

**Table 4: Views on OPEC Production Capacity ( mmbbl/day )**

	PIW	Argus	IEA	EIA
Saudi Arabia	10.00	10.60	10.50	10.5
Iran	3.65	3.65	3.73	3.75
Iraq	2.68	3.00	3.00	3.1
Kuwait	2.20	2.40	2.40	2.2
UAE	2.40	2.69	2.40	2.6
Qatar	0.70	0.80	0.75	0.75
<b>Persian Gulf</b>	<b>21.63</b>	<b>23.14</b>	<b>22.78</b>	<b>22.9</b>
Venezuela	2.90	3.10	2.95	3.05
Nigeria	2.05	2.30	2.20	2.1
Indonesia	1.35	1.30	1.35	1.35
Libya	1.45	1.70	1.45	1.45
Algeria	0.88	0.90	0.90	0.9
<b>Non-Persian Gulf</b>	<b>8.63</b>	<b>9.30</b>	<b>8.85</b>	<b>8.85</b>
<b>OPEC</b>	<b>30.26</b>	<b>32.44</b>	<b>31.63</b>	<b>31.75</b>

1.The excess capacity throughout the world has seriously declined which is of great concern to consumers.

2.The reduction in global excess capacity is one main reason for the recent trend of hikes in oil prices.

3.The greater portion of present excess capacity is within the Persian Gulf region, and this has increasingly highlighted the importance of the region.

4.The lack of investment in major producing countries forced the excess capacities to decline.

Indeed, the desire of industrial states to invest in high-cost oil regions and also in finding substitutes for oil has had some influence in the creation of the present situation. Another important factor in the reduction of investment in this regard is the predictable and unpredictable increases of costs and expenditures of major oil exporter countries; thus leaving them short of necessary capital for oil investment.

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While the volume of oil export globally raised 27.4% during the years 1974-97, the overall export value has been sharply reduced and OPEC real basket price has declined from 9.82 to 4.82 dollars during the same period.

It is interesting to note that per capital income among OPEC countries did not exceed 1,930 dollars in 1997 while it was between 19850 to 24730 dollars for western countries.

#### Excess Capacities Outlook

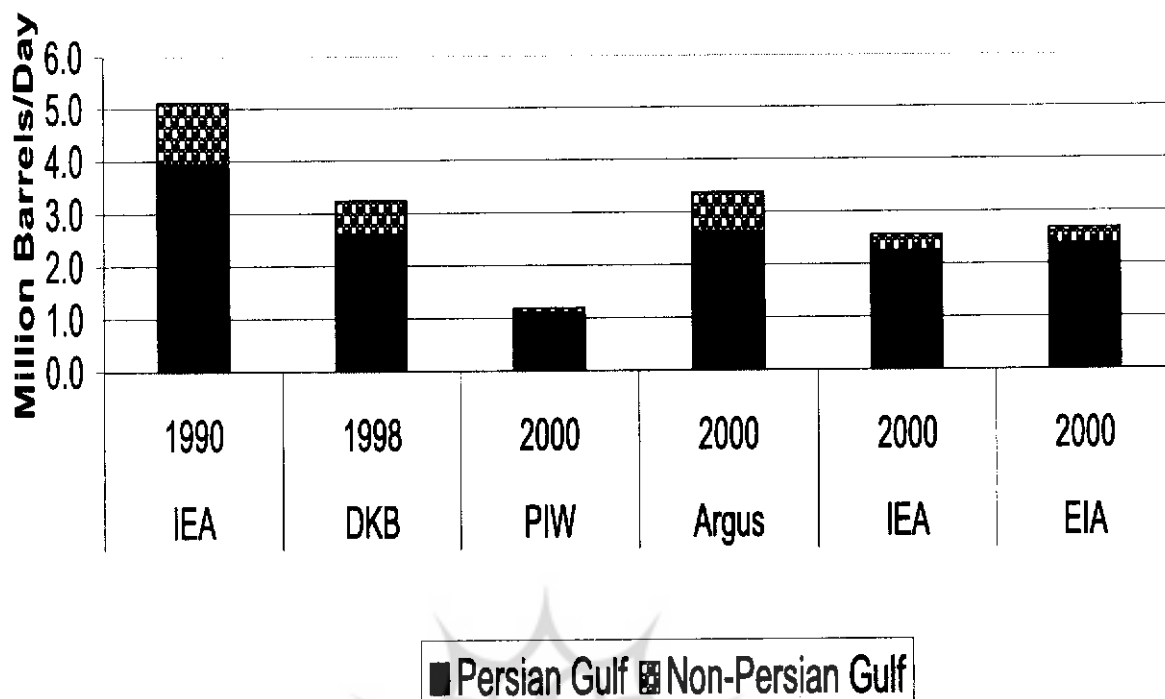
The excess capacities in future might follow one of the two trends as below:

