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MARKET FACTORS NOT PRICE "DUMPING"

An Analysis of the 1998 Oil Price Collapse

by

Petroleum Industry Research Foundation, Inc.

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INTRODUCTION

Nineteen hundred ninety-eight witnessed an unprecedented collapse in international oil prices. Since the factors that led to the decline were largely unanticipated, no producer or service company was able to escape the pain. OPEC saw its revenues decline by 35 percent or $60 billion in 1998. Oil service companies saw the demand for their services disappear virtually overnight and experienced losses in valuation, which in some cases approached 80 percent.

The global price collapse wreaked havoc with the domestic petroleum industry, particularly the independent oil companies who are generally not in a strong cash position to sustain a long period of low oil prices. According to the U.S. Bureau of Labor Statistics, employment in the exploration and production sector of the U.S. petroleum industry declined by over 67,000 since November 1997*, with well over 40,000 jobs lost from the independent oil companies alone. With the consolidation of the industry continuing more job losses are likely through 1999. The price and output declines have had predictable outcomes on industry valuations among U.S. independent producers. Analyst John S. Herold estimates that more than $20 billion in market capitalization had been lost in 1998 among the independents.[1]

Given the controversy and serious consequences to the domestic and international petroleum industry from the price collapse, the Petroleum Industry Research Foundation, Inc. (PIRINC)[2] has undertaken an assessment of the circumstances that led to this collapse. Such an assessment is of particular importance given the recent petition by some domestic producers to the Department of Commerce and the International Trade Commission requesting relief through punitive "countervailing and dumping" duties from injuries brought about by alleged "unfairly traded" imports from four oil exporting countries, Iraq, Mexico, Saudi Arabia and Venezuela. Ironically, with the exception of Iraq, these countries were leading participants in efforts by the major oil producers to reduce production starting in the spring of 1998 and stabilize prices. As for Iraq, its oil is subject to greater scrutiny than any in the world under the current UN sanctions regime. Every contract that Iraq enters into is submitted to a panel of oil experts appointed by the UN. After the panel reviews and approves the contract, it can still be rejected by any member of the UN Security Council if the member believes it does not reflect conventional acceptable commercial practices. Moreover, the Iraqi government generally prohibits direct sales to American companies.

*Note: In recognition of the pain that low global oil prices were inflicting, PIRINC, in January 1999 before the Senate Committee on Energy and Natural Resources proposed a temporary reduction or elimination of State and Federal royalty and Severance Taxes during temporary periods of low oil prices

[1] *Petroleum Argus*, June 28, 1999.
[2] LPI Consulting Inc. contributed to portions of this paper.

1998 – A "ONCE IN A NEVER YEAR"

PIRINC believes that the decline in prices over the course of 1998 can be fully explained by a series of unanticipated shocks to the world oil markets, all pushing prices down, and not by any decisions by individual producers to "dump" oil in the U.S. It is highly unusual for the international oil market to experience multiple exogenous shocks during the course of a single year and the probability that all of these shocks would propel oil prices in the same direction is extremely low, virtually a once in "never" occurrence. Yet, the available evidence suggests this is exactly what happened in 1998.

This PIRINC report first evaluates and quantifies (where possible) each of these shocks. The consequences of these shocks were especially striking given the fact that the general climate that existed going into the late fourth quarter of 1997 called for substantial and continuing growth in world demand for petroleum.

The second part of our report focuses on what would be the consequences if the petition by the domestic producers were successful and large punitive tariffs were assessed on crude imports from these four countries. Our conclusion is, after a brief period of price volatility, there would be little if any impact on domestic crude oil prices since there are sufficient international supply alternatives to substitute for the volumes that would be diverted elsewhere. But there would be other significant effects, including losses for U.S. refiners, increased product imports and higher average transportation costs of imports as two major short-haul sources of supply, Venezuela and Mexico divert their crude elsewhere. There are also broader policy implications to consider. Restricting imports from three of the four countries, Mexico, Saudi Arabia, and Venezuela involve the disruption of what have been major efforts, encouraged over many years as a matter of government policy, to build stable long-term business and strategic relationships with the U.S. In effect, the actions would rupture ties with our two largest, short-haul, sources of oil and with the world's most important source of current and future oil exports.

