Iran, OPEC, and the World Oil Market: An Analysis of the Data Behind the Quota Disputes

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The issues of Iran's quota and whether Iran is overproducing or not, has been cited as a key element weakening the price of oil in the recent past. That Iran had agreed to cut back production by 305 thousand barrels per day (kb/d) is not in dispute. What is in dispute is the level from which the production should be cut back. In other words, what is the baseline of production? Iran insists that the baseline production should be 3.942 million b/d. OPEC, relying on selected secondary sources, puts Iran's baseline production at 3.623 million b/d. It appears that in the spirit of cooperation, Iran was inclined to reach an agreement with OPEC. Later Iran reiterated its position on production baseline for March 1998 and so informed OPEC in written communications after both the June and November OPEC meetings.

This dispute has been cited as one of the reasons behind the uneventful OPEC meeting in Vienna in November 1998. Along with Venezuela, which is apparently 125 kb/d short of its pledged 525 kb/d output cut, many are holding these two countries responsible for the lack of recovery of oil prices despite OPEC's valiant efforts to reduce output.

Is Iran Really Overproducing or Simply Refining and Consuming More Oil?

Whether Iran is overproducing or not, boils down to understanding the details of the Iranian data. We believe that most analyses of the Iranian oil industry, have not taken into account serious changes in Iran's refining and oil trade data.

We have requested and received detailed Iranian data which are quite consistent with our own data and analysis of the market. While we cannot independently ascertain what exactly the Iranian production was in the first quarter of 1998, we feel comfortable that the Iranian data is generally and directionally in line with our own data independently obtained over a long period of time.

There is little doubt that Iran's oil refining capacity increased significantly in early 1998. As shown in Tables 1 and 2, Iran's refining output had slowly increased from the 1993 level of 1.088 million b/d to 1.134 million b/d in 1997. This corresponds to crude feeds of 1.14 and 1.19 millionb/d, respectively. In 1998, the full commissioning of the long delayed Bandar Abbas refinery as well as an almost 50 kb/d debottlenecking at Abadan refinery increased the refinery output by nearly 220 kb/d and the additional feed by 230kb/d. Iran's refinery capacity currently stands at 1.524 million b/d as shown in Table 3.

The key factor behind Iran's addition to capacity is the rising oil demand in Iran and prospects of larger and larger oil imports. Several years ago, Iran instituted regular price increases to slow down demand for oil products. While these policies were initially highly effective, their impact has began to wear down. In 1998, we estimate oil demand in Iran will rise by 83 kb/d or over 6 percent. Gasoline demand alone is likely to grow by some 10 percent in 1998.

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Table 1
Iran's Refinery Production and Product Balances
(thousand barrels per day)

Year	Refinery Output	Refinery Feed	Imports	Exports (Fuel Oil Only)
1993	1,088.7	1,137.2	131.7	110.6
1994	1,120.6	1,170.6	131.4	119.2
1995	1,119.3	1,177.8	138.0	113.7
1996	1,130.8	1,185.5	135.0	105.8
1997	1,134.7	1,190.0	165.1	138.4
1998*	1,354.3	1,420.0	31.4	235.3

Note: *January to October 1998.

Table 2
1997 vs. 1998*
(thousand barrels per day)

	Volume	% Change
Additional Refining Output	219.6	19.30
Additional Crude Feed	230	19.30
Reduced Imports	133.4	81
Increased Exports	96.9	70
Change in the Net Product Trade	230.6	—

Note: *January to October 1998.

Table 3
Iran's Refining Industry, 1998
(thousand barrels per day)

Unit/ Location	Crude Distri-tion	FCCU	Hydro-cracker	Cat. Refor-mer	Vis-breaker
Northern Refiners					
Tabriz	112	—	18	11.12	16.5
Tehran	225	—	29.4	27.27	35
Arak	150	—	24.5	21.6	27.3
Isfahan	265	—	30	29.5	38
Kermanahah	30	—	—	2.8	—
Total	782	—	101.9	92.28	116.8
Southern Refiners					
Shiraz	40	—	9.28	6.2	9
Abadan	450	30	—	26	—
Bandar Abbas	232	0	28	36	31
Lavan	20	—	—	—	—
Total	742	30	37.28	68.2	40
Total Capacity	1,524	30	139.18	160.84	156.8

The significant increase in Iran's refining capacity explains the drastic changes in Iran's oil product trade. Iran has long been an oil product importer. Between 1993 and 1996, Iran's oil imports were in the range of 131 to 138kb/d, consisting of gasoline, kerosene, and gasoil. In 1997, Iran's product imports rose to 165 kb/d (see Table 4). Meanwhile, Iran has consistently been an exporter of fuel oil from Abadan. Fuel oil exports in 1996 were 106 kb/d and 1997 exports were 138 kb/d.

Table 4
Iran's Product Imports
(thousand barrels per day)

	1997	1998*
Gasoline	42	31.4
Kerosene	53.8	0
Gasoil	69.3	0
Total	165.1	31.4

Note: *January to October 1998.

The data for the first 10 months of 1998 suggest a

dramatic change. Imports declined by 133 kb/d with the start up of the new refinery units. Kerosene and gasoil imports in 1998 were non-existent for the first time in a decade. Gasoline imports fell by over 25 percent. All in all, Iran's product imports fell by 81 percent between 1997 and 1998. Meanwhile, exports of fuel oil rose drastically by 70 percent to nearly one quarter of a million barrels per day. *In short, Iran went from a net product importer to a net exporter with a total change in the net product trade of over 230 kb/d.* This happened concurrently with the increase in oil demand of some 80 kb/d.