1. There will be no excess capacities at all and OPEC members will produce

similar to non-OPEC producers at their maximum capacity; thus OPEC cannot be held responsible with respect to the security of supply. Hence, consumers must take necessary measures such as increasing their standard level of stock building. Therefore, they would take the direct responsibility of security of supply.

2. Both OPEC producers especially those in the Persian Gulf region, and consumers mutually agree on the issue of necessity of the excess capacities. And, therefore the creation of such capacities and maintaining them is very costly and requires great investments, and the two groups of consumers and producers need to co-operate in this regard; since, the chances that major producers take sole responsibility of such vast investment and unilaterally providing the security of supply is very dim. Undoubtedly, those who are in serious need of such security should participate in meeting the relevant costs.

## Graph 6: OPEC Spare Capacity



Otherwise, it will be the oil market that is going to set the rules.

Despite the oil consumers' efforts to reduce or stop their dependence on oil, the world as we know it today, shall rely on crude oil for years to come. Therefore, it is quite logical for the two groups of producer and consumer countries to reach a mutual understanding and respect each other's interests.

### The Role of Persian Gulf Producers

A look at the volumes of excess production capacities shows that the vast portion of these capacities is within the Persian Gulf region (Fig.6). Also the role of these countries has become more important in this respect as their share of excess capacities within OPEC has risen from 77 % in 1990 to 80% in 1998 and to 90% presently (Table 3). Therefore, the role of this region and its producers in stabilizing the market and providing security of

Table 3: Views on OPEC Spare Capacity ( mmbbl/day )  
Based on September Production (29.07mb/d)

	PIW	Argus	IEA	EIA
Saudi Arabia	1.15	1.75	1.65	1.65
Iran	-0.03	-0.03	0.05	0.07
Iraq	-0.15	0.17	0.17	0.27
Kuwait	0.05	0.25	0.25	0.05
UAE	0.1	0.39	0.1	0.3
Qatar	-0.01	0.09	0.04	0.04
Persian Gulf	1.11	2.62	2.26	2.38
Venezuela	-0.04	0.16	0.01	0.11
Nigeria	0.01	0.26	0.16	0.06
Indonesia	0.04	-0.01	0.04	0.04
Libya	0.02	0.27	0.02	0.02
Algeria	0.05	0.07	0.07	0.07
Non-Persian Gulf	0.08	0.75	0.3	0.3
OPEC	1.19	3.37	2.56	2.68

supply is becoming increasingly important.

### The Present Excess Capacities

There are various views and reports regarding the present volumes of excess capacities. Some sources believe these volumes are quickly decreasing so fast that in near future, the output will reach its maximum and thus the excess volume could reach zero.

