361st Regular Meeting for Briefing Research Report April 12, 2000

Crude Oil Prices after the OPEC Meeting

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Purposes of the Study

Crude oil prices in the international oil markets have been surging upward since the beginning of 1999. In March 2000, the futures price for the West Texas Intermediate (WTI), the benchmark crude oil in the United States, temporarily went up to pass $34 per barrel. At the 109th ordinary meeting, held in end-March 2000, the Organization of Petroleum Exporting Countries (OPEC) decided on production increases in order to stabilize crude oil prices. Yet, there remains uncertainty about how crude oil prices will move in months ahead, and much attention is now being paid to oil price movements after the OPEC meeting. Under the circumstance, the study focuses on an analysis of the fundamentals of oil supply and demand. It then analyzes the characteristics and impacts of the price determination in crude oil futures markets that have led the surge in oil prices. Finally, the study looks ahead into short-term crude oil price developments.

Summary of Findings

1. OPEC decided to raise the production ceiling for its nine member countries, excluding Iraq against which U.N. sanctions are maintained, and Iran, which refused to take part in the agreement, by 1,452,000 barrels per day (b/d), starting in April 2000. Now that the actual output by the nine OPEC member nations has already exceeded the before-hike production quota by nearly one million b/d, supplies will actually be increased by this decision to around 500,000 b/d. However, because Iran, which did not participate in the agreement, Iraq and non-OPEC countries such as Mexico and Norway are also set to increase oil production, the world's oil supplies after the March OPEC meeting will increase at least by one million b/d compared to production level in February 2000.
2. Despite this anticipated supply increase, there is a strong likelihood that oil supply and demand balances in the world will remain tight in 2000. This is because, while oil demand in the world, particularly in Asia and the United States, is increasing steadily and oil production by non-OPEC countries is growing only moderately, the recent OPEC production increases are far from enough to replenish oil inventories that have already been declining to a very low level. Rather, without additional increase in output by OPEC countries in the latter half of this year, there may be another substantial oil inventory draw down in the international market. Judging from the fundamentals of supply and demand, therefore, crude oil prices in 2000 will

not drop significantly from the present level. WTI crude prices are likely to hover around $24 to $26 per barrel in the rest of this year.

3. Of note is, however, that short-term crude oil prices are now largely affected by the sentiment of participants in oil futures markets and speculative trading by non-commercial traders, like funds, who have no direct interest in the oil industry. Price fluctuation not closely connected with the fundamentals of supply and demand, drastic and substantial price change triggered by some events, or oil prices over/under shoot can be caused in oil futures market because of such factors as: market psychology can become too bullish or bearish; non-commercial traders, like funds and general investors, tend to decide to increase or decrease positions in crude oil futures market in the context of investment portfolio among various financial and commodity markets, and non-commercial traders often make much use of "technical analysis," many of which are of trend-following nature, in their trading.
4. Therefore, depending on change in market psychology and transactions by speculators, or unexpected changes in the fundamentals of supply and demand, there is no denying that crude oil prices will follow a totally different course from the price range ($24 - $26/barrel) expected from analysis on supply and demand fundamentals. If some unexpected events such as accidents in the supply side and a supply cutoff by Iraq take place or speculators increase their long position sharply for some reasons, then market psychology may take a quick turn to become bullish and futures prices for crude oil may rise sharply to further boost the bullish tone. In this case, crude oil prices will pick up once again toward the $30 mark. Conversely, if some unexpected events such as oil demand decline due to recession in Asia and the United States or significant quota violation (over production) by OPEC countries take place, or if Iran's refusal to participate in the recent OPEC agreement is taken as an overly bearish factor, or if speculators increase short positions substantially because they consider crude oil prices are now still at a "high level", then market psychology may become too bearish and futures prices may go down to produce a cycle of bearish tone. In this case, crude oil prices will drop sharply to around $20.

1. Background of a Sharp Rise in Crude Oil Prices Since 1999

1.1 Fundamentals of the Tightened Oil Supply and Demand Situation in the World

WTI crude futures prices in the New York Mercantile Exchange (NYMEX) in the United States declined to below $11 per barrel in December 1998. In March 1999, however, WTI crude futures prices took a sharp upturn and since then kept rising; they reached $20 in July and $25 in November, and finally topped the $30 mark in February 2000. On March 7, 2000, WTI futures prices registered an all-time high at $34.13, the highest ever recorded since the Gulf War.

There were several factors behind this sharp price increase. First, oil demand in Asian countries, which recovered from the economic crisis unexpectedly quickly, took an upward turn in 1999 and remained firm since then. Second, as a result of depressed crude oil prices, which continued up until the beginning of 1999, oil production by non-OPEC countries dropped below the year-ago level in 1999. Third, OPEC countries and some non-OPEC oil producers implemented coordinated production cutbacks since March 1998 and succeeded in achieving a substantial curtailment of oil production as a result.

The OPEC production cutback agreement, which was enforced three times, amounted significantly to 4.32 million b/d that was equivalent to nearly 6% of the world's oil supplies. Since March 1999, in particular, the OPEC production cutback policy received support from such factors as rapprochement of Saudi-Iran relation and strengthened cooperation to OPEC policy by the new Chavez administration in Venezuela. In this favorable circumstance, the OPEC members' compliance to the agreed production cutback was maintained at "high level" during 1999. These factors contributed greatly to the tightness in oil supply and demand balance in the world.

Thus, oil supply in the international oil markets had continued to be less than oil demand since the first quarter of 1999 and the oil inventories continued to decline as a result (Figure 1). According to the statistics of the International Energy Agency (IEA), the OECD oil stock decreased from 4.03 billion barrels at the end of the third quarter of 1998 to 3.71 billion barrels at the end of 1999. The year-end oil inventory of the OECD declined to the lowest ever over the past ten years.

Hence a dominant factor behind the sharp rise in crude oil prices was the actually tightened fundamentals of supply and demand in the international oil markets.

1.2 Characteristics of the WTI Crude Futures Market Leading the Spurt in Crude Oil Prices

WTI crude futures transaction in the NYMEX is playing a critical role in determining crude oil prices in the international petroleum markets. Crude oil prices determined in active transactions in the NYMEX, where trading volume reached at 103.73 million b/d in 1999, are affecting the prices for other benchmark crudes like the North Sea Brent and the Middle East Dubai crude, and influencing selling prices for the Middle East crude and other crude oil being traded in international markets.