WHAT HAPPENED IN 1998

Overview

Six separate events, many of which were interconnected and nearly all of which were unexpected, came together in 1998 to drive oil prices to levels (in 1997 dollars) not experienced by the petroleum industry since before the 1973-1974 Arab oil embargo.

- Financial crisis and recession in Asia caused the collapse in oil demand. Currency devaluation compounded the demand decline by encouraging large-scale de-stocking.
- A decision by OPEC to lift production by 700,000 barrels/day in response to broad- based expectations in late 1997 that additional output was required to meet growth in net demand for petroleum.
- Unusually warm weather throughout the 1997-1998 winter season in North America, Europe and Asia. The first quarter was the warmest on record.
- The Russian bond default which cut internal demand and led to an increase in Russian exports by the fourth quarter of 1998 by 600,000 to 800,000 bbls. above fourth quarter 1997 exports

- A decision by Chinese authorities to dramatically reduce petroleum imports in the fourth quarter of 1998.
- A sustained and large increase in UN authorized Iraqi oil exports over the calendar year 1998 into early 1999.

Calm Before the Storm

The petroleum market in late 1997 was characterized by optimism and rising confidence on the prospects for stability in world oil prices and a consensus on the need to continue efforts to aggressively pursue opportunities in the world's emerging oil provinces for new production. Meeting the demand for sustained and rapid growth in Asia represented a genuine challenge to the industry. Seventy percent of the growth in oil demand had been coming from Asia and economic projections from the IMF and others published as late as October 1997 were forecasting sustained and long-term high levels of performance from the Asian economies. Recent history supported such a forecast, as strong economic growth in 1996/1997 in Asia was responsible for acceleration in global oil demand. Net new supply was barely keeping up with net new demand and prices were relatively high, at times exceeding $25/bbl for the widely traded U.S. benchmark crude oil, West Texas Intermediate (WTI).

OPEC went into their November 1997 meeting anticipating both strong oil prices and continued demand growth. Both recent history and current market conditions bolstered OPEC's outlook that the major consuming regions would continue to generate rising demand. In late 1997, with spot prices above $20/barrel, OPEC met and raised their crude production quotas to 27.5 MMB/D. Thus, unaware that Asian oil demand was collapsing OPEC increased production between the 4th quarter of 1997 and 1st quarter of 1998 by approximately 0.7 MMB/D, more or less in line with anticipated world requirements.[3]

Asian Demand Collapses

Several analysts have correctly pointed out that Asian demand did not experience a catastrophic decline in 1998 and, as shown in the Table below, 1998 demand was only 500 MB/D below 1997 levels. But the final numbers of 1998 vs. 1997 do not tell the whole story, because this decline in demand actually represented a major shift in expectations on the future of Asia as a source for petroleum demand growth.

Trends in Asian Oil Demand, 1997-1998 (MMB/D)

	1997	1998	% Change
Japan	5.8	5.5	-4.1
China	4.0	4.2	3.9
Asia	2.1	2.2	3.9
East Asia	6.7	6.2	-7.3
Total	**18.6**	**18.1**	**-2.7**

Source: Petrodata, Tomorrow's Oil (May 13, 1999)

This apparent decline had serious consequences in terms of expectations on both the near and long term outlook for Asia. By the fall of 1997 economic forecasters had begun to reduce their growth projections for the Asian economies in the aftermath of the Thai currency crisis that began in the summer of 1997. But the full extent of the regional crisis was not recognized until much later.