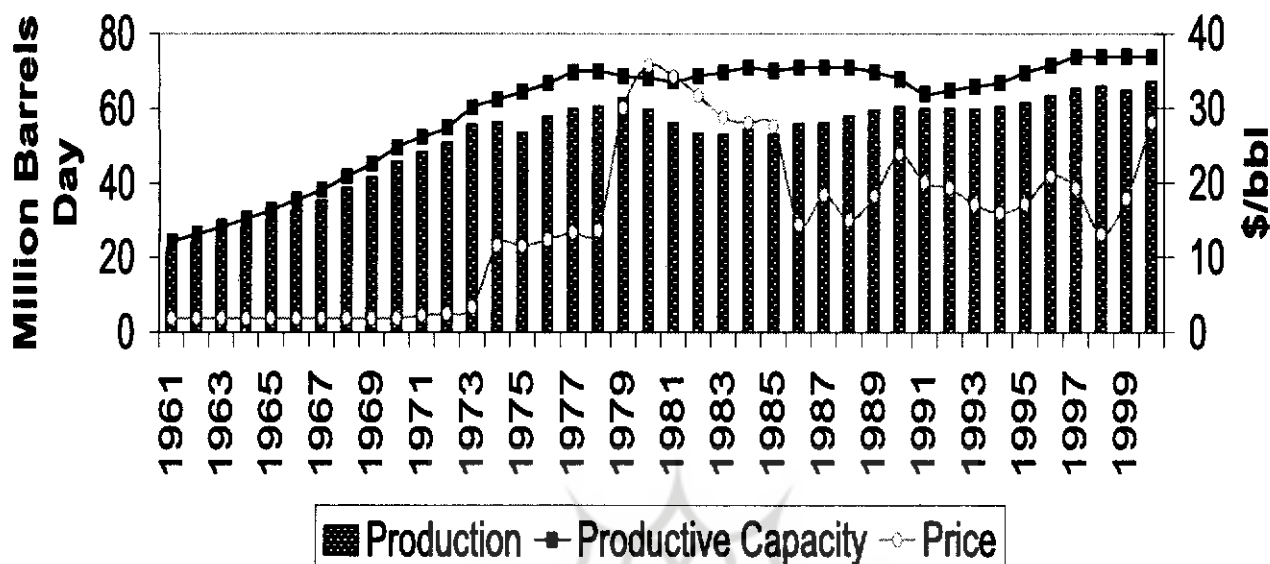
Such sources have declared that maximum OPEC production capacity is

hardly over 30 mbd (Table 4) which is almost equivalent to the demand from OPEC of 29.1 and 30.1 mbd in the fourth quarter of this year and next year respectively.

However, the optimists estimate 32 mbd as the maximum production capacity for OPEC (Table 4). In this case, such volume might meet the increase in world demand within the next 2 to 3 years.

But, oil market analysts agree on the following points:

**Graph 5: World Crude Oil Supply,  
Production Capacity and Price(Brent)**



about 2 mbd- belongs to OECD. (Table 2 and Fig. 1 & Fig.2).

In other words, the recent hikes in prices in comparison with that of 1980s, not only has not helped the excess capacities to increase but also rather, has dramatically had an opposite effect.

#### Excess Capacities & World Oil Prices

One of the main factors which increased the oil prices recently, has been the decline in OPEC's excess capacity. And this is while non-OPEC producers have almost always produced oil with their full capacity and left OPEC members as residual producers (Fig.3)

Indeed, Non-OPEC producers usually have a very small volumes of unemployed capacities which is due to operational reasons. And obviously, such small amounts cannot be considered as excess capacities. The OPEC countries, too, were in the same position until 1973, however, since then, idle capacities

became quite tangible with respect to OPEC members (Fig.4).

Although, excess capacity is costly for these countries it provides them a determining role in the oil market. Moreover, OPEC excess capacity assures oil consumers of security of supply, and evidently, any decline in the volumes of excess capacity is of great concern to the consumers. This is why, reviewing the past trend of excess capacities, show that, whenever they sharply declined, oil prices were raised, and vice versa (Fig. 5).

There is no doubt, if these extra capacities are not enhanced, OPEC will not be able to fully meet the world demand and therefore, it cannot be counted on as a provider of security of supply. Thus, oil prices will remain relatively high.

However, if the excess capacities grow again through consumers' co-operation, then the oil prices will be set at an appropriate level agreeable to both sides

