CHAPTER EIGHT
OIL PRICE PROSPECTS IN THE NINETIES

8.1. Review of Current Situation

In this chapter an attempt is made first to analyse factors likely to influence demand for and supply of oil during the Nineties. These factors will eventually influence oil prices which in turn will significantly affect the GNP growth rates and other variables not only in the OPEC Members but also in the rest of the world. OPEC, an influential supplier of oil in the world markets has an important role to play during the last decade of the twentieth Century.

In order to understand the challenges OPEC will be facing in the 1990s, it is necessary to briefly review the post-1986 oil collapse. It is observed in Graph 8.1, that the year 1986 marked a turning point in the oil market. The lower oil prices and resumption of economic growth in developed market economies and developing countries*, led to a reversal in the downward trend of oil demand. For instance, the total world oil consumption increased from 55.54 million b/d in 1985 to 60.57 million b/d in 1989\textsuperscript{2}, while the call on OPEC oil rose from 15.44 million b/d in 1985 to 23.34 million b/d in 1989\textsuperscript{3}. This resulted in diminishing the excess capacity of OPEC Countries. Assuming that demand for oil continues to tread on a similar path, the question arises as to the ability of the OPEC Members to expand production capacity.

Prior to the Persian Gulf crisis, production capacity was placed at 27-30 million b/d with demand reaching 24 million b/d. According to OPEC’s estimates $80 billion needs to be invested upstream in OPEC Countries by the year 1997\textsuperscript{4}. In order to meet the needs of industrialized countries by the turn of the century, OPEC should raise its production capacity substantially to around 33 million b/d, since it operates on a safety margin of 82-85 per cent utilization\textsuperscript{5}. To achieve this goal, funds must come through steady prices of oil and/or joint venture investments, loans or collateral support from rich consumer countries.

* The economic growth for the OECD countries stood at 3.4 and 2.6 per cent in 1989 and 1990 respectively. The figure for DCs was at 3.6 per cent\textsuperscript{1}.
The following are among the important factors likely to affect the oil prices in the Nineties:

a] World Economy Growth
b] Energy and Oil Intensity,
c] Share of Oil in Energy Mix,
d] World's Crude Oil Reserves, Share of OPEC and Production Capacity,
e] Major Consumers' Oil Policies,
f] Major Producers' Oil Policies,
g] Environmental Considerations.

Each of these factors will have some bearing on emerging oil prices although relative significance may vary at different points of time.

(Graph 8.1)
WORLD CONSUMPTION OF REFINED PRODUCTS [1970-89]

Source: See References 2 & 3 of Chapter 8
a] World Economy Growth

The world achieved an economic growth rate of 4.4 per cent in 1988; it slowed down to 3.4 per cent, and 2.5 per cent respectively in 1989 and 1990. OPEC estimates that the world average annual growth rate during nineties (outside former Centrally Planned Economies) will be around 2.7 per cent.

The lower growth rate compared to that realised during the Eighties is likely to depress oil prices during the Nineties.

b] Energy And Oil Intensities

In response to the 'First and the Second Oil Shocks, energy and oil intensities** in the OECD countries began to fall. The industrialized countries embarked on extensive investments to increase efficiency of fuel utilization, with a view to reducing the amount of energy input required per unit of industrial output. As Graph 8.2 & 8.3 indicate, over the period 1974-90 energy and oil intensities in the OECD area decreased by almost 30 per cent and 40 per cent respectively. In other words, during the said period, industrialized nations were in a position, to reduce the amount of oil consumption per $1000 of GDP from 1.98 barrels to 1.20 barrels. In the developing countries on the other hand, due to low consumption base, extreme lack of flexibility in switching to alternative fuels, and less efficient energy consumption technologies, energy intensity showed an upward trend during the same period.

The energy and oil intensities are likely to witness a declining trend in the OECD regions. For instance, it is estimated that conservation measures in OECD countries would reduce the energy and oil intensities in the next 15 years by about 20 per cent and 30 per cent respectively. The developing countries also are likely to reduce their oil consumption by about 15 per cent through energy conservation measures. It is estimated that due to the application of efficient technology in the developing countries also, the intensities will fall although in a less pronounced manner. This factor therefore is likely to exert a downward pressure on oil prices.