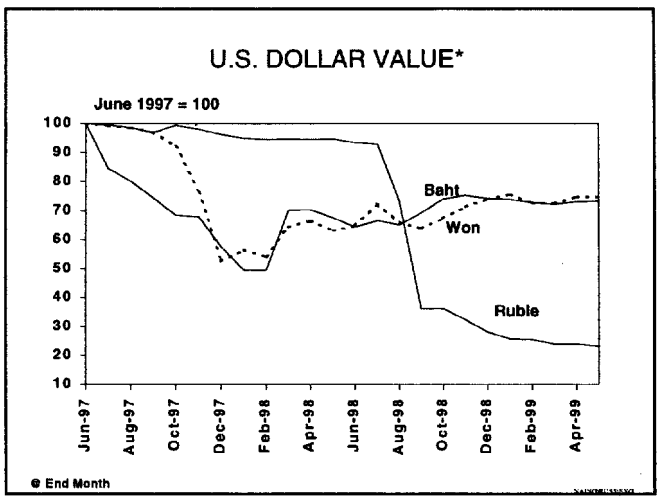
[3] In its November 8, 1997 monthly Oil Market Report, the International Energy Agency projected a growth in world oil demand between 1997 and 1998 of about 1.9 MMB/D. Industry stocks as of end-September, 1997 were above 1996 levels but well below levels in 1994 and 1995.

The general consensus forecasts (IMF and others) in the fall of 1997 pointed to growth in 1998 at levels comparable to 1997. The reality was of course much different. Instead of growing 5 percent as expected, East Asian economies were declining by 5 percent. The Table above documents the consequences on oil demand of the Asian economic collapse as the regional economies swung 10 percentage points and a loss of nearly 1 MMB/D in anticipated demand.

Economic Growth & Oil Demand In East Asia, 1998

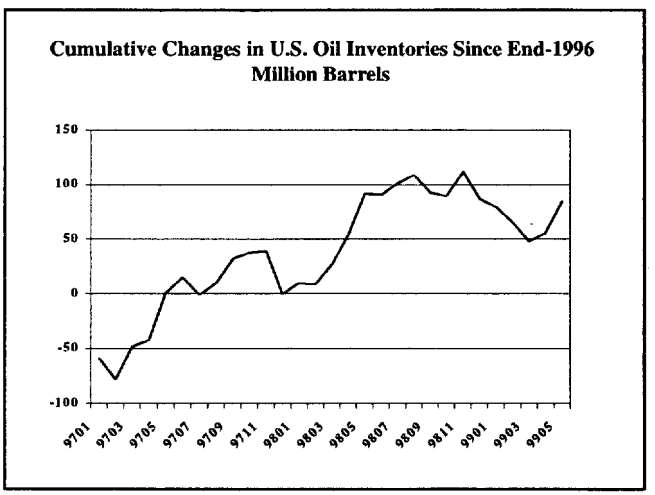
	Projected	Actual	Differences
GDP (%)	+5	-5	10.0
Oil (MMB/D)	+.4	-.5	0.9

The unexpected rapid deterioration in Asian demand was compounded by the cascading banking and currency crises in the region. For example, from October 1997 to January 1998, the Korean Won fell from an average of 922 to 1,707 to the dollar. Such a decline meant sharp increases in local currency costs of oil for consumers. Moreover, holders of oil inventories, facing skyrocketing costs of servicing dollar debt, came under tremendous pressure to de-stock, adding some 300 MB/D of additional supplies into a market already facing depressed final demands.



Weather

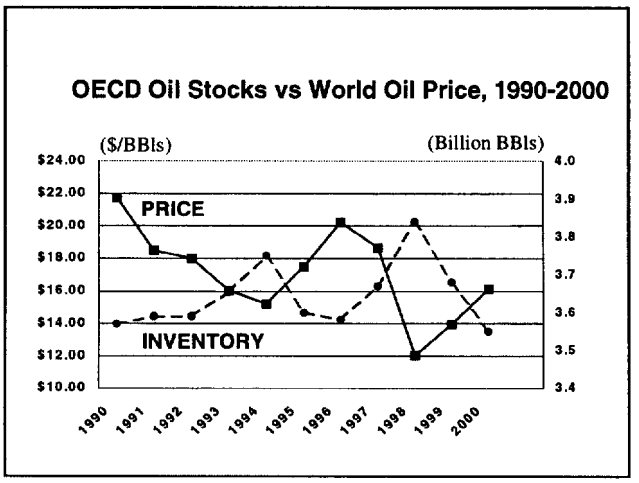
While economic crises were cutting oil demand in Asia, weather was doing the same in the major industrial countries, especially the U.S. For North America, exceptionally warm weather in the first quarter of 1998 turned what is normally a stock draw to meet higher winter demand into an extraordinary stock build. The chart on the right shows cumulative changes in U.S. oil inventories since the end of 1996. Stocks declined in early 1997 as would be expected in the winter months. The year 1997 ended with stocks about the same as at end 1996. However, over the next four months, stocks climbed by an unprecedented 55 million barrels. They climbed further through the summer by an additional 45 million barrels.



