

## Crude oil price movements and their impact on South Africa

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### Abstract

*The purpose of this paper is to examine crude oil price movements and their impact on South Africa. A useful starting point is understanding the factors that have played a prominent role in influencing oil pricing. For this reason, I begin by focusing on OPEC producing countries and the challenges these countries face with supply management. After considering domestic oil pricing and accounting for fluctuations in crude oil price movements, I examine the domestic impact of oil price changes on the South African economy.*

*Key words: dependence, supply management, price fluctuations, inflation, domestic resource*

### Introduction

Crude oil price increases from the beginning of 2004 and the Organisation of the Petroleum Exporting Countries (OPEC) production strategies compel us to explore the crude oil price movements over time and their impact on the South African economy. It is often difficult to discuss crude oil price movements in any country without taking into account the situation in oil producing countries. Available evidence shows that South Africa is heavily dependent on imported sources of oil, that oil imports account for 6% of imported items (ABSA 2004), and that by 2003 over 96% of the crude oil requirements were imported (SAPIA, 2004), the bulk of which were supplied by Saudi Arabia (45.8), Iran (33.7%), and Nigeria (16.6%).

This paper begins by examining factors that influence or are prime determinants of international crude oil pricing. This leads us to examine what constitutes a binding factor among the OPEC producer countries given their heterogeneity and, given this, the challenges OPEC faces in its supply management. These factors help explain the oil price movements over time. I then consider domestic oil pricing and oil price movements in South Africa.

The remainder of the paper attempts to account for the impact of crude oil price changes on economic growth and development in South Africa.

### OPEC's role in oil pricing

In looking at the price determination issue, we must understand the relationships between OPEC and the oil market. This may enable us to reveal the inadequacy of the exclusive focus on OPEC explanations of current price behaviour. OPEC countries, with comparatively low discount rates, took over the role of production decisions and oil price fixing in international trade from international oil companies, with abnormal discount rates in anticipation of nationalization, from the 1960s. The 1970s saw expectations of rising crude oil prices generated by rising oil consumption as well as misguided fears of impending scarcity of crude. As a result, there was an incentive on oil producers to hold marginal barrels of oil in the ground instead of producing them for current consumption. This obviously led to higher prices. Robinson (2001) contends that OPEC was not a prime mover in price increases, but was more of a price follower, frequently meeting to agree on prices which had *de facto* already been realised in the market. In the 1980s when crude oil prices were plummeting because of weak demand, OPEC influenced pricing by instituting a rationing agreement, but had limited success in stopping the slide in oil prices.

Since 1986, OPEC's oil pricing regime has been based on a price formula, which uses West Texas Intermediate (WTI) and Brent as a benchmark. OPEC has a stake in oil price levels and movements. As a result, it can only attempt to steer their course by sending signals, through production policy announcements, where accumulation reference prices are determined. A decision about a quota reduction, for example, expresses OPEC's worry about bearish sentiments in the market, which may eventually cause prices to fall. Similarly, a decision to increase production quotas reflects uneasiness about the prevailing high price level. Mabro (2004) points out that the actual production following a

policy decision on quotas usually turns out to be closer to demand than to the volumes defined by these quotas. In case of excess supply, producers either stock the excess at high costs, thus leading to inventory, or offer reluctant buyers discounts. Offering where the quantity supplied exceeds the quantity demanded can only be justified where prices are falling. Therefore, crude oil prices will behave like other commodities in the market, with wide price swings in cases of shortage or oversupply.

### Dependence on crude oil exports – OPEC

There is consensus among many energy analysts that despite differences in long-term interests of OPEC members, what they have in common that unites and motivates its members, making OPEC able to reach unanimous decisions, is their dependence on revenues from crude oil exports as a source of capital and foreign exchange. For most of these producers, crude oil is their predominant export, making them vulnerable to world oil prices. An average of 27% of GDP comes from oil exports (Dessai 2004). Reasons for this dependence on oil income vary but include high levels of debt or financial position, success in diversifying their economies, the size of reserves they hold, the degree of mismanagement of their economies (see for example, Kohl 2002), rising unemployment levels in these countries and the attendant social stresses. Cheap oil, it seems, could cause both instability and poverty in these countries. OPEC producers have different priorities and desired price levels despite other common interests among them.

Tables 1 and 2 capture the extent of heterogeneity within OPEC, which include reserves endowment, populations, the degree of dependence on the resource, and the level of external debt. Analysis of the organization (and of Table 1) shows two distinct groups divided according to their ability to absorb high revenues. First are 'low absorbers' with large reserves and small populations, and 'high absorbers', consisting of large populations but with smaller oil reserves (for example, Iran and, to some extent, Nigeria) than the 'absorbers'. To a large degree, these groupings also define preference on the price level. 'Hawks' (usually nations with large a population, small oil reserves and few other resources) push for lower output and higher prices. The 'doves' (those with larger reserves relative to the population) are usually conscious that high prices are in the long-term 'harmful', and accelerate technological change, a search for and development of new deposits, and reduce the value of their deposits in the ground. OPEC producers thus see it as sensible to maximize prices because of the size of the finite resources they hold. Over 60% of the world's oil is in the Middle East, and Saudi Arabia

holds way over 262.7 billion barrels of oil (or 22% of proven reserves).