* Center For International Energy Studies, Erasmus University, anticipates 3 per cent average annual growth rate over previous decade. Al-Fathi puts that figure in the range of 2.5-3.0 per cent annually.
** Energy intensity is the total primary energy consumption per $1000 GDP. Oil intensity is the quantity of oil consumption per $1000 GDP. A high energy intensity indicates low efficiency in energy use, while a low intensity reflects high efficiency.
(GRAPH 8.2)
COMPARISON OF OIL INTENSITIES
OECD & DCs [1974-90]

Source: See Reference No. 19 of Chapter 8.
The share of coal in the world energy supply declined from 60 per cent in 1945 to 30 per cent in 1975. One of the reasons was higher cost of coal extraction, the most important component of this cost being labour cost. The countries with lower-wage rates (e.g., India, Taiwan, South Africa, and Poland) could produce lower-cost coal from deep mines but others could not afford. The share of oil in the world energy, on the other hand, increased dramatically from 23 per cent to 46 per cent during the same period\textsuperscript{14}. Lower oil prices discouraged technological development for the utilization of gas and innovations for other forms of energy. This trend however was reversed as oil became expensive. Share of oil, after having reached a maximum of 47.30 per cent in 1973, was reduced to 46.40 per cent in 1980 and stood at 40.95 per cent in 1990.

Gas accounted for 19.85 per cent of primary energy consumption in 1990\textsuperscript{15}. It is made available to distant regions, by rail and road transport. The inconvenience and cost are phenomenally high. Natural gas is generally considered an environmentally friendly fuel, but it is too limited quantity-wise to be considered a rival for oil. Coal may be considered to be the nearest replacement for oil, unless there was a major breakthrough in nuclear power. This fact is important, if the vast reserves of coal in most consuming countries are taken into account. The other sources of energy like nuclear and hydro power are gaining in terms of significance, but the level of significance is very low.

It is expected that share of oil in the world primary energy mix is likely to decline 'only moderately', by the end of the century. The future of coal appears to be 'bleaker' because of environmental considerations\textsuperscript{16}. The share of natural gas in the total primary energy consumption will go up by the turn of the century. All these factors help one to conclude that demand for oil will be steady at least during the latter half of the Nineties.

d) World’s Crude Oil Reserves, Share of OPEC and Production Capacity

World’s proven reserves of oil are estimated to be around 991 billion barrels. Of this total, 769 billion barrels (i.e., 77.6 per cent) are located in the OPEC Countries. Over 2/3rd of the world’s reserves are located in the Middle East. At the current rate of oil production, world’s oil reserves would last only for 45 years. The reserve-to-production ratio for OPEC indicates life span of 100 years\textsuperscript{17}. Although the share of oil in the world energy mix is likely to decline moderately during the 1990s, OPEC’s share in the world oil supply which declined
from 56 per cent in 1973 to 29 per cent in 1985 and rose to 36 per cent in 1989, is likely to increase.

While OPEC has sufficient reserves to meet the increased demand for oil in the world markets, it lacks the necessary production capacity. Heavy investments are required in the near-future to meet the exigency of the situation. The main reason for low investment in expansion of oil production capacity lies in lower oil prices during the 1980s. A downward trend in demand for oil combined with the problem of idle capacity of Member Countries, discouraged investment in this field. OPEC's production capacity rose by only 5.7 per cent during the period 1974-89, compared to 41 per cent rise during the period 1960-74.

There is considerable uncertainty regarding expansion in production capacity. This factor will influence the price of oil in the coming years. If production capacity is not increased oil supply will be constrained, causing upward pressure on oil prices.

e) Major Oil Consumers’ Policies

Among the major oil consumers of the world the OECD countries as a group have predominant share of oil consumption and among the OECD countries, the USA, claims a lion’s share in oil consumption. *The National Energy Strategy (NES) of USA* as revealed in the 20th February 1991 policy announcement clearly states that USA will have to live with a high level of dependence on imported oil during the 1990s and that its dependence is likely to reach 60 per cent by the turn of the century. The US may try to reduce the dependence level to 50 per cent by reducing the domestic consumption of fuels in order to save energy and improve the environment. But the ultimate outcome will depend on the oil prices in the international markets. The projected price, according to the *National Energy Strategy of the USA*, is $26.50 per barrel in real terms (based in 1989) by the year 2000. This price is lower than the one projected by energy policy towards the end of 1990. At this projected price, the production of crude oil in the USA is likely to rise from 8.8 million b/d in 1990 to 9.3 million b/d in the year 2000.

