic growth and oil demand and the centrality of oil in the functioning of the world economy, constrain reduction in oil dependence. The influence of high economic growth on oil demand is larger than the effect of high price of oil. High oil price can only reduce oil demand by slowing economic growth. A closer examination of U.S.A. after the OPEC decision of 26 March 1999 exhibits its existing vulnerability to high oil price, intense pressure from the consumers and the unease in the political circle over OPEC's hold in the oil market. These findings certify the cartel capability of OPEC. The position of developing countries like India after March 1999 oil price rise deteriorated as expected. The future prospects of developing countries to mitigate the adverse effects of high oil price also appeared bleak.

The OPEC decision of March 1999 was effective in firming up the oil price though oil revenues of OPEC declined in real terms due to high inflation. It has also demonstrated to the world the centrality of OPEC in controlling oil price and the indispensable nature of oil in the functioning of the world economy.

CHAPTER 5

CONCLUSION

This work attempted to re-evaluate OPEC as a cartel in the light of its decision on 26, March 1999. A cartel is a group of sellers operating together to regulate the over all supply in the market in order to keep prices above the competitive levels. A cartel is known to carry the seeds of its own destruction. However, the cartel stability is in part dependent upon the assumptions one makes concerning the structure of the market and the degree of knowledge shared by the cartel members.

Chapter one reviewed the literature modelling the oil market and the OPEC behaviour. It also evaluated whether the oil market in the 1990s supports cartelisation in general and OPEC in particular. Further, it set certain premises to evaluate the cartel potential of OPEC.

Chapter two evaluated the effectiveness of the OPEC quota policy. It traced the evolution of OPEC quota policy. It briefly narrated in three phases the history of quota decisions and their impact on the oil market. It made by an evaluation of the effectiveness of the quota policy that included causes and consequences of the quota violations and other merits and demerits of the quota policy.

Chapter three examined the contextual background and the details of the decision. It further explored the issues and concerns of the individual member countries involved in the decision.

Chapter four studied the effectiveness of the Vienna Accord. It studied the impact of the decision in the theoretical framework of how the oil market responds and resists the production cuts. It also examined the present vulnerability of nations to the oil crisis. This was to examine if the oil market has become competitive enough to resist the OPEC cartel.

This chapter sums up the broad inferences of the previous chapters. The oil market in the 1990s, even though characterised by more suppliers is far from being competitive. There are great uncertainties surrounding it, which violate the basic assumption (of perfect knowledge of market conditions to all participants) of the competitive market. These uncertainties are due to the working of the futures market (which adds a speculative dimension), rising environmental awareness (with uncertain levels of carbon tax), and fluctuating investors' confidence. The emergence of regional trading blocs further distorts the working of the 'free market mechanism' in the oil market. Thus the oil market in the 1990s still cannot resist the cartels.

The composition of the market implied a definite pattern of trade as determined by the refinery type and crude oil exports of the different regions. Any supply disruption or divergence would involve a lot of restructuring of the oil refineries. This imparts a character of differentiated oligopoly to the oil markets where sellers command a certain degree of customer loyalty. The pattern of trade has indeed shown consistency over the years. This re-enforces the argument that the OPEC cartel has not lost leverage in the changed oil market of the 1990s.

A review of literature suggested that OPEC is, at present, rejected as a cartel. This conclusion is made on the criterion that OPEC is not dominant in the oil market owing to its minority market share. However for a strategic natural resource like oil with inelastic demand and supply in the short run the dominance cannot be evaluated on the basis of market share only. The dominance in the market of the strategic natural resources (especially oil) is determined by the capability of the producers to avert crisis (both of supply and demand). The supply crisis can only be mitigated in the short run if the producer has excess production capacity. In case of demand crisis it could only be managed by cutting its production as well as compel other producers to comply.

OPEC members have this capability owing to the unique combination of low cost of production, huge reserves and excess capacity. Further this ability is concentrated in Saudi Arabia. It enables Saudi Arabia to steer the OPEC in its way in case of deadlocks among the members. This makes the decision- making process easier and re-enforces cartel cohesion

Even though OPEC production market share is roughly 40 percent yet this could be significant as it belongs to a single entity i.e. one producer. OPEC may have a minority market share but it is a strategic one as no other oil producer outside OPEC has a comparable share. OPEC is more dominating as an exporter rather than as a producer.

OPEC derives its cartel strength due to its immense oil reserves, excess capacities, lowest costs of production and dominant export

capabilities. However, OPEC members are disproportionately dependent on the oil revenues and have huge budgetary obligations. These have often prevented the OPEC members from effectively and wisely deploying their cartel potential.

The OPEC quota policy has been the principal tool with which it sought to regulate the oil market to achieve its objectives. The quota policy has given OPEC a true 'cartel feature' as defined by the economic theory. According to the economic theory the cartel typically embarks on a production regulation programme to achieve its objective. This also helps the cartel to keep out competition in the market (that drives the price down) by embarking on a market sharing arrangement.