Crude futures prices in the NYMEX appear to be influenced not merely by the abovementioned oil supply and demand situation in international markets but also by the oil supply-demand picture in the United States, market psychology in the oil futures markets, and speculative transactions being performed by non-commercial traders like funds and general investors who have no direct interest in the petroleum industry (Figure 2).

Market psychology is affected by news on the OPEC decision, an announcement of inventory statistics, statements by the leaders of oil producing countries, and actual price movements. Looking at the trends in crude futures trading in the NYMEX, transactions become really active in response to OPEC meetings and inventory statistics announcements in the United States, etc. Crude oil futures prices in the NYMEX are changing in response to market psychology, bearish or bullish.

Transactions by non-commercial traders have some important points to note. First, amount of fund being handled by some non-commercial traders like hedge funds is very large. Second, for these traders, crude futures markets are no more than one of those diverse fund operation and investment markets such as stock, bond, currency and other commodity markets. Whether to invest or withdraw funds seems to be determined by the optimum portfolio. In addition, speculative traders often use so-called "technical analysis" such as trend line analysis and moving average analysis. There are many who point out that speculative interests are exerting a greater influence on the determination of crude futures prices in the NYMEX. In fact, WTI crude futures price movements correlate closely with the long or short positions of non-commercial traders (Figure 3), although it is not possible to identify which one is a cause or a result.

Market psychology sometimes becomes too bullish or bearish. Non-commercial traders invest funds based on the portfolio and they frequently use trend-following technical analysis. These characteristics may cause crude futures prices to fluctuate without regard to the fundamentals of supply and demand in the short term. And because of these characteristics, drastic and substantial price change may be touched off by some events, or oil prices fluctuation may be exaggerated (Figure 4). Although it is difficult to verify that these possibilities have come true, there is a strong likelihood that crude futures prices have been fluctuating substantially in recent years as a result of the net effects of the abovementioned changes in market psychology and behavior of non-commercial traders.

2. Decision of the 109th OPEC Ordinary Meeting and Its Implications

2.1 Background of the Decision on Production Increase

As the year 2000 opened, the rise in crude oil prices continued to such an extent that crude oil prices topped the $30 mark. Oil producing countries then became cautious of excessively high prices, because overly high prices will decelerate the world economy which will result in decrease oil demand in the world. Higher oil prices will promote oil production by non-OPEC countries which are competitors of the OPEC members, and will stimulate the development of natural gas and other energy sources replacing oil. For the OPEC, excessively high oil prices are far from

desirable from the long-term point of view.

However, the OPEC's recent decision on production increase designed to actually stabilize oil prices is primarily the result of an effort by the United States government to call on oil producers to boost production. Because of a drop in inventory levels and a cold wave, heating oil prices have soared and then gasoline prices have picked up in the United States. With a presidential election due to take place in November 2000, therefore, the oil price issue has become an important political issue for the United States to handle. The U.S. government, which has basically refused to endorse a plan proposed by some senators to release Strategic Petroleum Reserve (SPR) in order to stabilize oil prices, has started to consider or implement other policy measures (Table 1). As a primary part of these measures, the U.S. government has called on oil producing countries to boost output. On behalf of the U.S. government, Energy Secretary Richardson has visited major oil producing nations such as Saudi Arabia, Venezuela and Kuwait and earnestly appealed the leaders of these countries to raise output.

In response to the request and "pressure" from the U.S. government, major oil producing countries have made up their minds to boost oil production. Until around January 2000, almost all of the OPEC member nations had expressed their intention of maintaining production restraints after April 2000. In March 2000, however, Saudi Arabia, Venezuela and other OPEC nations, and Mexico and other non-OPEC countries have changed their policy and recognized the necessity of production increase so as to stabilize markets.

2.2 Characteristics and Implications of the Production Increase Agreement

Under these circumstances, the OPEC members sat for the 109th ordinary meeting in March 27 through 29, 2000, in Vienna, Austria. At this meeting, the OPEC formally decided to raise the production ceiling for nine member nations, excluding Iraq against which U.N. sanctions are maintained, and Iran, which refused to take part in the agreement for the reasons described later, by 1,452,000 b/d, starting in April 2000. The production ceiling for the nine OPEC members, which agreed to boost production in April, comes to 21,070,000 b/d, a level that was agreed upon in June 1998 (Table 2).

What is noteworthy regarding this decision is that Iran did not take part in the production increase agreement. A direct reason for Iran not to participate in the agreement is this: Because Iran had concern about a possibility of crude oil prices falling sharply due to an excessively large production increase, the nation strongly opposed to a proposal put forward by Saudi Arabia and other nations to raise the production ceiling by 1.7 million b/d. No compromise was reached as a result. It is also pointed out that the limited amount of surplus crude production capacity in Iran was another background of Iran's decision not to join the agreement. In addition, apparent pressure from U.S. government to boost production might make it difficult for Iran to join the agreement, because of its repulsion toward the U.S. pressure and domestic policy consideration. Nevertheless, although it did not participate in the official production increase agreement, Iran has come out with a policy of boosting production independently. As a result, therefore, the production increase agreement

reached by the OPEC at its recent meeting is tantamount to an additional quota of 1.7 million b/d.

It should be noted, in this connection, that the recent increase in the production ceiling "on paper" does not result in a net increase of same amount in actual oil supplies. Because the pre-meeting production of crude oil by the ten OPEC member nations, including Iran, is believed to have exceeded the then production ceiling (22.98 million b/d) by one million to 1.2 million b/d, a net increase in oil supplies will be limited to somewhere between 500,000 and 700,000 b/d if oil producers start to produce oil just in line with the new production ceiling in April. Still, the world aggregate oil supplies are expected to show a net increase of at least one million b/d or so after April compared to the production level in February 2000 (Table 3). This is because non-OPEC countries such as Mexico, Norway and Oman, which had so far restrained production in cooperation with the OPEC members, have decided to attain a total production increase of 300,000 b/d or so after April. In addition, Iraq, which is under U.N. sanctions and had not participated in the production cutback arrangement, has expressed an intention of raising output.