It's one thing to say it was warmer than normal it is another thing to note that the first quarter of 1998 (U.S.) experience had only occurred 6 times in the past 104 years. Winters in Europe and Japan were also warmer than normal reinforcing the negative U.S. developments. In fact, we have never experienced a warmer first quarter collectively in the U.S., Europe and Japan.

Overall, the exceptionally warm winter suppressed demands by about 1MMB/D in the first quarter of the year.

Thus the sudden collapse in Asian economic activity, coupled with the warmest first quarter, resulted in an unanticipated swing in demand during the first quarter of 1998 of 2 MMB/D. Global stocks which always decline during the first quarter, (typically by 0.5 MMB/D), rose by an unprecedented level of 1.7 MMB/D. This swing of over 2 MMB/D in stocks based on IEA data tends to confirm the above arithmetic. The unexpected and unwanted stocks weighted heavily and negatively on global oil markets. The EIA chart on stocks and world prices clearly illustrates the strong inverse relationship between stocks and price. Low stocks (1995-1997) lead to high prices and high stocks (1998) lead to low prices.



Response of Producing Countries

At the end of the first quarter of 1998, OPEC and other major exporters were facing a combination of lower than anticipated demands of about 2 MMB/D and a large, unanticipated buildup in stocks over the winter that would depress the market over the coming months. They responded with two agreements to cut production, the first in March and the second in June. These agreements resulted in significant reductions in output by the summer, with one prominent exception, Iraq. As shown on the right, OPEC members ex Iraq had cut production by the third quarter of 1998 by 1.8 MMB/D versus the first quarter, with Saudi Arabia and Venezuela cutting production by 0.5 and 0.4 MMB/D respectively. Mexico also cut production by 0.1 MMB/D over the same period. Iraq, however, did not participate in any agreement. Its volume was effectively under the control of the UN, and raised production by 0.9 MMB/D, offsetting nearly half of the production cuts made by others.

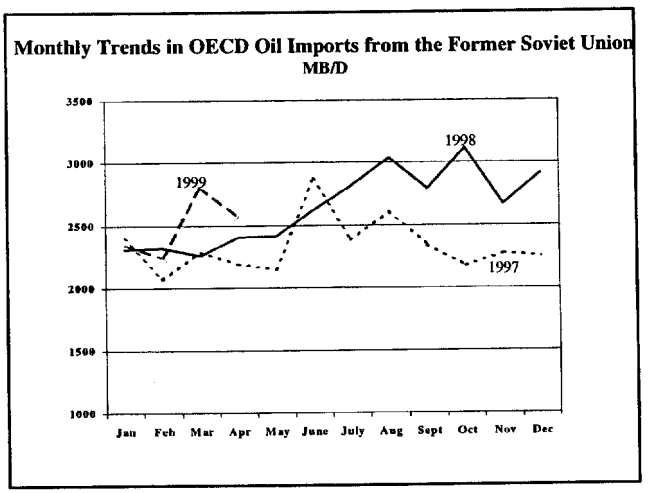
Changes in Producing Country Output
Q3 vs Q1 1998 MMB/D

	Q3	Q1	Change
Saudi Arabia	8.2	8.7	-0.5
Venezuela	3.4	3.0	-0.5
OPEC ex-Iraq	25.9	27.7	-1.8
Mexico	3.0	3.1	-0.1

Nonetheless, a million barrel a day reduction occurred and there were tentative signs that it was having some stabilizing effects as prices for WTI moved to $15/barrel by September. However, the second half of the year brought new shocks, which frustrated these efforts and depressed prices even further.