Iran's Crude Oil Production, Exports, and Refining

The crude oil production data reported by NIOC and the average of six secondary sources used by OPEC, establishing the baseline, have never been consistent. Indeed, according to NIOC compiled data from 1993 to 1997, the secondary sources reported Iran's production higher than NIOC's data. Indeed, in 1993, secondary sources reported a higher production than NIOC by a massive 218 kb/d! Since 1998, the tables have turned. The secondary sources have reported lower production than NIOC by an average of 150 kb/d for the first 10 months of the year. The difference for March 1998 of over 300 kb/d is the largest and for June 1998, the smallest at 30kb/d as shown in Table 5, supplied by Iran's Ministry of Petroleum.

Iran's oil exports moved from 2.2 million b/d in January 1998 to 2.6 million b/d in April 1998, before dropping to under 2.4 million b/d in May 1998. Between July and October 1998, Iran reports exports were at around 2.2 million b/d.

While Table 5 reflects the Iranian position, it is consistent with the data shown earlier on refining and trade. It reflects the new capacity additions, stockbuild for refining and some de-stocking later.

Table 5
Iran's Crude Oil Production and Disposition
(thousand barrels per day)

Year	Crude Oil Production, NIOC	Export	To Refinery	Crude Oil Production Average of 6 Secondary Sources	Difference*
1993	3,425	2,288	1,137	3,643	-218
1994	3,595	2,424	1,171	3,600	-5
1995	3,595	2,417	1,178	3,607	-12
1996	3,595	2,409	1,186	3,666	-71
1997	3,603	2,413	1,190	3,654	-51
1998+					
January	3,782	2,155	1,263	3,619	+163
February	3,795	2,205	1,271	3,611	+184
March	3,925	2,474	1,342	3,623	+302
April	3,781	2,605	1,412	3,725	+56
May	3,776	2,378	1,426	3,582	+194
June	3,778	2,556	1,445	3,748	+30
July	3,624	2,200	1,424	3,550	+74
August	3,620	2,202	1,418	3,408	+212
September	3,615	2,205	1,410	3,453	+162
October	3,618	2,206	1,412	3,420	+198

Notes:
*Crude oil production, NIOC minus crude oil production average of 6 secondary sources.
+Includes stock build for the Bandar Abbas refinery.
Source: NIOC/Ministry of Petroleum.

Conclusions

The average data from secondary sources shown in Table 5 do not reflect any production change during the commissioning of Bandar Abbas refinery or the debottlenecking of the Abadan refinery. Nor do they reflect the massive shift in Iran's product trade position or increasing domestic demand. Basically, the average number of the secondary data is not consistent with the changing refining, oil demand, and oil product trade position of Iran.

Again, while we cannot say with certainty which are the accurate numbers, it is pretty clear that the secondary sources did not fully account for important changes in the structure of Iran's oil industry.

It seems reasonably clear that Iran's additional refining capacity, high domestic oil demand, and changes in oil product trade position, imply that Iran's production could not be far off from the levels claimed by Iran. It is possible, and even likely that the secondary sources not having access to updated export/import and domestic demand surge data, as well as the exact timing of the commissioning of Bandar Abbas or debottlenecking of Abadan, underestimated Iran's production in March 1998. Clearly, a big part of the difference of 300 kb/d between Iran's official position and the secondary sources can be explained by the change in Iran's product trade position of 230 kb/d and the higher domestic demand of some 80 kb/d. It is our general belief that Iran under the current Oil Minister is less inclined to violate OPEC agreements than ever before and that Iran is unlikely to risk internal and external criticism for the sake of an additional production of 300 kb/d. We detect a strong conviction on the part of Iran that they have been misunderstood and misinterpreted in this particular instance. This explains their reluctance to change their stance more than the potential revenue gains from 300kb/d at prices of under $10 per barrel!

Finally, is Iran really responsible for the low oil prices? While apparent OPEC discord for whatever reasons weakens the oil price, we think there are other factors behind the weak oil market than Iran, or for that matter, Venezuela. An additional 300-400 kb/d would not bring the price of oil down to these levels. *The problem is elsewhere.* In 1997, world oil demand grew by nearly 2 million b/d of which Asian demand growth was 639 kb/d or nearly one third. In 1998, Asian oil demand did not grow, but actually fell by 450 kb/d. The net change in Asian oil demand position was 1.1 million b/d although the Asian demand decline was actually quite small. The result was a drastic drop in global oil demand to only 600 kb/d for 1998. In other words, *in 1998, oil demand growth was 70 percent lower than the 1997 growth* (see Table 6). Another important factor affecting the price of oil is the significant decline in the cost of finding and developing new oil through technological breakthroughs as well as the return of international oil to the key oil producing countries. These are the real explanations behind the current lower oil prices.

Table 6
Global and Asian Oil Demand Growth
(thousand barrels per day)

	World Oil Demand Growth	Asian Oil Demand Growth
1997	1,980	639
1998	600	-450
1999	1,200	400

For 1999, we expect Asian oil demand to rise by 400kb/d and global oil demand growth to be twice as high as 1998, but still smaller than the 1997 growth. This should help keep WTI prices in the $13-15 per barrel range and help slightly increase the call on OPEC oil.