Yet another notable point about the recent OPEC meeting is that although the OPEC did not officially announce it, news media reported that the OPEC agreed on a crude oil price target range scheme designed to stabilize oil prices. This scheme is intended to keep basket prices for the OPEC reference crude oils within the range of $22 to $28. Under this scheme, if crude oil prices continue to deviate from this price range for 20 days or more, a supply adjustment of 500,000 b/d for the member countries as a whole will automatically be carried out (Table 4). The aim, it seems, is to bring "soft landing" from high prices over the $30 mark to a reasonable level and, in so doing, prevent substantial price fluctuations that are not desirable for oil producing countries, such as a steep fall in oil prices as a result of speculative transactions in futures markets. This scheme represents a new approach totally different from the conventional OPEC policy dictating that meetings will be held twice a year and a substantial production increase or cutback will be decided depending on circumstances. The scheme is the OPEC's new initiative that deserves attention as it is designed to stabilize crude oil prices. This decision and "its announcement" are certain to have an influence over market psychology. Yet how well this scheme will function actually remains to be seen. Moreover, the target price range set in this scheme is basically too high to maintain in the medium-to-long term. The reasons for this will be described later.

3. Prospects for Crude Oil Prices

3-1. Outlook for Crude Oil Prices as Viewed from the Fundamentals of Supply and Demand

The trend in the fundamentals of supply and demand serves as a yardstick whereby to predict how crude oil prices in international oil markets will move in 2000.

First, oil demand is predicted to increase firmly as Asian countries are expected to attain an economic growth rate of 4% to 6% in 2000. The United States, the world's largest oil consumer, is also expected to see a continued growth in the demand for oil

in general and gasoline in particular. In addition, in the second quarter of the year, crude oil demand is likely to grow firmly in the United States for a number of reasons, such as: gasoline demand reaches its peak in the summer driving season, the oil refining margin is improving in 2000, and backwardation in crude futures price curve is flattening, thus improving economics of buying prompt barrels. Overall, the world oil demand is predicted to show a steady increase in 2000. According to the forecasts by the IEA, the world oil demand in 2000 is expected to increase by 2.1% (1.6 million b/d) over the year to reach 76.9 million b/d.

Turning to the supply side, oil production by non-OPEC countries is expected to increase moderately by one million b/d or so in 2000. Despite the recent upsurge in oil prices, non-OPEC oil production is growing relatively slowly because international oil companies are now taking a cautious attitude toward a substantial increase in investment in the upstream sector as they are giving the highest priority to improve efficiency in its management and operation and cost reductions, and they have consernes over instability (high volatility) about crude oil prices.

In order to look into the world oil supply-demand balance, based on these projections about oil demand and non-OPEC oil production, the following two cases are assumed with respect to the outlook for the OPEC oil supplies. For the nine OPEC nations, which have agreed to boost oil production, consideration is given to the two cases:

Case A: After the recent production increase agreement, there will be no formal agreement on additional output increase. And the production cutback compliance rate will be 85% in the second quarter of 2000, 75% in the third quarter and down to 65% in the fourth quarter.

Case B: Up until the second quarter of 2000, things will move in the same direction as in Case A, but additional production increase of 1.5 million b/d will be decided at the next meeting and the compliance rate will be 85% in the third quarter of 2000 and 75% in the fourth quarter.

Moreover, it is assumed that Iran will attain the production of 3.6 to 3.7 million b/d, a level close to its production capacity, after the second quarter of 2000, while Iraq will increase production slowly to reach 3 million b/d by the end of 2000.

An analysis of these cases shows that in Case A, oil supply will exceed demand and there will be an inventory buildup of 800,000 b/d or so in the second quarter of 2000, but stocks will run down again by over one million b/d in the fourth quarter of the year (Figure 5). In Case B, where larger supplies are assumed, inventories will also be drawn down slightly in the fourth quarter of the year. Given the recent production increase agreement by the OPEC, suggestions are that the world oil inventories will not change so dramatically from the present low level. Analyzing the trends, based on these assumed fundamentals of supply and demand, therefore, there is a strong likelihood that the tightness in supply and demand balance will continue in international oil markets in 2000.

3.2 Possibility of Oil Price Surge/Decline Taking Account the Effects of Market Psychology and Behavior of Non-Commercial Traders

As far as the fundamentals of supply and demand indicate, crude oil prices in 2000 are unlikely to decline significantly from the present level, backed by a relatively tight supply-demand situation. Conversely, oil inventories will be drawn down to a considerable degree once again in the latter half of the year, so that oil prices may strengthen. When these possibilities are taken into consideration, it is highly likely that WTI crude prices will hover around $24 to $26 per barrel from now until the end of the year.

However, this price level will not be sustainable in the medium-to-long term. This is because, when WTI crude prices are topping the $20 mark significantly, investment in the upstream sector is highly profitable and, consequently, it will substantially increase the world oil supply if there is some lead time for supply increase to be materialized. It follows, therefore, that crude oil prices is likely to be adjusted downward slowly to a sustainable price range (for instance, $16 to $22 for the WTI crude) in the medium term.

Nevertheless, as mentioned earlier, today's crude oil pricing is affected not only by the fundamentals of supply and demand but it is also largely influenced by the movements of market psychology and the behavior of speculators in futures markets. Depending on unpredictable changes in market psychology and transaction by speculators, as well as unexpected events in the fundamentals of supply and demand, there is no denying that crude oil prices in the futures markets will deviate significantly from the level ($24 to $26 for the WTI crude) that can be assumed from the fundamentals of supply and demand (Figure 6).

Psychology in the crude futures markets will become bullish quickly if, for instance, the following events occur (Figure 7):

(1) A cold wave occurs in winter; accidents happen at oil production or shipping facilities or at refineries, Iraq cuts off oil supplies if and when it toughens its attitude toward the United Nations and the United States, and other similar unexpected events take place.

(2) An announcement of statistics is made to indicate a larger-than-expected drop in inventory levels.

(3) Speculators sharply increase their long positions, based on judgement that crude oil prices will again take an upward trend for some reasons or other.

If futures prices shoot up on a bull market, a feedback loop may occur. Namely, as non-commercial traders often use trend-following technical analysis, a bullish tone will expand once again, thereby accelerating the rise in crude oil prices. If this situation happens, crude oil prices will again move up to the $30 mark and, depending on the situation, oil prices can top $30.