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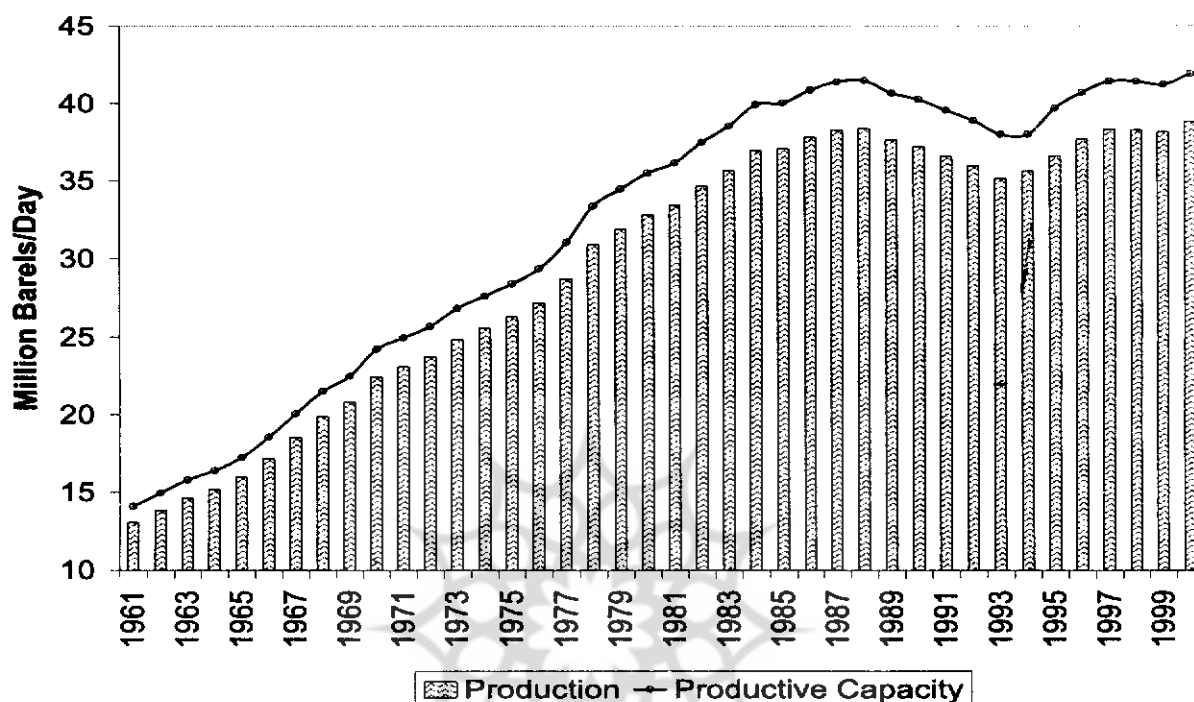
that period from 23.8 mbd to 24.6 mbd, the OECD's demand fell from 38.9 to 34.4 mbd - a decline of 4.5 mbd. It is forecasted that, in spite of the firm prices, the world oil demand is going to

grow around 1.9 mbd in the year 2001, which if it realizes, it will be considered as an unprecedented event in recent years.