**Table 1: OPEC member states population and oil data**

Source: Dessai (2004)

Country	Population 2003 ('000)	Proved reserves 2003 ('000 million barrels)	Production 2003 ('000 barrels daily)
Algeria	31 840	11.3	1857
Indonesia	216 950	4.4	1179
Iran	67 050	130.7	3852
Iraq	25 150	11.5	1344
Kuwait	2 430	96.5	2238
Libya	5 660	36	1488
Nigeria	124 390	34.3	2185
Qatar	620	15.2	917
S. Arabia	22 670	262.7	9817
UAE	3 120	97.8	2520
Venezuela	25 710	78	2987
<b>OPEC</b>	<b>525 590</b>	<b>881.9</b>	<b>30384</b>

Table 1 easily lends itself to debate. 'Pessimists' contend that oil resources are finite and that reserves are static. Following this view, dividing proved reserves by production yields the number of years remaining of the reserve. In line with the 'optimist' school, I argue that it is not logical to take current proven reserves as the limit of resource availability. It is further misleading to use a life statistic index that if available known resources are equal to Z, and annual consumption equal to Y, reserves will eventually run out in year  $X = Z/Y$ .

Such deterministic models make a naive assumption that the response mechanism to resource scarcity, with a potent danger to economic development, does not exist or acts slowly, in contrast to the optimist's position that the market system would respond automatically to prevent the problem of exhaustion. Responses take the form of market responses and the role of substitution. Increased production costs (either because of scarcity or high extraction costs) would make producers supply less to the market at existing price levels, with prices rising until equilibrium between supply and demand is re-established.

This higher price sets in train a series of demand, technological and supply responses: cheaper substitutes to oil are encouraged; the high price provides an incentive to innovation with technological changes increasing the availability and reducing the cost of substitutes thus reducing pressure, via the price mechanism, on the scarce commodity; higher prices lead to the exploitation of previously uneconomic resources, a search of new supplies and

**Table 2: Economic indicators for OPEC member states in 2003***Sources: Dessai (2004); EIA (2005)*

Country	GDP per capita (\$)	Total external debt (\$m)	Dependence (petroleum exports/ GDP) (%)	Comment
Algeria	1 766	23 353	29.3	Less dependent on oil due to large natural gas reserves
Indonesia	960	136 749	4.6	Earnings from LNG exports have been increasing while oil export revenues have been falling
Iran	2 010	12 100	19.4	Has second largest natural gas reserves
Iraq	789	93 893	37.9	Relies heavily on export of crude oil and oil products
Kuwait	17 942	14 077	43.1	Revenues account for about 90% of income
Libya	4 064	4 194	59.0	Oil export revenues account for 95% of hard currency earnings and 75% of the government budget
Nigeria	448	30 033	39.8	Crude oil exports generate over 90 – 95% of foreign exchange earnings
Qatar	32 945	17 498	43.2	Increasingly diversifying to LNG exports and gas based petrochemical industries
Saudi Arabia	9 327	32 536	40.2	Saudi Arabia is a leader in OPEC's quota decisions
UAE	24 244	21 464	33.3	Diversifying towards services
Venezuela	3 463	33 048	24.5	Oil revenues provide for 75 – 80% of total export earnings and 40 – 50% of government revenues
<b>OPEC</b>	<b>1 785</b>	<b>418 945</b>	<b>27.2</b>	

development of extraction technologies. Substitution can take various forms: some current dominant source of suppliers can be replaced by new ones; alternative energy sources (e.g. gas) may claim an increasing share in the production of goods and services; and lifestyle demand changes may alter the mix of final goods and services.

### Challenges with oil supply management

Several policy challenges are manifest in OPEC's oil supply management. Consider the following:

Crude oil price determination is an issue of concern and affects growth. Factors responsible for high oil prices and their wide fluctuations are, amongst others, political events rather than market forces. Most of the price hikes (and cut backs in production) in the past have been associated with political instability in the Middle East, with oil markets reacting to interruptions in supply caused by political factors. Examples are price shocks resulting from the following political events: the Yom Kippur War – Arab oil embargo of 1973, the Iranian revolution in 1979, the Iraqi invasion of Kuwait in 1990, and the US fears of an Iraqi invasion in 2003. The feared threat is the impact of crude oil prices on world economic growth and the consequences on South Africa as a crude oil importer as well as for its exports in the global market. A pragmatic factor,

however, is that Saudi Arabia, which manages the lion's share of OPEC's surplus capacity and is the 'supplier of last resort', has not used oil as a 'weapon' and has remained a stable oil producer.