Conversely, market psychology will become bearish promptly if the following events occur (Figure 8):

(1) Oil demand becomes weak as a slow-down in economic activity occurs in Asia

and the United States; a mild winter and an unexpected increase in non-OPEC oil supplies take place; the OPEC decides to boost production substantially at its next general meeting; and there is a quick worsening of the OPEC production cutback compliance rate.

(2) Iran's refusal to participate in the recent OPEC formal agreement on production increase is taken as an overly bearish factor among market players.

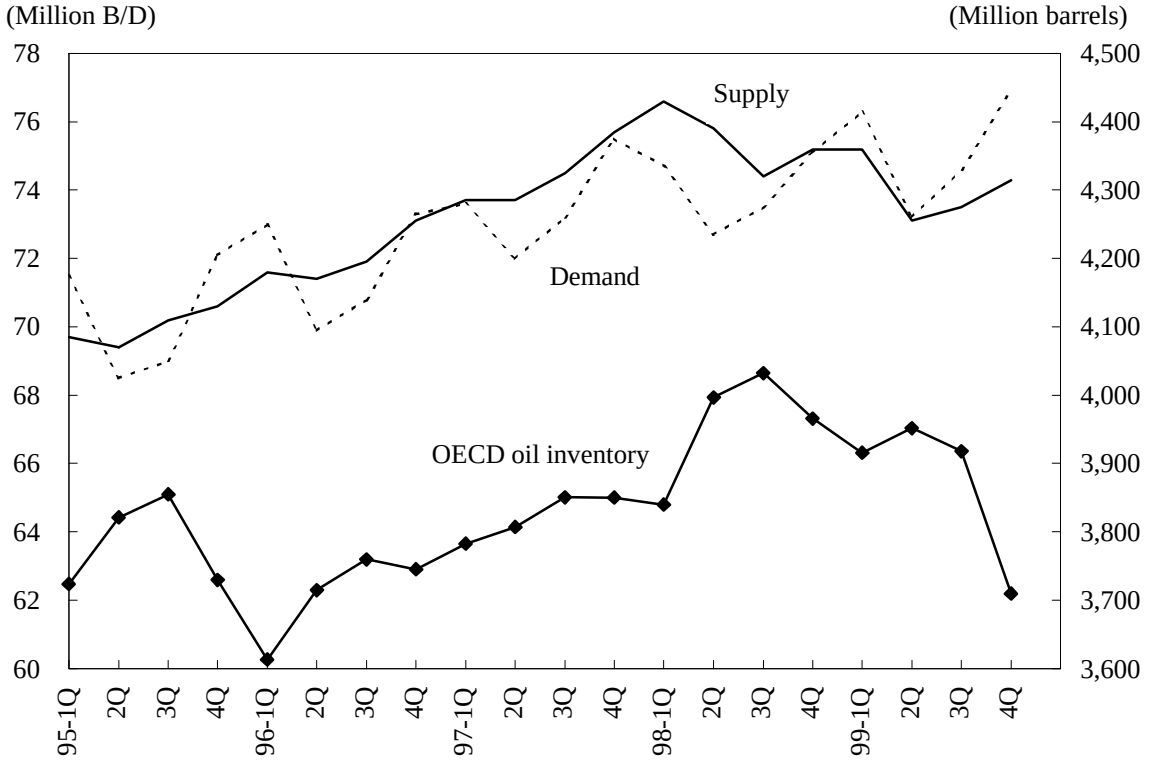
(3) An announcement of statistics is made to show a larger-than-expected increase in inventory levels.

(4) Non-commercial traders switch to a short position, based on such judgement that the WTI crude price level of $25 is historically still too high.

In this case, as crude futures prices drop, a reverse feedback process may take place and, in consequence, WTI crude prices will fall sharply to around or less $20.

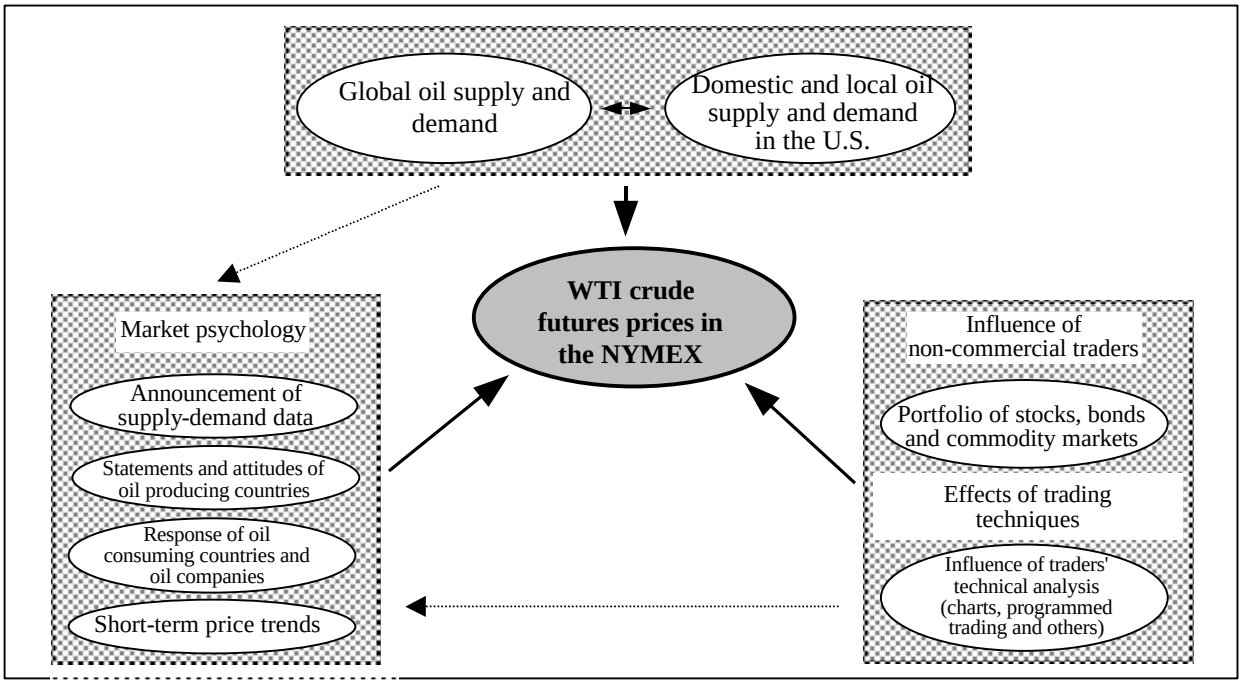
Thus, various factors such as the fundamentals of supply and demand, market psychology and the behavior of speculative traders are mutually and complicatedly correlated in the determination of today's crude futures prices. In this sense, forecasting crude oil prices is very difficult. Yet, in order to gain a more accurate understanding of the direction of price change, a further study and analysis must be made on the pricing mechanism in futures markets, in addition to an analysis of the fundamentals of supply and demand.