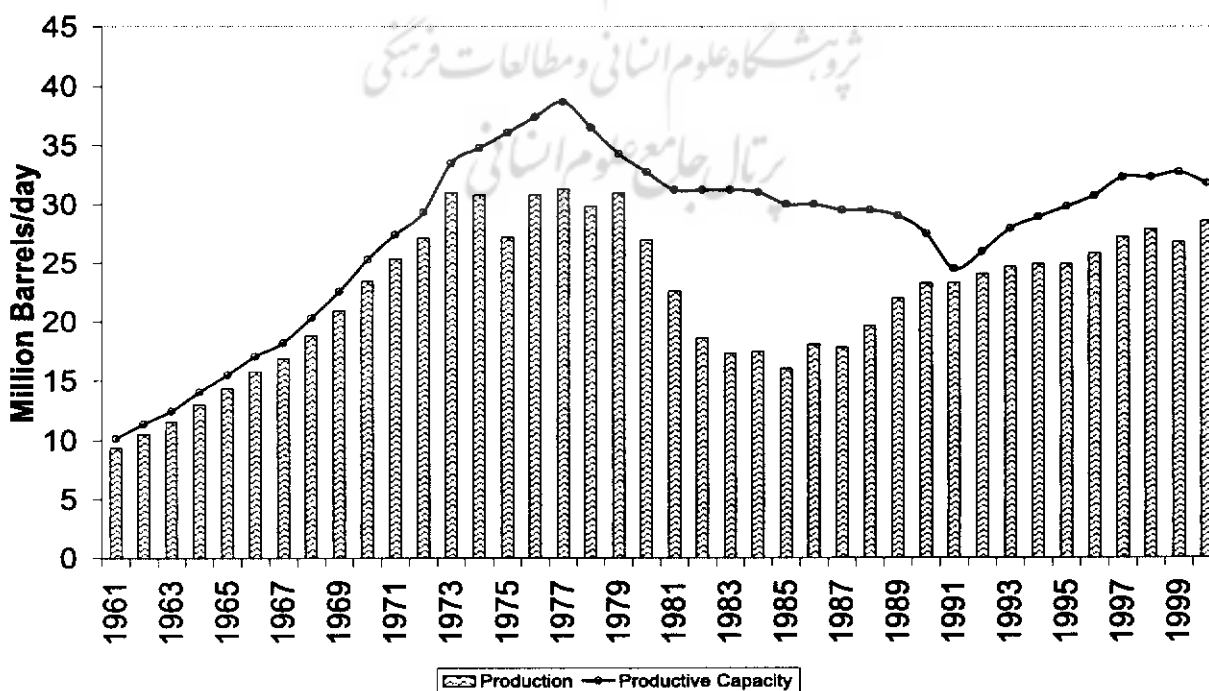
Hence, it may be concluded that, the

world oil demand is no longer greatly affected by relatively high oil prices. And, it is important to note that, from 3.7 mbd growth in world oil demand during 1998-2001, a large portion of it,

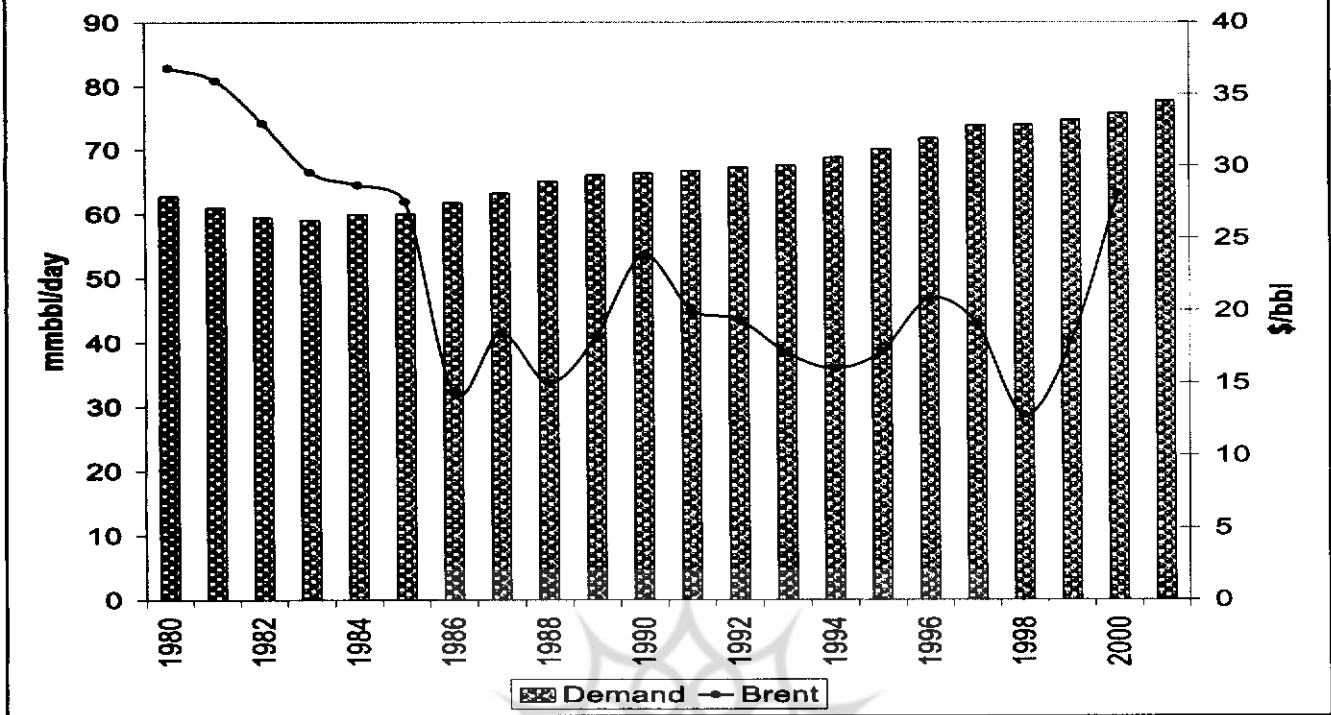
**Graph 3: Non-OPEC Supply and Production Capacity**