The NES does not seem to be in favour of an oil import tax which, if levied, would increase the cost to economy and impose additional burden in the form of loss in GNP. The OECD countries, also, have been pursuing policies of restraining consumption, with a view to evolving a code of conduct between owners of energy resources and the consumers.
aim is to reduce dependence on imported oil and wherever possible to enhance domestic production. The environmental dimension which is discussed below has evoked considerable interest in the discussions on use of oil.

f) Major Oil Producers’ Policies

Although OPEC as a group is not the sole oil producer and seller in the world market, it is by far the most important and hence the OPEC policies in this area are more relevant for our discussion. These countries aim at securing a steady source of revenue from out of their oil exports, as most Members of OPEC need to restore their economies and create a base for rapid economic growth in the next decade. The policy so far, has been setting quotas and adhering to certain framework of pricing. This policy has helped the OPEC as an organization to increase its share in the world market since 1986 oil collapse. But, heterogeneity of the group in terms of economic structure, the level of social development, absorptive capacity, density of population and political leanings, etc., has impeded the emergence of a single OPEC strategy.

With the collapse of the Soviet bloc and the consequent fall in oil output the oil markets during the later half of the 1990s are expected to be tight. The OPEC will emerge as a more cohesive group with lesser differences over quota and price of oil among its Members. Thus, the oil producers’ policy would be to earn maximum revenue at more remunerative price and also increase their share in the market.

g) Environmental Considerations

In recent years consciousness regarding environmental protection is growing. Any decision regarding the energy use has to be related to its environmental impact. During the 1990s, the oil prices as also oil consumption and production will have to take the environmental impact into consideration. It is true that oil is environmentally superior to coal and nuclear energy. But its increasing use in developed countries in the past and in developing countries in recent years, has created environmental hazards. There is a concern for levels of pollution which are linked to the use of oil and carbon dioxide emissions. The developed countries are attempting to devise strategies to reduce the use of fossil fuels but it is unlikely that the coming decade will see a substantial cut in their consumption of fossil
FACTORS AFFECTING THE OIL PRICES

Environmental factors

Energy conservation

Crude Production

Stock levels

Seasonal fluctuation

Inter-fuel economics

Abnormal weather condition

Crude quality

Government policies

Freight rates

Demand pattern

Refinery capacity

New technology

Logistics

Financial climate

Uncertainties and market perception

fuels. Similarly, the developing countries facing problems of poverty and slow growth are also unlikely to reduce their dependence on fossil fuels only on environmental grounds. Hence, one may expect a shrinking dependence on fossil fuels after 2000 A.D., but not before it. Thus, environmental considerations are not expected to have a substantial impact on the use of oil during the next decade.

8.3. WORLD DEMAND FOR OIL

The above factors will exert their influence on oil prices through their impacts on demand for and supply of oil in world markets. The world oil demand registered a growth rate of 3.3 per cent in 1987/88. The growth rate declined to 1.8 per cent and 1.3 per cent respectively during the two years that followed. The GNP growth rates influence the world demand for oil to a considerable extent.

Among the factors that caused slowdown in world demand for oil in 1991 are the following: lower world economic growth, the Persian Gulf-Crisis and the recessionary trends in the U.S., the U.K. and Canada. It may be stressed that demand for oil is a function of a large number of variables. Some are stated below:

a) world economic growth,
b) inflation rates,
c) exchange rate of the US dollar which is the principal medium of oil payments,
d) effective Conservation policies,
e) alternative sources of energy and their competitiveness,
f) oil stock policies of consuming countries,
g) elasticities of demand for alternative forms of energy, i.e., inter-fuel economics,
h) crude oil price movements,
i) consumers' and producers' oil policies,
j) environmental concerns,
k) political developments in the world, specially in the Middle East zone,
l) production Capacity and refinery capacity and
m) seasonal fluctuations.