Figure 1. Recent Changes in the World Oil Supply-Demand Balance



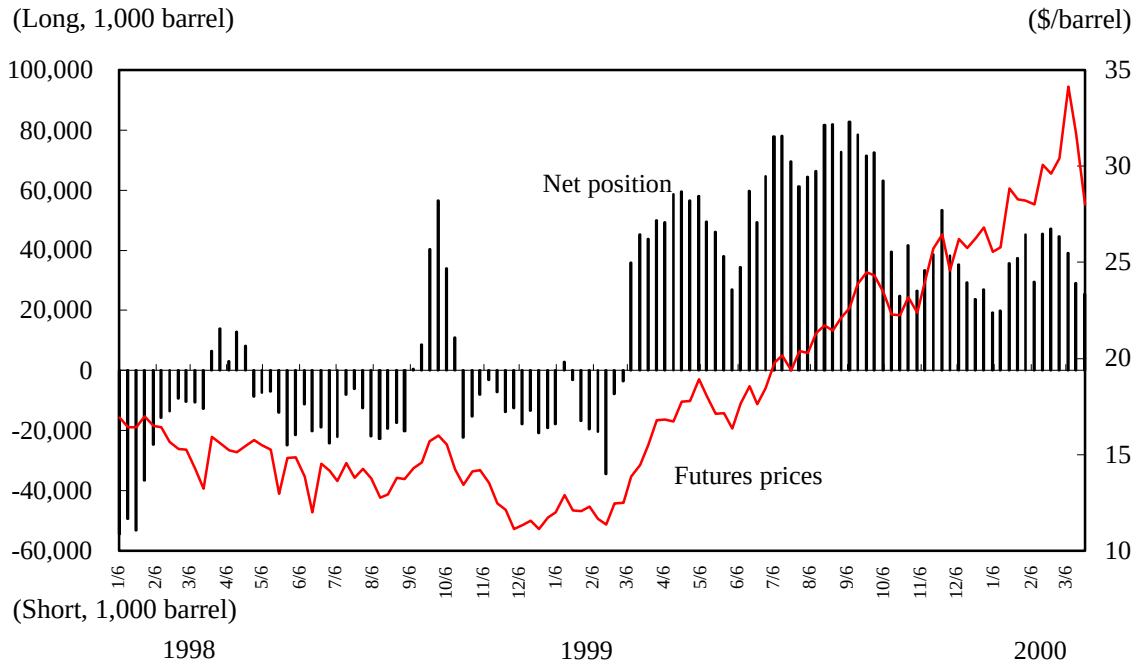
Source: "Oil Market Report," IEA.

Figure 2. Main Factors Affecting the Determination of NYMEX Crude Futures Prices



Source: Prepared by Institute of Energy Economics, Japan.

Figure 3. Positions of Non-Commercial Traders in NYMEX Crude Futures Transactions and WTI Futures Prices



Source: Prepared by Institute of Energy Economics, Japan based on data from CFTC, NYMEX, etc.

Figure 4. Impacts of Market Psychology and Non-Commercial Traders on Crude Futures Prices