During the period 1982 to 1986 the quota policy was predominantly used as a price targeting strategy. From 1986 to 1990 it was largely used to defend the OPEC market share. Post Gulf war period (1992 onwards) witnessed inconsistency in the objectives of the quota policy. The OPEC quota policy had faced problems at both the decision-making and the implementation levels. The conflicting priorities of different OPEC members had created deadlocks over the individual quota allocations. Nevertheless, OPEC had never ceased to demonstrate its ability to come up with coherent decisions, which had significantly influenced the oil market. Further there had been frequent changes in OPEC's objective and therefore in the usage of the quota policy. The OPEC quota policy in relation to its objective had been effective, in spite of the quota violations. Even though all its quotas

had been honoured more in breach than in observance yet by the end of 1989 the market related prices were indeed very close to OPEC's target.

There had been different nuances to quota violations. Quota violations were not only because of 'the free rider problem' of the typical cartel theory but were also rooted in the existing market conditions, individual members' political and economic limitations and compulsions and their notions of a 'fair quota'. The threat of quota violation still looms large on the effectiveness of the quota policy.

An outstanding success of the quota policy is that the OPEC had survived the oil crises of 1986,1993 and 1999. OPEC had not only saved itself but also had shown its cartel influence on the oil price, at least in times of deep crises. Even though its direct influence on oil price is limited yet its merits lie in 'latent benefits'. Often benefits are more significant in terms of 'chaos or chaos averted' than 'perceived gains'. OPEC quota policy had given anchorage to the oil price. The oil price owes both its reference and fluctuations to the happenings in OPEC. Oil industry is indebted to OPEC for its healthy growth. Not only had OPEC averted the chaos of price war but had also made up for the supply disruptions in any quarter. It can avert too high or too low prices both of which are inimical to the oil industry.

The OPEC decision on 26 March, 1999 was evaluated as a case study of OPEC cartel strength in the fundamentally changed oil market of 1990s. The key players were Saudi Arabia, Venezuela, Iran, Norway, Mexico, Oman and Russia, which were the prime movers of the Vienna

Accord on 26th march 1999. This OPEC decision of the production cut of 2.1 million barrels per day (mbpd) was to remain in force for a period of one year, with effect from 1st April 1999. The remarkable thing about this decision was that it secured cooperation of the non-OPEC members namely Russia, Norway, Mexico and Oman. This feature is typical of collusive oligopoly market where sellers recognise their interdependence in the market and collude to reap monopoly industry profit. The decision was taken under the leadership of Saudi Arabia. It accepted the largest reduction and agreed to implement it a month earlier than the cartel.

Politically changed position of Iran and Venezuela gave them a voice of dissent. Iran had been overstating their production in 1997 to set a baseline for future cuts. It reported production of 3.9 million barrels (mb) instead of 3.6 mb it had been actually producing. It believed that it would leave room for potential cuts without financial losses.

Venezuela's stand was that OPEC decision should be equitable to all members. In March, 1998 Venezuela was saddled with largest percentage of production cuts while the Iranians walked away taking no pains. At that time Venezuelan economy was in a very bad shape and badly needed higher oil revenues. The price rise as a consequence of March 1999 decision was only 13 percent where as decrease in volume of output was about 19 percent. It was losing heavily to Mexico, the second largest regional producer that fared handsomely from the decrease in production.

The deal was imperfect for Venezuela, whose economy shrank by 10 percent in the first stage.

Also there were uncertainties over the flow of Iraqi oil in the market amidst talks of lifting of United Nations (UN) sanctions and approximately 350-400 mb of high inventories. This would tend to depress prices. This could have affected compliance.

However, Saudi Arabia could effectively discipline the recalcitrant Iran who had been consistently violating its quota and operated at full capacity. Further Saudi Arabia disciplined the non-OPEC producers as well. It produced at mid 1997 level, in spite of March 1998 cut. Saudi oil policy, despite damaging itself with low oil prices, was effective in deterring investment in exploration and production, particularly rush to the Caspian Sea and Central Asia as well as destroying many independent producers. On one side, non-OPEC producers were shutting down the wells from Oklahoma (USA) to West Africa, while on the other side most oil investors were cutting capital expenditure on exploration and production by 25 to 35 percent. Taken together the above trend was likely to have eliminated approximately 5,00,000 barrels per day, from non-OPEC producers in 1999 alone.

The Vienna Accord was signed in spite of the apparent irreconcilable positions of some of the OPEC members. It was signed to deliver the oil market from the crisis in which the price dipped to the historical low levels of $9.93 per barrel in January 1999. In this respect, it followed the precedent

set by the Geneva Conference in August 1986 and the Bali Conference in November 1994. Political factors, namely the change of governments of Iran and Venezuela and the visit of the U.S.A's Energy Secretary to Saudi Arabia were largely instrumental in cementing the deal. However, political influence is not an exceptional or accidental factor in the making of this decision. The cohesion in OPEC had often occurred through political events. Nevertheless, it should not undermine the solidarity in OPEC due to the fact that the OPEC members are themselves political heads of their respective States. The same old divergence of interests, issues and concerns among the OPEC members persisted behind the Vienna Accord.