The emergence of European market in 1992, the prospective regionalisation of world energy markets and the profound political and economic changes in the former Soviet Union and the other Centrally Planned Economies (CPEs) of Eastern Europe are some of the other factors which will affect the oil demand growth in the 90s.
(TABLE 8.1)
PROJECTED WORLD DEMAND AND SUPPLY

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>World Demand</strong></td>
<td>49.61</td>
<td>50.54</td>
<td>51.49</td>
<td>52.46</td>
<td>53.44</td>
<td>54.45</td>
<td>55.47</td>
<td>56.50</td>
</tr>
<tr>
<td><strong>World Supply</strong></td>
<td>50.48</td>
<td>51.36</td>
<td>52.26</td>
<td>53.18</td>
<td>54.11</td>
<td>55.06</td>
<td>56.02</td>
<td>57.03</td>
</tr>
<tr>
<td><strong>Balance (Supply-Demand)</strong></td>
<td>0.870</td>
<td>0.820</td>
<td>0.770</td>
<td>0.720</td>
<td>0.670</td>
<td>0.610</td>
<td>0.550</td>
<td>0.500</td>
</tr>
<tr>
<td><strong>OPEC Supply</strong></td>
<td>24.23</td>
<td>25.01</td>
<td>25.82</td>
<td>26.64</td>
<td>27.48</td>
<td>28.36</td>
<td>29.24</td>
<td>30.16</td>
</tr>
<tr>
<td><strong>OPEC Oil Exports</strong></td>
<td></td>
<td>18.00</td>
<td>18.60</td>
<td>19.18</td>
<td>19.79</td>
<td>20.42</td>
<td>21.05</td>
<td>21.68</td>
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<td><strong>OPEC Oil Revenues Scenario-1</strong></td>
<td></td>
<td>139.46</td>
<td>146.57</td>
<td>154.93</td>
<td>164.04</td>
<td>173.81</td>
<td>183.87</td>
<td>195.04</td>
</tr>
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<td><strong>Scenario-2</strong></td>
<td></td>
<td>137.98</td>
<td>142.57</td>
<td>147.01</td>
<td>151.70</td>
<td>156.52</td>
<td>161.35</td>
<td>166.01</td>
</tr>
<tr>
<td><strong>% of Oil Exports To GDP</strong></td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td>17.42</td>
<td>17.61</td>
<td>17.76</td>
<td>17.94</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td></td>
<td></td>
<td></td>
<td>16.52</td>
<td>16.44</td>
<td>16.34</td>
<td>16.24</td>
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<tr>
<td></td>
<td>C</td>
<td></td>
<td></td>
<td></td>
<td>17.6</td>
<td>18.1</td>
<td>18.72</td>
<td>19.4</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td></td>
<td></td>
<td></td>
<td>16.7</td>
<td>16.91</td>
<td>17.22</td>
<td>17.56</td>
</tr>
</tbody>
</table>

The figures are in million barrels per day.

@ The figures are in billion Dollars.

**Scenario 1**
Under the assumption that all exports are valued at gradually rising prices from $21 per barrel in 1990 to $26.57 per barrel in 2000.

**Scenario 2**
Under the assumption that all exports are valued at constant prices of $21 during 1990 to 2000.

A
Exports as per Scenario 2 and GDP Growth at 2.2 per cent.

B
Exports as per Scenario 2 and GDP Growth at 3.8 per cent.

C
Exports as per Scenario 1 and GDP Growth at 2.2 per cent.

D
Exports as per Scenario 2 and GDP Growth at 3.8 per cent.
Taking into consideration these factors, it is estimated that the world demand for oil will grow at the trend growth rate of 1.88 per cent per annum observed during 1983 to 1990. By applying this trend growth rate it is expected that by 1995 world oil demand (outside former CPEs) will reach 54.45 million barrels per day (b/d) and by the end of the century to 59.76 million b/d (See Table 8.1). Prediction is, however, based on the assumption that world recession will come to an end and that gradual increase in global economic growth will become a reality. As experienced in the past, with modest economic growth in the world, demand for oil on a global basis is likely to rise at an average annual rate of 1.88 per cent annum. Similarly, it is assumed that no political tensions (particularly in the Middle East region) will take place during the Nineties. It is also assumed that environmental concerns will not lead to mandated cut-backs in oil consumption during the next decade.