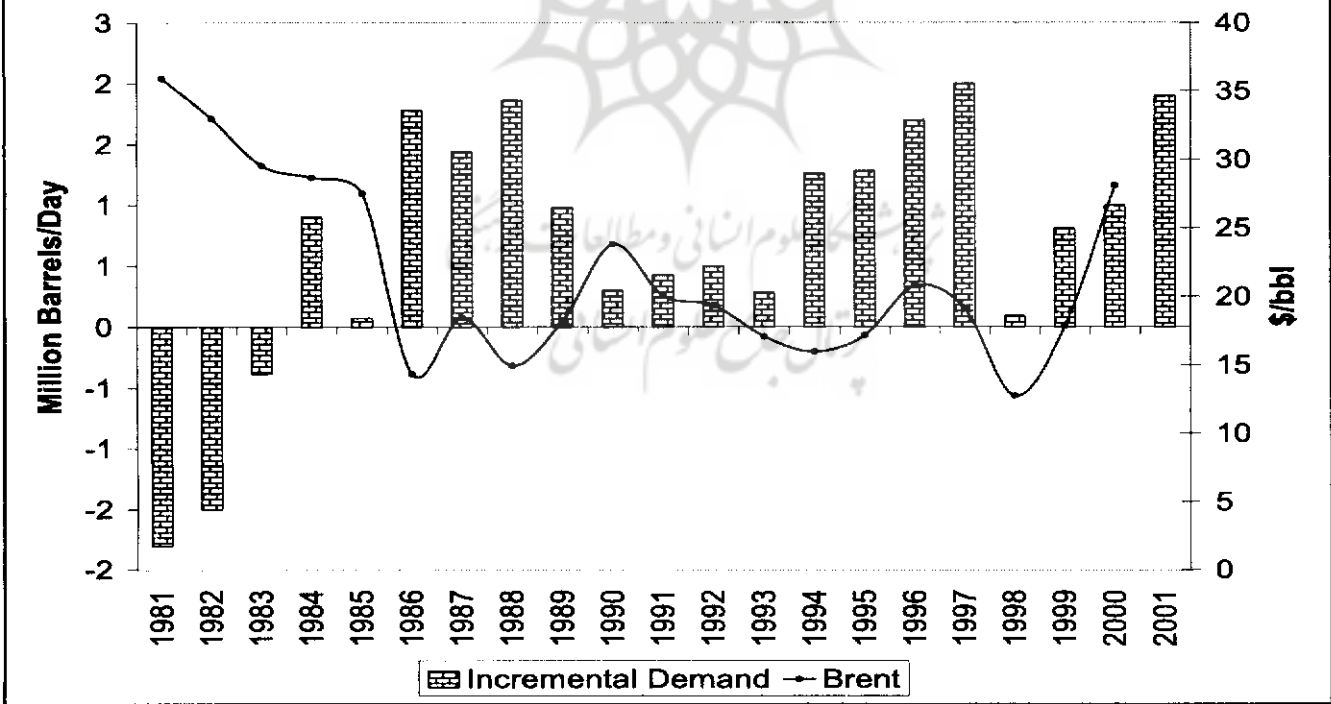
**Graph 4: OPEC Supply and Production Capacity**



**Graph 1: World Oil Demand and Price (Brent)**



**Graph 2: Incremental Oil Demand and Price (Brent)**



1981-83, the demand not only did not grow but also declined by 1.8, 1.5 and 0.4 mbd respectively.

Whereas the relatively high prices in

1999 and 2000 have not prevented the growth of world oil demand by 0.8 mbd and 1 mbd respectively.

The world oil demand in 1980 was

62.7 mbd and in a downward trend it dropped to 59 mbd in 1983.