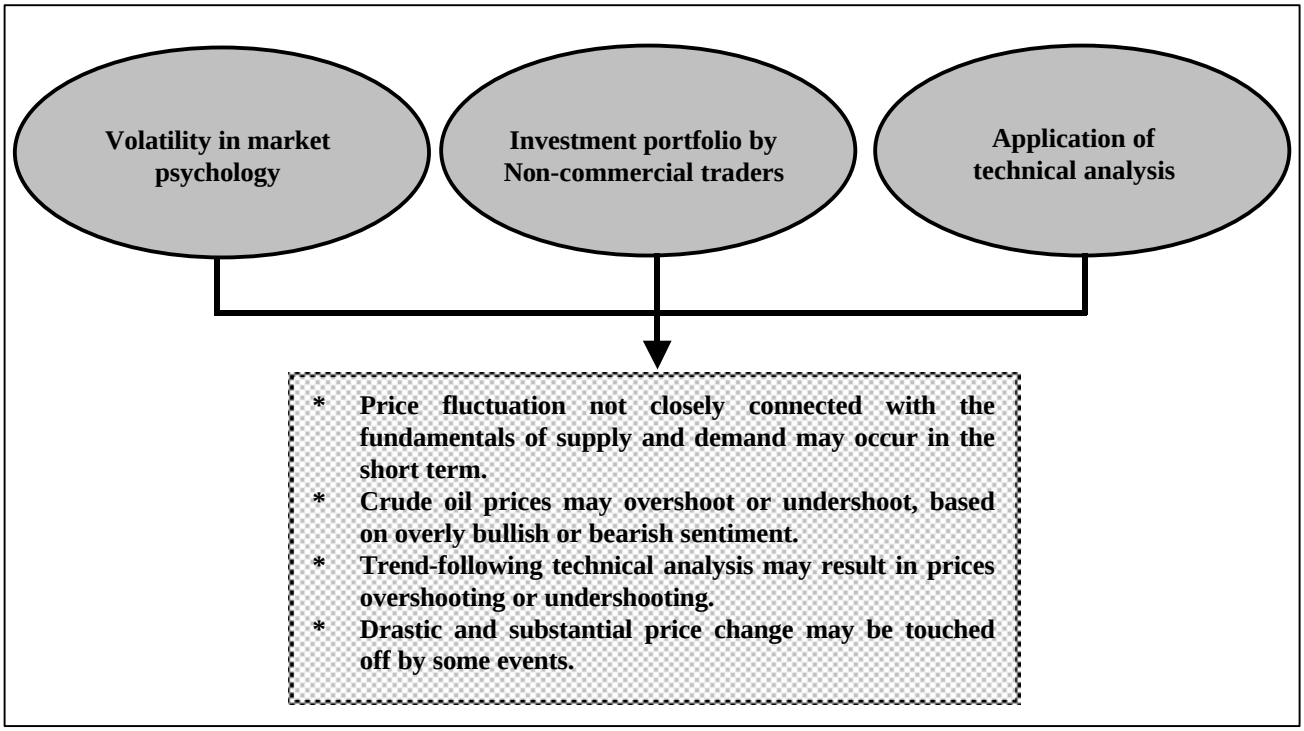


Table 1. Response of the U.S. Government to the Rise in Crude Oil Prices

In January 2000, senators from the Northeast states proposed to release Strategic Petroleum Reserve in order to stabilize oil prices.

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* Concerning the Strategic Petroleum Reserve (SPR),
  - Energy Secretary Richardson announced to postpone a buildup of SPR on January 26, 2000.
  - Senators from the Northeast states submitted a bill allowing a release of SPR so as to reduce household heating oil prices on February 2.
  - Currently, the U.S. government takes a position not to endorse a plan to release SPR for the purpose of reducing oil prices.
* Measures for heating oil
  - The U.S. government announced a plan to provide low-income families in the Northeastern states with a subsidy for purchasing heating oil early in February.
  - The U.S. government called upon oil refiners to postpone seasonal maintenance on February 10.
  - The U.S. President proposed to build a stockpile of household heating oil in order to secure supply and suppress a rise in prices on March 18.
* Response to Oil Producing Countries
  - In late February, Energy Secretary Richardson visited major oil producing nations such as Saudi Arabia, Venezuela and Kuwait and earnestly appealed the leaders of these countries to raise output.
  - The U.S. President requested King Fahd of Saudi Arabia to boost crude production on March 17.
  - The Federal Trade Commission considered commencing an investigation in relation to a lawsuit filed for violation of the Antimonopoly Act by the OPEC on March 22.
  - The U.S. House of Representatives passed a bill for reducing financial support and arms exports to oil producing countries engaged in oil price manipulation on March 22.
  - The U.S. President accorded a welcome to a decision on crude oil production increase by the OPEC on March 29.

Source: Prepared by Institute of Energy Economics, Japan based on various information.

Table 2. Highlights of the 109th OPEC Meeting

OPEC meetings	Highlights	Production cutback (in ten thousand b/d)		
		Ten OPEC countries	Non-OPEC	Total
104th extraordinary meeting (March 30, 1998)	The OPEC decided to attain a production cutback from April 1, 1998 until the end of the year. Non-OPEC countries such as Mexico and Oman cooperated with the production cutback policy.	124.5	30.1	154.6
105th ordinary meeting (June 24, 1998)	The OPEC decided to achieve additional production curtailment for a one-year period starting on July 1, 1998. Non-OPEC countries such as Mexico and Oman cooperated with the production cutback policy.	135.5	18.9	154.4
106th ordinary meeting (November 25-26, 1998)	The OPEC changed the dates of general meetings from June and November to March and September. The OPEC failed to reach agreement on additional production restraint.			
107th ordinary meeting (March 23, 1999)	The OPEC decided to carry out additional production cutback for a one-year period starting on April 1, 1999. Non-OPEC countries such as Mexico and Oman cooperated with the production cutback policy.	171.6	38.8	210.4
Total production cutback		431.6	87.8	519.4
108th ordinary meeting (September 22-23, 1999)	The OPEC reconfirmed the present production cutback policy up until end-March 2000. It was decided that Secretary General Rilwann Lukman should remain in office until his successor is decided. The OPEC decided to create a "Medium-Term Policy Committee" (which would be made up of one expert each from each member nation).			
109th ordinary meeting (March 27-29, 2000)	Nine OPEC member countries, excluding Iran, agreed upon returning production restraints to the previous levels, adopted before March 1999, starting on April 1, 2000. The OPEC decided to hold an extraordinary meeting in Vienna, Austria, on June 21, 2000. The OPEC decided to hold a ordinary meeting in Vienna, Austria, on September 10, 2000.	Production increase (in ten thousand b/d) Nine OPEC countries 145.2		

Source: OPEC Home Page and other data.
* Countries participating in the production cutback policy would use the February 1998 output as a basis, for production cutback.
** Iraq, which is under U.N. sanctions, has not taken part in the production cutback policy.
*** These OPEC meetings took place in Vienna, Austria.

Table 3. A Net Increase in Oil Supplies after the OPEC Production Increase Agreement

Unit: million B/D

	Production quota before the March 2000 meeting	Production quota agreed upon at the March 2000 meeting	Increased quota	Actual production (February 2000)	Net increase (April 2000 -)
Nine OPEC countries	19.62	21.07	1.45	20.62	0.45
Iran	3.36	(3.62)	0.26	3.54	0.08
Total of Ten OPEC countries	22.98	24.69	1.72	24.16	0.53
Iraq	-	-		2.59	NA
Total of OPEC countries				26.75	0.53
Norway					0.15
Mexico					0.10
Oman					0.05
Total of Non-OPEC countries					0.30
Total					0.83