These projections are close to the ones made by various energy organizations and analysts. For instance, OPEC estimates that world demand for oil will be around 54.83 million b/d by 1995, climbing to 57 or 58 million b/d by the year 2000\(^8\). The Energy and Resources Branch of the United Nations anticipate that the world oil demand is likely to grow at an average annual rate of about 2 per cent per annum (1 to 2 per cent per annum in the OECD countries and 3 to 4 per cent per annum in the rest of the world)\(^9\). The oil demand for Asia-Pacific is anticipated by OPEC to grow by 3 to 4 per cent per annum under a moderate price output scenario, in comparison to the expected one per cent for the world as a whole in the 1990s\(^{10}\).

According to al-Fathi under two separate price scenarios of $21 and $25 (real 1991), the world demand for oil will rise from 51.9 million b/d in 1990 to 57.7 million b/d under the first scenario and to 54.0 million b/d under the second scenario by the year 2000\(^{11}\).

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*To obtain the value of a variable in a projection period the estimated trend growth rate is applied to base year figure using the following formula: \( Y_t = Y_0 (1+r)^t \) where \( Y_t \) = Value of the variable projected for the period t, \( Y_0 \) = Value of the variable in base period '0', \( r \) = Trend growth rate.*
THE WORLD OIL SUPPLY

The Supply of crude oil is a function of several variables some of which are stated below:

a) availability of excess oil production capacity in the producing nations,
b) financial needs of oil exporting countries,
c) degree of control over world oil markets,
d) degree of co-operation and co-ordination between OPEC and non-OPEC oil exporters,
e) management of commercial and Government oil stocks,
f) oil producers' expectation of price trends,
g) freight rates
h) technology and
i) non-OPEC oil producing policies.

Considering these variables affecting oil supplies, it is assumed that recently observed growth rates of supply will continue to prevail in future in the world. If the period of unduly large fluctuations is ignored, the recent three year period of 1989-91 may be taken as a base for calculation of prospective growth rates for purposes of projection. The growth rate estimated on the basis of this period is 1.76 per cent per annum for world oil supply. On the basis of this growth rate, the projections are shown in Table 8.1. It is observed in the Table that world oil supply will increase from 50.48 million b/d in 1990 to 55.06 million b/d in 1995 and 60.00 million b/d in 2000. The oil supply projections for OPEC Countries are derived on the basis of the assumption that the share of OPEC in the world oil supply will gradually rise from its present level of 48 per cent (1990) to 55 per cent in 2000. The rationale for gradual increase in OPEC share lies in the recent tendency of increase observed after the year 1988 and the earlier assumption of no major disturbance affecting OPEC economies. Applying the projected OPEC shares derived by interpolation based assumption of uniformly constant increase as given in Table 8.1 to world oil supply projections, the OPEC oil supply projections are derived.

It is estimated that OPEC oil supplies (See Table 8.1), presently 24.23 million b/d (1990), will rise to 28.36 million b/d in 1995 and to 33.00 million b/d in the year 2000. According to the OPEC estimates, the call on OPEC oil, including natural gas liquids (NGL) will rise from the present figure of 24.95 million b/d to 27.76 million b/d in 1995 and to 31.48 million b/d by the year 2000.
Al-Fathi is of the opinion that demand for OPEC oil will witness a 'period of moderate growth' during the 90s. Natural gas will play a role similar to that of non-OPEC oil supplies in the 1980s. It is anticipated that production of oil in the USA and the former Soviet Union will witness a declining trend. Eastern Europe and Soviet Union are struggling to transform their economies from a command to market economy. The transition may take longer than expected. In the non-OPEC world as a whole, production of oil is likely to remain at approximately its present level for some years to come.

Dr. P.R. Odell holds the view that supply of oil from the Middle East region could be viewed as but an 'optional extra' to alternative supplies; dependent on policies and
Boundaries of potential energy self-sufficient regions

Actual and potential net energy exporting countries

decisions still to be taken in the world's major energy regions. He estimates that the call on OPEC oil as a whole, will increase from 25.1 million b/d in 1990 to 25.3 million b/d in the year 2000 and to 26.7 million b/d in the year 2010. He anticipates a rise in non-OPEC oil production from 24.7 million in 1990 to 29 million b/d by the year 2000. These estimates are based on the assumption that the political and economic pressures are towards the regionalisation of energy and oil market over the next decade. As shown in Figure 8.1 a) North America and the Caribbean, b) The Western Pacific rim and South east Asia and c) Europe plus North Africa are the world's three most energy intensive regions. According to Dr. P.R. Odell if this regionalisation process materializes the "intra-regional trade will be maximized while inter-regional trade will significantly be reduced."