Like any other market the oil market tries to resist cartel monopoly. However, an examination of the oil market after the Vienna Accord revealed that the capability of the market to resist cartel's act of production cut, to firm oil price, is circumscribed by certain fundamentals of the oil market. These are, uneven spatial distribution of oil reserves, different costs of production in them and limited substitutability of different varieties of oil. These inhibit increase in competitive oil supplies. The positive correlation between economic growth and oil demand and the centrality of oil in the functioning of the world economy, constrain reduction in oil dependence. The influence of high economic growth on oil demand is larger than the effect of high price of oil. High oil price can only reduce oil demand by slowing the economic growth. A closer examination of U.S.A. after the OPEC decision of 26 March, 1999 exhibited its existing vulnerability to high oil price, intense pressure from the consumers and the unease in the political circle over

OPEC's hold in the oil market. These findings certify the cartel capability of OPEC. The position of developing countries like India after March 1999 oil price rise, deteriorated as expected. The future prospects of the developing countries to mitigate the adverse affects of high oil price also appeared bleak.

The OPEC decision of March 1999 was effective in firming up the oil price though the oil revenues of OPEC declined in real terms due to high inflation. It has also demonstrated the centrality of OPEC in controlling oil price and the indispensable nature of oil in the functioning of the world economy.

OPEC has the potential of a cartel and has often effectively deployed it to deliver the oil market from deep crisis. It has been more effective in case of supply crisis (shortages). In case of demand crisis (oil glut), it could have equally been effective by cutting oil production significantly. However, the huge budgetary obligations of OPEC members and their disproportionate dependence on oil revenues have deterred them from unilaterally shouldering this burden. Further, there were threats that non-OPEC members would gain at their expense, leaving the OPEC members having lower oil price and lesser production. This has often compelled the members to violate their quotas in case of production cuts.

With immense oil reserves, lowest cost of production and excess capacities OPEC members, especially Saudi Arabia, have the capacity to secure compliance to production cuts (to defend oil price) by both the OPEC

members and the non-members. They can threaten to ruin the recalcitrant producer through price war. There also is, in the price war, an implicit punishment mechanism (alleged to be missing) for the quota violators within OPEC. Retrospectively it had been used often by Saudi Arabia.

Saudi Arabia successfully waged a price war in 1985 to force other oil producers to stop 'free riding' on its production cuts. The oil price fell within few weeks and Saudi Arabia regained the market share it had earlier lost to the non-OPEC producers. Besides, they agreed to reduce oil production. Similarly in 1996-1997, it precipitated the price fall to discipline Iran, Venezuela, Norway and Mexico. The measures were tough but effective.

However, OPEC (Saudi Arabia) had used its stick less frequently against the non-OPEC defaulters because of its own budgetary compulsions. Price war affects the economies of the OPEC member nations, critically dependent on the oil revenue, before it punishes the defaulters. So the diversification of the economies would help the OPEC members to strengthen their hold in the oil market. Besides, it would not have to succumb to its short-term interest of high oil price, which undermines future profits

Between the formation and survival of OPEC as a cartel, is the process of restructuring. During the last few years, the decision-making process has coalesced round a core of major producers (Saudi Arabia, Kuwait, Iran, Venezuela). The process of decision-making has also changed

from concerted action within OPEC to 'side talks' among the dominant few. The other members have been increasingly marginalised. Besides, the new realities besetting the oil industry had brought a behavioural change in OPEC, which now seeks to strengthen the leadership of all oil producers OPEC or non-OPEC. This has led to the formation of an ad-hoc cartel. The behavioural and structural transformation of OPEC could be seen in the withdrawal of small producers (Gabon and Ecuador) from OPEC and the co-opting of the dominant non-opec oil producers. The signing of the historical Vienna Accord is the culmination of these trends. The 'OPEC Conference' in Vienna served merely as a cover for the ratification of agreements reached in The Hague among Saudi Arabia, Venezuela, Norway and Mexico (latter two are the non-OPEC members) and preceded by the deliberations within the Gulf Cooperation Council (GCC) and Iran.

Some of the other players in the oil market have also gained through OPEC. The energy producers (outside OPEC), their financers (banks and corporations) need OPEC to keep oil prices at a level to prevent them from bankruptcy. In the aftermath of the OPEC production cuts (26 March, 1999) the distributors of U.S.A by February 2000 were gaining more than the producers from the oil price rise. This was because the shortage of oil was felt in the downstream sector, which caused petroleum product prices to rise faster than that of crude oil. Besides, both the consumers and the producers of oil need OPEC to stabilise the costs and supplies of oil. Thus the opinion of one OPEC minister that if "one OPEC is dead another should be created" reflects not only the sentiments within OPEC but also that of the world.

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