The Russian Financial Crisis: Default and Devaluation – Or The Russian Oil Is Coming, The ...

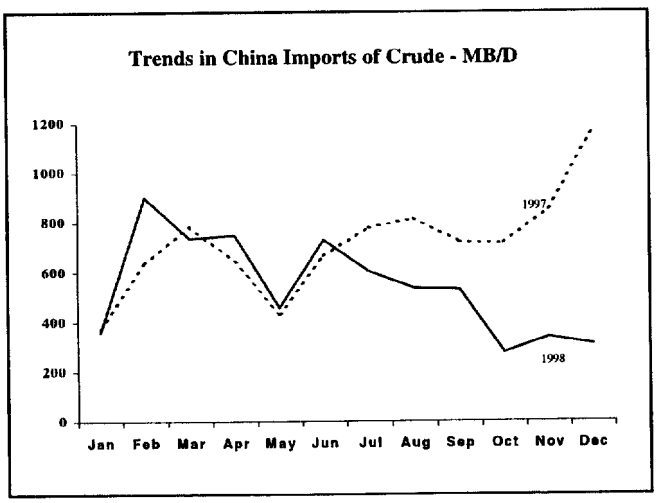
In August 1998, financial crisis came to Russia. Weak oil prices dealt a severe blow to the already overextended state of government finances. With the market for its paper drying up, the government could no longer service its rising foreign and domestic debt. The Russian banking sector, the major domestic holder of government debt suffered a severe loss of confidence, major bankruptcies and defaults, leading to a contraction within the economy. Foreigners fled the Russian market, resulting in a 70% decline in the dollar value of the Ruble (see Table pg. 4).



The collapse of the Ruble, depressed demand at home, and their own needs for cash, created enormous incentives for Russian oil producers to maximize exports. The preoccupation of the authorities with the immediate crisis left producers with fewer obstacles to achieving their objectives. The preceding chart shows monthly trends in OECD oil imports from the Former Soviet Union from the beginning of 1997 through early 1999. After more or less tracking the 1997 pattern, OECD imports from the FSU shot up in the second half of 1998, with the increase approaching 1 MMB/D in October before settling back to the 0.5 to 0.6 MMBD range in the last two months of the year.

China Walls Off Imports

In addition to Russia, developments in China toward the end of the year contributed to new downward pressure on world oil markets. In an attempt to preserve hard currency ($) China substantially reduced petroleum imports in the 4th quarter 1998. As the chart on the right shows, over the second half of the year, imports fell sharply below levels for the same months in 1997, reaching a peak decline in December of nearly 1 MMB/D.



Between the developments in China and Russia, the world oil market saw an increased "supply" primarily in the Atlantic basin that approached 1.5 MMB/D, more than enough to offset the efforts of the major oil producers ex Iraq to stabilize prices. Thus, 1999 began with perceptions of market glut and ongoing high stocks, and, as a result, still further declines in prices. Stabilization and price recovery came only in March with yet a 3rd agreement among major producers, (led by Saudi Arabia, Venezuela, Iran

and Mexico) to cut supply. Since a number of the shocks in 1998 were transitional it's not surprising that this third round of cuts is finally having a more visible and positive impact on price. Prices have fully recovered from their early 1998 lows and are back above $20

NO APPARENT DUMPING BUT WHAT IF?