8.5. SUPPLY - DEMAND GAP

As there is excess supply (See Table 8.1) there will be no upward pressure on oil prices. However even a casual look at the Table 8.1 shows that the gap is narrowing over time. If this tendency persists in consuming and producing countries, it may begin to exert pressure on oil prices. Hence, two scenarios may be expected to emerge in near future.

Under one scenario the real oil prices, may remain stable at the 1991 oil price of $21 per barrel, that is, the price adopted as the OPEC current minimum reference price basket (agreed on July 1990). This scenario assumes a stable world economic order where no serious economic or political disorder affects the countries supplying and demanding oil in the world oil market and the policies pursued by OPEC Countries remain in operation during the period under projection.

On the other hand, if oil-producing countries fail to implement their investment policies for augmenting oil production, the expected rise in oil supply may not materialise and this may lead to situation of excess demand for oil resulting in upward movement in oil prices. This situation may also arise in case of non-cohesive decision-making by OPEC Countries due to their differences in political leanings. Under these influences, alternative price scenarios of price increases may develop, and under modest assumptions a real price rise upto $26.57 per barrel approximately is expected. This will mean emergence of scenario two.
Under two alternative price scenarios mentioned earlier, Al-Fathi’s estimates of decline in production by OECD and increase in production by developing countries are presented below:

<table>
<thead>
<tr>
<th>Price Scenarios</th>
<th>Decrease (Million Barrels Per Day)</th>
<th>Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price Per Barrel</td>
<td>OECD</td>
<td>DCs</td>
</tr>
<tr>
<td>$ 21.00</td>
<td>-5.90</td>
<td>17.30</td>
</tr>
<tr>
<td>$ 25.00</td>
<td>-5.10</td>
<td>11.10</td>
</tr>
</tbody>
</table>

Thus there would be decline in OECD production amounting to 5.1-5.9 million b/d in the year 2010. He, on the other hand, anticipates that the crude oil production of the developing countries may rise by 11.1-17.3 million b/d, to meet the rise in demand and the decline in crude oil elsewhere. About 85-90 per cent of the gap may be filled by the Members of OPEC. This will ultimately lead to a rise in the OPEC’s share of world oil production from 47.5 per cent in 1990 to about 55 per cent in 2000. This is in conformity with assumption used in our projections of OPEC oil supply.

The projections of oil exports of OPEC are derived by applying the observed average share of oil exports in oil production during the period 1984 to 1989, which was the period of moderate growth with some fluctuations. This period of six years covered the world oil price collapse of 1986 when the share of OPEC in world oil supply suddenly increased with steady increase in exports since then. Assuming that there will be steady increase in exports and that production will continue at the projected level during the period under projection, the OPEC will maintain its average share of 72 per cent observed earlier in 1984-89. If in future, oil consumption of OPEC increases at a faster rate, given the Organizational constraints on possibility of increasing oil production, the share of exports in production may decline. One cannot rule out the reverse tendency of slower growth in domestic consumption of oil in OPEC. Taking into account both the possibilities, a safer assumption of steady increase in both exports and production is taken such that share of former in the latter remains constant at 72 per cent level. Table 8.1 shows the projections of exports for the next decade.
8.6. OPEC'S OIL EXPORT EARNINGS

The quantum of oil exports multiplied by oil price yields the export earnings of OPEC. Taking two real price scenarios outlined earlier, two sets of projections of oil export earnings are derived. In the first estimation it is assumed that the oil prices in real terms will remain constant at $21 per barrel throughout the period of the projection. This in turn would fetch $156.52 billion in 1995 and $182.12 billion by the year 2000.

The second estimation assumes a gradual rise in oil prices from $21 in 1990 to $26.57 in the year 2000. This would lead to a more optimistic oil revenue scenario of $173.81 billion in 1995 and $230.43 billion in the year 2000. The Graph 8.4 depicts these increases in export earnings under the two price scenarios.