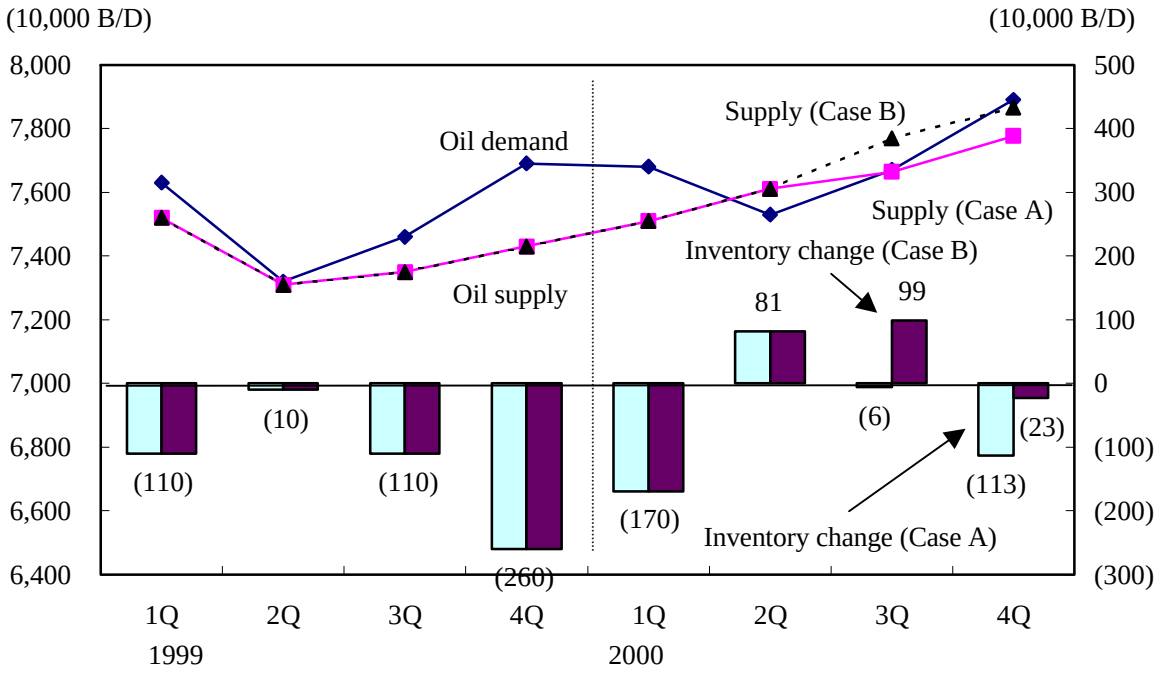
Source: MEES, April 3, 2000.
Note: Figures for the March 2000 production quota for Iran is that for June 1998.

Table 4. The OPEC's Crude Oil Price Target Range Scheme

* Outline:	(1)This scheme is intended to keep OPEC crude basket prices within the range of $22 to $28 per barrel.
	(2)To this end, if crude oil prices continue to deviate from this price range for 20 days or more, a supply adjustment of 500,000 b/d for the member nations will automatically be carried out to adjust prices. Production adjustments by countries will be based on the prorate basis.
	(3) Under this scheme, the Ministerial Monitoring Committee (Iran, Nigeria and Kuwait) will draw up a production adjustment plan, which will be carried out upon approval by the OPEC Chairman.
	(4) At the meeting, the OPEC members agreed on this scheme in principle, but this scheme was not formally announced as an official resolution.
* Purposes:	The purposes of this scheme are:
	(1) To take a flexible and quick action to the volatility of crude oil markets, including the behavior of speculative interests, and;
	(2) To secure steady national revenues from stable crude oil prices.
* Assessment:	(1) It is open to question whether the target price range set in this scheme is appropriate.
	(2) This scheme may have an influence over market psychology but how well this scheme will function actually remains to be seen.

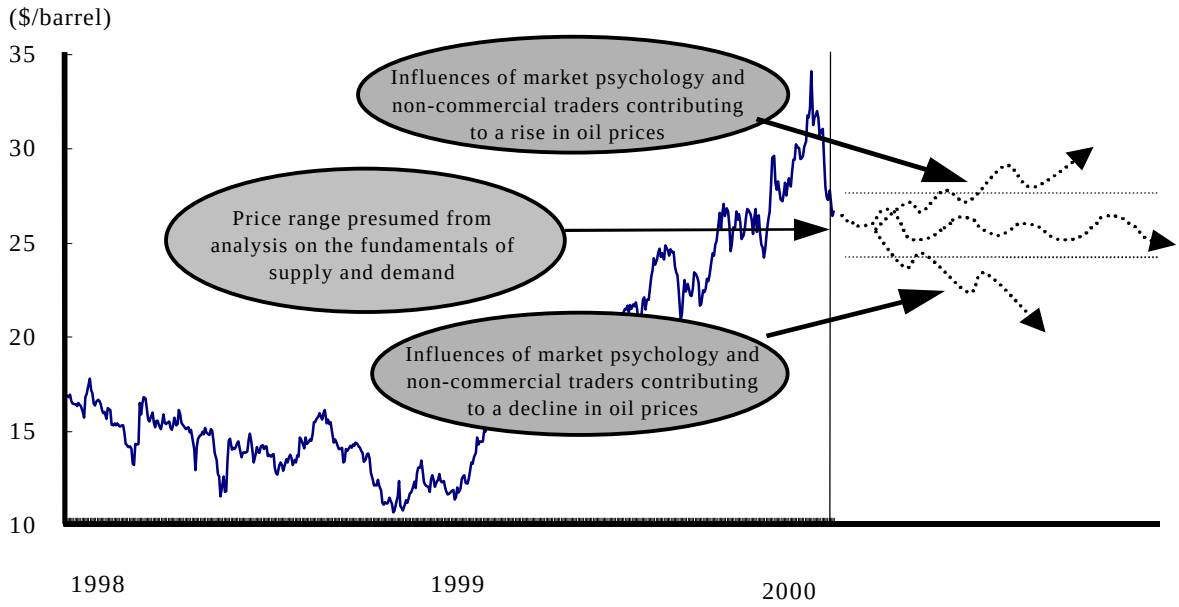
Source: Prepared by Institute of Energy Economics, Japan.