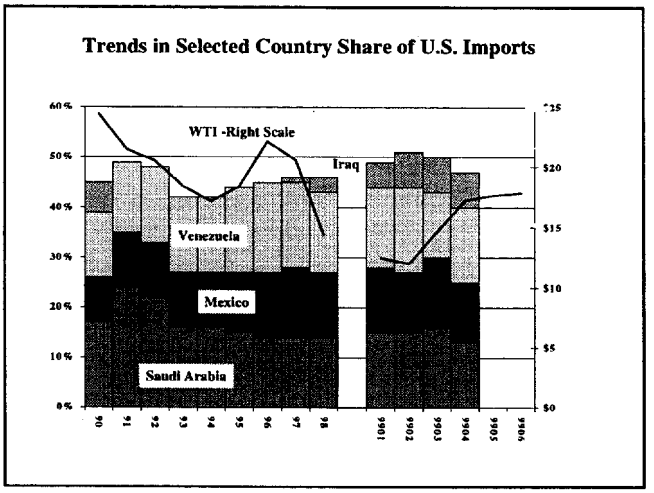
As the discussion above makes clear, an unprecedented sequence of adverse market developments, not dumping, caused the price declines of 1998. Indeed, three of the countries accused of dumping cut their production twice in 1998 in an effort to stabilize markets. The same three were instrumental in the March, 1999 agreement that finally achieved price recovery. Thus there is no evidence that the 1998 price collapse was the result of a coordinated strategy to "dump" oil on the U.S. market, as the petitioners allege. In fact, an examination of global crude oil prices would show just how highly correlated crude oil prices are with one another. A matrix of correlation coefficients measuring the relationship between the levels of various crude oil prices ranged from a low of 0.95 to unity. This indicates that crude oil prices track one another to a very high level of precision and a crude oil price change anywhere leads to a price change everywhere. Yet, there is the possibility (given the relatively low hurdle rate of proof) that the International Trade Commission and the Commerce Department could find otherwise. This section of the report attempts to answer the question, what would happen if such a finding were made and the U.S. Government imposed prohibitive tariffs on crude imports from the four countries named in the petition. It should be kept in mind that any restrictions on access to oil from these four countries would be in addition to other import restrictions already in place.

The U.S. currently prohibits the import of Iranian and Libyan oil. To date, all indications are that these unilateral sanctions have had no ongoing impact on world oil prices or on world supply. They have however, hurt the relative competitiveness of U.S. oil companies. The reason for this result is straightforward, the ample availability of oil from other sources. Thus, total supply has not been reduced but redirected. A key question is to what extent expanding the list of restricted sources to an additional four countries would impair the ability of the US to supply its needs. The answer is little if at all.

A prohibitive tariff on the imports into the U.S. is comparable to a unilateral sanction since these four countries would still be free to export. Thus, total world supply is unchanged. In fact it is not inconceivable that total supply could be increased in an attempt to protect their revenue streams (which would initially fall due to higher transportation costs and lower wellhead values for their crudes). Now let's first review the role of the four named countries as sources of US supply.

Current Market Shares of U.S. Imports[4]

Total oil imports have been rising over the course of the decade from about 8 MMB/D in the early 90s to 10.7 in 1998. The chart on the right summarizes trends in import shares for the four countries through the first four months of 1999. The chart also shows oil price trends, as represented by WTI. In recent years, the collective shares of Saudi Arabia, Mexico, and Venezuela have been approximately stable at about 45% of total imports and actually dipped slightly in 1998. But the pattern for Iraq is very different. In 1990, Iraq accounted for 6% of total U.S. imports. As a result of the Iraqi invasion of Kuwait, its oil was subject to UN sanctions and U.S. imports of Iraqi oil ceased. Beginning in 1995, the UN permitted Iraqi exports to resume subject to strict monitoring and an initial revenue cap, which has subsequently been adjusted upward. With the easing of sanctions, Iraqi production has risen from 0.6 MMB/D in 1995 to about 2.7 MMB/D currently, with the increase going entirely for export. In the first four months of 1999, imports of Iraqi oil reached 7% of the total, or about 0.7 MMB/D, and pushed the combined share of imports for the four countries to just under 50%. The rapid rise in Iraqi production, and in U.S. market share, corresponded with the fall in oil prices over the course of 1998 and early 1999. But in judging whether Iraq achieved its gains through "unfair pricing" it should be kept in mind that the terms as well as volume of Iraqi sales are subject to strict monitoring by the UN and that Iraq itself prohibits any direct sales of oil to U.S. based companies.