In order to appraise the significance of increase in export earnings, ratio of export earnings to real GDP is considered. The real GDP of the OPEC Countries is projected by taking two likely trend growth rates of 2.2 per cent and 3.8 per cent per annum, which reflect respectively the modest growth rate experienced currently and the optimistic growth rate based on average of last five years.

If OPEC Members achieve the current rate of growth of 2.2 per cent in their GDP, it is expected that GDP (real) would be $864.36 billion and $963.72 billion respectively in the years 1995 and 2000. However, if the rapid changes in the structure of world economy are taken into consideration where some developing countries are growing at a very fast pace and Eastern European and Asia-Pacific countries would also grow at a fast rate as a result of liberalization process in their economic policy, then a more optimistic growth rate of 3.8 per cent for OPEC Countries appears to be more plausible. In this situation real GDP of OPEC is expected to grow from $835.28 billion in 1991 to $969.67 billion in 1995 and to $1168.44 billion by the year 2000.

Under the above two alternative growth paths of OPEC real GDP the share of export earnings in real GDP will experience different rates of increase under two the price scenarios. These four alternative movements of the share of export earnings in real GDP are shown in Graph 8.5 & 8.6.
OPEC'S PROJECTED OIL REVENUES UNDER TWO PRICE SCENARIO

(GRAPH 8.4)

Billion Dollars

Source: Table 8.1.
(GRAPH 8.5)
SHARE OF EXPORT EARNINGS IN REAL GDP
[$21-26.57 REAL OIL PRICE]

Per Cent

Year

Source: Table 8.1.
(GRAPH 8.6)
SHARE OF EXPORT EARNINGS IN REAL GDP
[$21 Constant Real Oil Prices]

Source: Table 8.1.
It may be noted that in the case of rising real price scenario, low growth alternative gives highest increase in this ratio, while under high growth assumption the share will increase at a moderate rate. Under constant real price scenario, however, the increases in ratio of export earnings to real GDP are very slow under modest growth case, while in case of high growth alternative actually there is a moderate decline in this ratio. Considering the possibility that OPEC economies will realize an optimistic growth rate and will achieve a steady but slow increase in oil prices, it is most likely export earnings as percentage of real GDP will move from 16.7 per cent in 1991 to 17.92 per cent in 1995 and 19.72 by the end of the century. However, one cannot ignore the possibility that if high growth is the outcome of higher export earnings, then share of exports in production may actually increase and rise in export earnings may actually be much higher than that projected under this alternative. If this happens, the ratio may touch the projection implied in the third alternative of 21.10 per cent in 1995 and 23.91 per cent in the year 2000.

It may be stressed that the above projections are macro ones, which essentially ignore the vast differences in countries within OPEC, in terms of their absorptive capacities of petrodollars. The ratio of oil exports to total exports varies from the lowest (26 per cent) in Indonesia to the highest (99 per cent) in Iraq. This reveals variations in the degree of vulnerability among Member Countries. The current effort of highly vulnerable countries to reduce their dependence on oil export earnings through increase in non-oil exports and oil-based products have met limited success. It is expected that in the near future their efforts to diversify their economic structures will enhance their absorptive capacities.

The average price of oil appears to be languishing at a level of about $2 per barrel below the target price of $21 during the year 1991. Mehdi Varzi, Director of Energy Research at Kleinwort Benson Securities Research in London noted that the growing financial problems facing the large OPEC producers are bound to make them more and more determined to reach at least the $21 OPEC target price. The Saudi Arabia and IR of Iran both will move closer on oil prices. IR of Iran would certainly demand a bigger quota, whereas Saudi Arabia would want to retain its existing large share of about 1/3 of the total market of OPEC oil. It is to be hoped that there would be no 1980s-style production war that caused a glut in the market.

The recent weakening of the US dollar would wear loss of earning power of OPEC Countries. It is estimated that the loss to IR Iran would be of the order of 14 per cent.
In coming years therefore the question of a search for an alternative to pricing oil in dollars would come to the forefront of discussion. Much would depend on the continuing weakness of US dollar in the international currency markets.

REFERENCES

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20 Ibid., 371-2.
21 Ibid., 372-4.
22 Ibid., 369-371.
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