It is interesting to note that, while the Non-OECD demand rose during

with full force in order to fill the gap created by the missing volumes of the two countries' oil from the market. Thus, a substantial portion of OPEC's production excess capacity was brought on stream.

However, the reentering of Kuwait's oil into the market, and OPEC's call on its members to follow again the quota system, caused the excess capacities to rise once again. And the return of Iraq to the oil market, intensified this trend to the extent that, in 1997 OPEC's extra capacity reached over 5 mbd.

In Jakarta meeting, OPEC members again tried to gain more market share by bringing on stream part of their extra capacities. But, unpleasant market condition due to the economic crisis in southeast Asia, forced down oil prices sharply. Consequently, OPEC members had no choice but to cut productions in 3 consecutive stages, such that, excess capacities were again increased and in 1999, they reached a total of 6 mbd.

The surge in oil prices following the third round of production cuts by OPEC put this organization under worldwide pressure to raise its production in order for the oil prices to be reduced to lower levels.

As a result, 10 members of OPEC raised their production in 4 stages by bringing on stream a substantial part of their production excess capacities.

Actually, OPEC's production ceiling - for the 10 members- has been raised by about 3.7 mbd since March 2000. And according to oil analysts, only 2 or 3 OPEC countries have some extra capacities (Table 1).

### The Paradox of High Prices of Oil & Growing World Oil Demand

One clear difference between the current surge in oil prices and those of the late 1970s is that, high prices in the past, caused sharp decline in world oil demand, such that, during the years

**The relatively high prices in 1999 and 2000  
have not prevented the growth of world oil demand  
by 0.8 mbd and 1 mbd respectively**

	Production			OPEC Capacity	Excess Capacity	Utility Ratio
	OPEC	Non-OPEC	Total			
1961	9.364	13.064	22.428	10.15	0.786	7.74
1973	31	24.814	55.803	33.5	2.511	7.50
1974	30.729	25.539	56.268	34.8	4.071	11.70
1975	27.155	26.278	53.431	36.1	8.945	24.78
1976	30.738	27.162	57.9	37.4	6.662	17.81
1977	31.278	28.725	60.003	38.7	7.422	19.18
1978	29.805	30.902	60.707	36.48	6.675	18.30
1979	30.925	31.884	62.812	34.28	3.332	9.73
1980	26.89	32.825	59.715	32.73	5.84	17.84
1981	22.624	33.428	56.05	31.2	6.578	27.49
1982	18.584	34.662	53.246	31.2	12.016	40.44
1983	17.317	35.639	52.956	31.2	13.683	44.50
1984	17.442	35.917	54.359	31	13.558	43.74
1985	16.04	37.03	53.069	30	13.961	46.54
1986	18.074	37.79	55.864	30	11.926	39.75
1987	17.801	38.289	56.07	29.5	11.899	39.66
1988	19.665	38.344	58.009	29.5	9.835	33.34
1989	22.01	37.611	59.621	29	6.99	24.10
1990	23.288	37.219	60.507	27.5	4.212	15.32
1991	23.37	36.578	59.943	24.5	1.135	4.63
1992	24.074	35.965	60.039	25.95	1.876	7.23
1993	24.678	35.149	59.827	27.93	3.252	11.64
1994	24.889	35.604	60.493	28.9	4.011	13.88
1995	24.893	36.601	61.494	29.8	4.907	16.47
1996	25.826	37.66	63.486	30.7	4.874	15.88
1997	27.153	38.29	65.443	32.3	5.147	15.93
1998	27.85	38.27	66.12	32.3	4.45	13.77708978
1999	26.73	38.15	64.88	32.7	5.97	18.26
2000	28.50	38.80	67.30	31.75	3.25	10.24

Source :  
World Petroleum Industry Outlook, Pennwell 1999  
Global Oil Report Broadbar Kleinwort Benson 1999  
EIA