Prospects for Replacing Potentially Restricted Oil

If high tariffs were imposed, the US would potentially be imposing restrictions on sources currently supplying about half of U.S. crude oil imports. In volumetric terms, the four countries supplied 4.4 MMB/D of U.S. total crude oil imports of 8.7 MMB/D in 1998. In estimating implications of imposing such restrictions, the first question to ask is how difficult would it be to replace such a volume of restricted oil from other sources. As shown above, the total volume of internationally traded oil is about 40 MMB/D. At present, the U.S. prohibits imports of Libyan and Iranian oil, which

Internationally Traded Oil (Est.) 40 MB/D

	Exports MMB/D	% of Total Trade
Sources currently restricted		
Iran	2.3	
Libya	1.3	
Subtotal	3.6	9%
Sources potentially restricted	4.4	11%
Remaining Traded Oil	32.0	80%

[4] We are using the DOE as a source for imports for that is what most of our readers are familiar with. However, for purposes of examining the specific charges of dumping a more appropriate set of data would be imports for consumption from Department of Commerce which excludes imports that are reexported. Interestingly the DOC data shows that imports from these four countries declined over the period under review.

together export about 9% of the world's total exports. If the U.S. imposes high tariffs on crude imports from these four countries effectively, another 4.4 MMB/D or about 11% of currently traded oil would be economically restricted from entering the U.S. market. However, these countries would still be free to export elsewhere. Therefore, by the redirection of crude oil flows and increased product imports about 32 MMB/D of traded oil would not be subject to potential restriction. Such a sizeable potential volume suggests any restrictions as a result of anti-dumping actions would have a very limited impact, if any, on domestic crude prices.[5]

Implications of Shifting Sources of Supply

While replacement supplies appear to be readily available on an aggregate basis, it is important to look at where the replacement supplies would come from. Probably most replacement crude would come from other producing countries in the Arabian Gulf. As shown in the table on the right, in 1998, the Persian Gulf producers exported 17.1 MMB/D of oil with about 13% of the total going to the U.S. Excluding Saudi Arabia, Iraq, and Iran, the remaining Gulf producers exported about 5.2 MMB/D, of which only about 6% went to the U.S. Although not shown in the table, Western Europe accounted for only another 6%. Most of this group's oil was moving to long-haul destinations in Asia. Thus shifting supplies to the U.S. market would involve for the most part substituting one somewhat longer haul destination for another. In the case of substitution for Saudi oil, (which in turn would move to Asia) there would be virtually no change in overall transport costs.

	1998 Net Exports MMB/D	% to U.S.
Arabian Gulf Total	17.1	13%
Saudi Arabia	7.6	20
Iraq*	1.7	20
Iran	2.6	-
Other Gulf Exporters	5.2	6
Mexico	1.5	89
Venezuela	2.8	61

*Iraqi exports reached 2.1 MB/D in the first 4 months of 1999, with the share going to the U.S. rising to 33%.

The most significant changes in world oil movements involve Mexico and Venezuela. In 1998, 89% of Mexico's exports went to the U.S., as did 61% of Venezuelan exports. If their main market shut its doors, their crude would have to go elsewhere, for the most part to Asia as Persian Gulf crudes were redirected to the U.S. But for Mexico and Venezuela, the result is a substitution of very long haul destinations for one next door, suggesting erosion of netback values. This erosion in revenue could encourage them to increase supplies and thereby undermine crude prices.

[5] Potential import volumes could be larger if the restrictions provoke diversions of domestic supply in certain countries to exports. For example, Canada could potentially import more crude---including crude from the same four countries---to meet domestic needs and export more of its own production to the U.S.