Figure 5. The Outlook for the World Oil Supply-Demand Balance



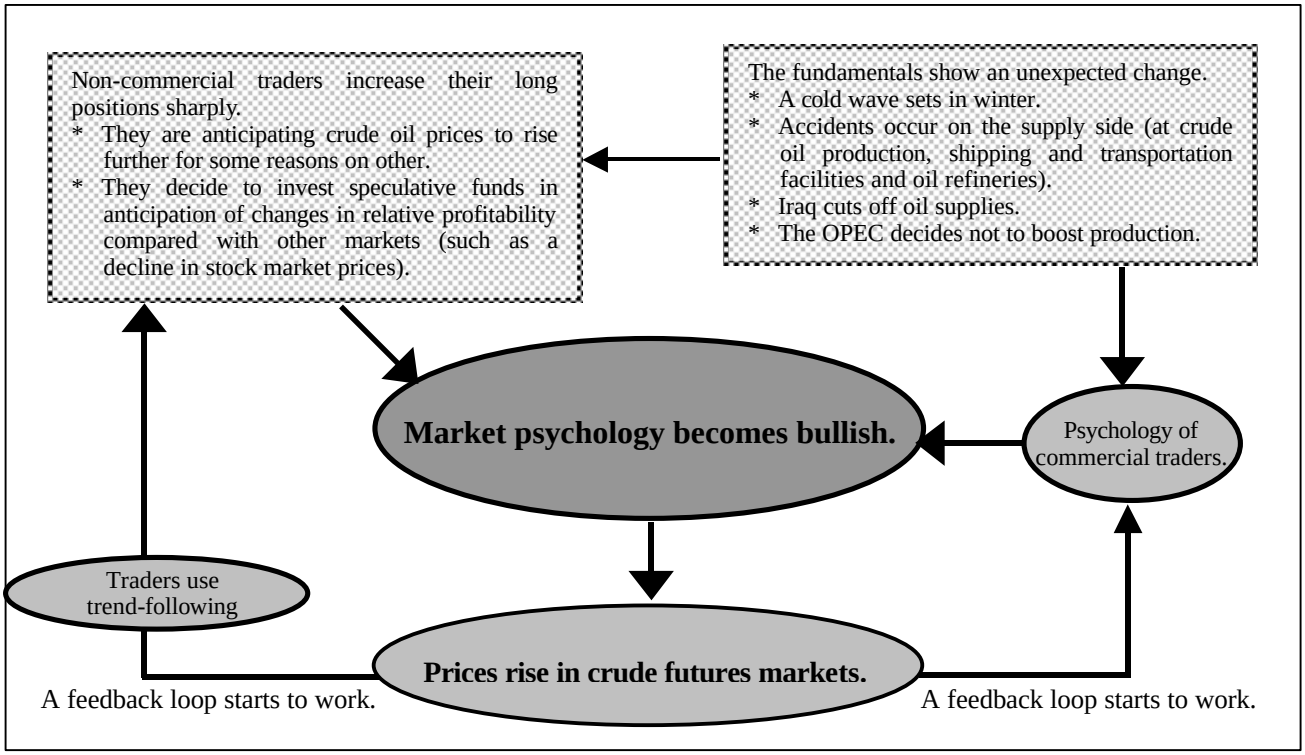
Source: "Oil Market Report," IEA for 1999 data; Institute of Energy Economics, Japan, for forecast for 2000.

Figure 6. Crude Oil Prices (WTI) after the OPEC Meeting



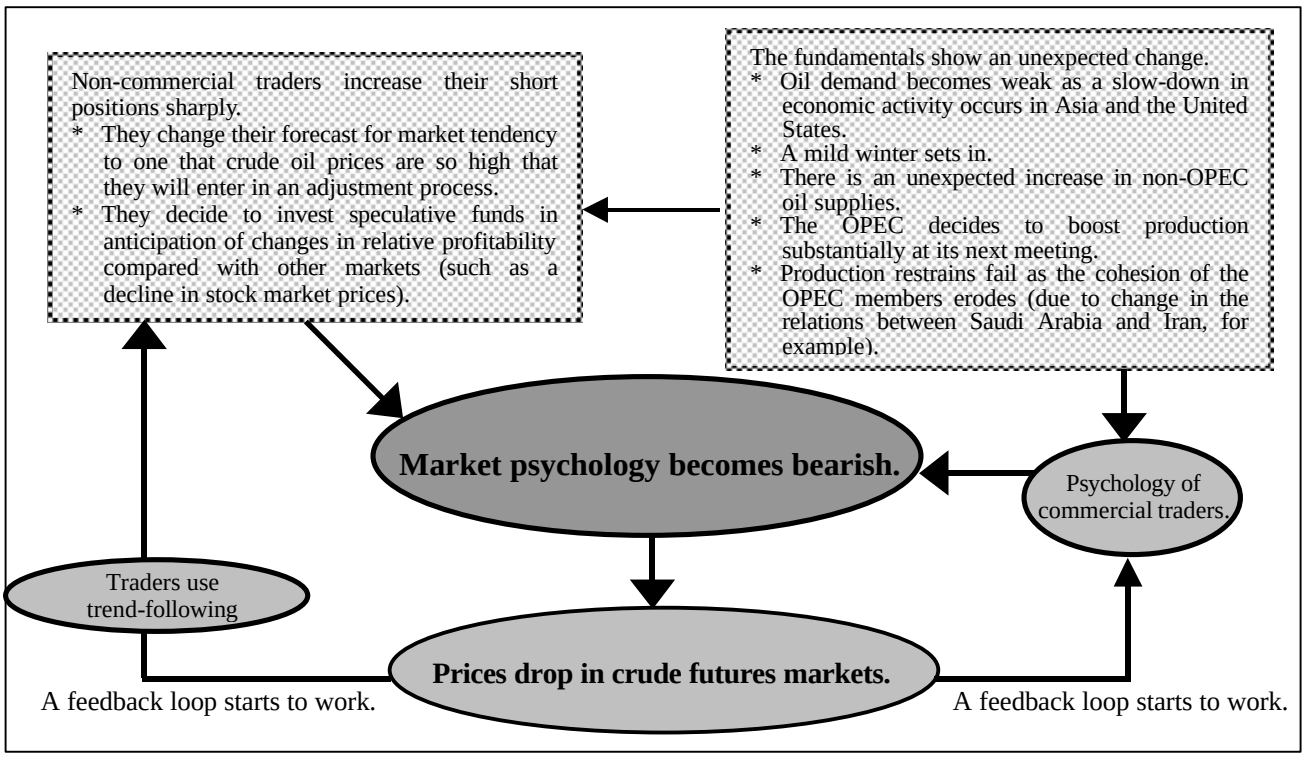
Source: Prepared by Institute of Energy Economics, Japan.

Figure 7. Scenario for Rises in Crude Futures Prices



Source: Prepared by Institute of Energy Economics, Japan.

Figure 8. Scenario for Drops in Crude Futures Prices



Source: Prepared by Institute of Energy Economics, Japan.