	OECD	NON-OECD	Total	Incremental Demand
1980	38.9	23.8	62.7	
1981	36.8	24.1	60.9	-1.8
1982	35.0	24.4	59.4	-1.5
1983	34.4	24.6	59.0	-0.4
1984	35.1	24.8	59.9	0.9
1985	34.7	25.3	60.0	0.1
1986	35.7	26.1	61.8	1.8
1987	36.4	26.9	63.2	1.4
1988	37.5	27.5	65.1	1.9
1989	37.9	28.1	66.1	1.0
1990	38.1	28.3	66.4	0.3
1991	38.2	28.6	66.8	0.4
1992	38.8	28.5	67.3	0.5
1993	39.0	28.5	67.6	0.3
1994	40.0	28.8	68.8	1.3
1995	44.9	25.2	70.1	1.3
1996	45.9	25.9	71.8	1.7
1997	46.6	27.2	73.8	2.0
1998	46.8	27.1	73.9	0.1
1999	47.6	27.1	74.7	0.8
2000	47.9	27.8	75.7	1.0
2001	48.8	28.8	77.6	1.9

Source : OIL MARKET REPORT ; IEA

# Oil Production Excess Capacities & The Role of Persian Gulf Producers

Presented at International Conference of  
"THE IMPACT OF THE MIDDLE EAST/CASPIAN OIL ON GLOBAL ENERGY  
MARKETS", 4th/5th November 2000- Tehran



Mohammad Ali Khalilbi

*In recent months, oil production excess capacities have increasingly become a key issue; as reduction in the capacities has caused worry and disturbance among major consumer states.*

*Such worry has begun to increase since industrial countries while have repeatedly placed emphasis on OPEC's production boost, they are doubtful about all OPEC members' capabilities to raise their production capacities. It is a fact that, a sharp reduction in oil production extra capacity might endanger global security of supply of oil.*

*Indeed, some of the organization's members have already stated that they are not able to raise their production, thus leaving them helpless in meeting their share of production increases within OPEC's quota system.*

*Furthermore, independent sources in oil markets also have expressed their deep concern about the unprecedented reduction in OPEC's excess capacities.*

*In addition, they have stated that only 2 or 3 Persian Gulf producers have excess capacities.*

*And, this has more and more worried major consumer as well as the dealers in the oilmarkets.*

*The reason is quite clear. If an unexpected event or some political developments take place such that, they reduce or halt the oil production of a major producer, the world oil market will quickly face a crisis; as there are no adequate excess capacities to fill the relevant gaps. Hence, consumers have no other alternative but to rely on their own oil stocks.*

*However, the increasing trend of the world oil consumption raises another issue and that is, ambiguity about sources of oil supply in the coming years.*

*Without any doubt, exploring new oil sources is not easy anymore. Thus, enhancing production capacities is becoming more difficult and very costly. And as a result, the existence of great volumes of unused capacities as in the past is less possible particularly because, major oil producing countries are not only financially in a weaker position but also are faced with more complex problems.*

## Historical Facts

The review of excess capacities in the past shows that there was no considerable OPEC excess capacity during 1960s. But, it began to rise from mid 1970s and in 1977, it reached its peak of 7.5 mbd.

After the great victory of the Islamic Revolution of Iran, and the sharp rise in oil prices, the world oil market called for more OPEC production and thus bringing on stream part of OPEC members idle capacities. Hence, in 1979, the organization's idle capacity fell to about 3.3 mbd.

However, in 1980s the trend was reversed and by mid 1980s, it reached a very high and unprecedented figure of 13.961 mbd.

In fact, in 1985, OPEC faced with a 46.5% excess capacity. Generally, throughout 1980s, in comparison with other decades, OPEC had the largest volume of excess capacity; especially, in mid 1980s, when OPEC tried to support prices by repeatedly cutting its production. But, it was very difficult for some OPEC members to maintain their idle capacities.

Therefore, they tried to obtain more market share by employing some volumes of their excess capacities.

As a result, oil prices faced a sharp decline in 1986, and never again reached their past levels. Moreover, the excess capacities were gradually reduced in the second half of 1980s therefore, by the end of that decade, the total excess capacity was only half of the volume in mid 1980s, and this stayed at 6.9 mbd.

In 1990, Iraq's military invasion of Kuwait, put the two major oil exporters out of the picture. Thus, idle capacities were quickly reduced and reached to only 1 mbd, as OPEC in an emergency meeting decided to lift production limits and do away with quota system.

It called on all members to produce