Effects On U.S. Refiners

Recently refiners have been investing to improve their capability to handle lower gravity, higher sulfur crudes, in particular Venezuelan and Mexican crudes. Thus, at the beginning of this year, coking capacity of U.S. refiners reached nearly 1.8 MMB/D, about a 33% increase since the beginning of 1993 while overall refining capacity increased by only about 8% over the same period.[6]

The loss of these crudes and a move to a lighter, lower sulfur crude inflicts losses on those refiners who invested most in upgrading. Conceivably, if the economics were poor enough, some deep-conversion capacity could be shut in.[7] Certainly, any future investments in such capacity could lose its attractiveness. On the other hand, refiners that had not made such investments would benefit. The net effect would probably be an increase in overall costs of refining. Effects on profitability and consumer prices would depend on the scope of the restrictions. The petition refers to unfair pricing of crude, not products. Refined products from the four countries (either refined within their borders or from crude exported elsewhere) could still enter the U.S. under current import duties. In this case, U.S. refiners would suffer financial and volume losses while consumers would see some increases in product prices.

Impact on Business and Strategic Relationships

The most serious implications of restricting imports from three of the four countries, Mexico, Saudi Arabia, and Venezuela, involve the disruption of what have been major efforts to build stable long-term business and strategic relationships with the U.S. All three have entered the U.S. downstream, either through acquisitions or joint ventures.

The Venezuelan national oil company PdVSA has been the most prominent with its ownership of CITGO, currently the 10th largest U.S. refiner and one of the nation's largest retailers of gasoline. PdVSA formed a refinery joint venture with Amerada Hess (involving the 495 KBD St Croix VI refinery) in 1998 and, the year before, another with Mobil (involving the 159 KBD Chalmette, Louisiana refinery). In late 1998, Phillips Petroleum and PdVSA finalized a refinery joint venture involving Phillips' 200 MB/D Sweeny, Texas refinery.

The Saudi Arabian national oil company has also moved significantly into the U.S. downstream, first with its Star Enterprise refining and marketing joint venture with Texaco, and more recently, with the combining of refining and marketing assets of Star Enterprise, Texaco, and Shell into new joint ventures.

Saudi Arabia has been reviewing the potential for private company investment in their oil rich country. While this policy is in the early stages of development, the Saudi government has indicated a strong preference for U.S. company involvement. A finding for the plaintiffs by the I.T.C. can only undermine the relationship between our two governments and U.S. oil companies.

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[6] From Oil & Gas Journal Worldwide Refining Reports

[7] Some of this capacity is in foreign trade zones. Thus, crude from these countries could still be imported (penalty free) if the products were exported or exchanged for foreign products.

The involvement of Mexico's state company, PEMEX, has been on a more modest scale and for different reasons. Pemex and Shell have been operating the Deer Park, Texas refinery as a joint venture for several years. The PEMEX interest was not to enter the U.S. downstream market per se but to improve its ability to supply the Mexican market with light products derived from its own crude.

It has certainly been in the U.S. interest to encourage stable supply relationships with the world's most important source of current and future oil supplies, Saudi Arabia, and the largest current and potential supplies of short-haul oil, from Venezuela and Mexico.

The U.S. has also had a long-term interest in supply diversity. The net effect of restricting imports from the four countries targeted in the petition would be to reduce supply diversity. This appears to be a high strategic price to pay for what would be minimal, if any, relief for domestic producers. Mexico's postponement of removing its import duty on U.S. natural gas shipments was an official first response to the "price dumping" accusation.

The producer cartel is currently operating as effectively as it ever has in it's nearly 30 years of existence. With a more than 90% compliance with their agreed production cuts, prices have recovered from less than $12 to more than $20 in a relatively brief period of time.

It should not be overlooked that the imposition of punitive duties may encourage one or more of these countries to independently raise their production in an attempt to protect their revenue. This could undermine the unity and effectiveness of OPEC, and non-OPEC producers by adding incremental supply to the market. This in turn would lower prices, which is the last thing any producer (domestic or otherwise) wants to see. Thus, ironically the plaintiffs might be able to achieve what consumers and consumer countries have been unsuccessful at achieving, that is driving a wedge between the effectiveness of the current producer cartel.