There is also the issue of uncertainty due to high prices. OPEC's high prices have made investment in high cost areas outside OPEC viable, while technological progress has made previously high cost areas lucrative. As a result, non-OPEC supplies have increased over time and eroded OPEC's market share. It is expected (IEA 2004) that OPEC will find it more challenging firming up prices because of the expected increase from non-OPEC sources. Much will then depend on strategies adopted by non-OPEC countries, and on whether they will collude with the OPEC members in production restraints. It is speculative whether prices in the medium to long-term remain in OPEC's range in the case of their production cutback strategies, or whether non-OPEC oil producers react to higher prices by increasing production thus limiting excessive price increases in any long-term production reduction.

Added to the above are various factors that constrain the supply of oil. In the short term, the distribution of spare capacity is heavily concentrated in a few OPEC countries, with the potential of complicating the allocation of volume increases. If we

exclude Iraq from Table 1, Saudi Arabia alone accounts for over 70 percent of OPEC's spare capacity. Evidently, an overall output increase does not benefit countries with limited spare capacity since they cannot raise their production to compensate for the resulting low prices and to increase their revenues. Another issue affecting supply is the amount of unexploited reserves for the medium term. The International Energy Agency (IEA) (2004) estimates show that OPEC members held over 69 percent of the world's proven oil reserves by 2004, with the balance held by non-OPEC member countries. The rate of reserve depletion is rapid with the non-OPEC members given the high disproportionate percentage of their world output contribution, resulting in a reserve-to-production ratio of about 14 years (Farrell et al 2001) compared to OPEC's of about 80 years (see Table 1). This implies that for the longer-term, production is likely to be concentrated in OPEC members, with OPEC supplying the incremental barrel. Added to this is the high cost of exploiting the reserves and resources in non-OPEC countries.

There is persistent failure by OPEC member countries to comply with stipulated production quotas. There is often a discrepancy between actual and official production quotas. 'Leakage' or cheating tends to heighten when prices are low. This is in conflict with OPEC's ideal to pursue stability and harmony by coordinating their production policies. Saudi Arabia, Libya, Qatar, Nigeria and Venezuela are often top export quotas to make short-run revenue gains to satisfy their socio-economic conditions and need for foreign exchange and capital. When the price drops, they increase their production volumetrically to make up for the loss. OPEC's lack of a monitoring system on production and shipment as well as an absence of a punishment mechanism to discourage cheating exacerbates the problem. In this respect, adjustment of production quotas, with an influence on price movements, is problematic and at times leads to price volatility (Faltouh 2005). Problems arise from uncertainties of demand and supply, the scarcity of reliable data on production, consumption and inventory levels as well as hardly reliable short-term forecasts to enable OPEC to anticipate the direction of the market.

The different resource endowment between member states results in different preferences for price levels. As in a typical case of a cartel, it is important to establish the right price and quantity. Countries with low oil reserves, or with a short time horizon and low price elasticity of demand, seek higher prices to maximize their oil revenues, while those with large reserves concentrate on their market share. These conflicts persist within OPEC. Furthermore, most OPEC member states are heavily dependent on oil revenues for their foreign cur-

rency requirements (see Table 2). This dependence translates to over 90% of their external trade. I am inclined to conclude that OPEC decisions are dictated by short-term financial requirements.

Other factors are beyond the control of OPEC but nonetheless lead to higher prices. For example, factors that put energy traders on edge are geopolitical change, perceived uncertainty, weather patterns in producing countries, nervousness about Iran's uranium processing plans, etc. All these factors add to sources of vulnerability due to energy security concerns.

### **Domestic pricing**

South Africa uses the Basic Fuel Price (BFP) as its pricing formula, which replaced the In-Bond-Landed-Cost (IBLC) in April 2003. The IBLC formula, introduced in the 1950s and revised in 1994, was based on the daily average of five published world oil prices, consisting of three refineries in Singapore, an assessment of the Singapore spot market price, and the posted price of a refinery in Bahrain. The BFP, like the IBLC, is essentially an import parity pricing formula, and relies on spot pricing rather than on posted prices. The spot prices used are: for petrol – 50% Mediterranean and 50% Singapore; and for diesel and paraffin – 50% Mediterranean and 50% Arabian Gulf (SAPIA 2005). Added to this are freight costs from the refining centres to South African ports, demurrage, insurance, and allowance for evaporation, wharfage, coastal storage and stock financing. Government regulated the price for petrol and paraffin to the retail value, diesel to the wholesale level, and liquid petroleum gas (LPG) to the refinery gate.

The economic impact of oil price changes is predictable. Oil price increases lead to transfer of income to the exporting country through a shift in the terms of trade, reduces real national income of the importing country, and constrains the ability of citizen's to purchase other goods and services. The magnitude of this direct effect, however, depends on the degree of dependence and the oil price elasticity of demand. The speed of adjustment, often dictated by the real wage, price and structural rigidities in the economy add to the direct income effect of the oil price increase, with higher prices triggering inflation, increased input and transport costs in the economy and, ultimately, lower investment. In the short run, substituting oil with energy and non-energy inputs is difficult because of fixed energy consuming capital.

### **Crude oil price movements**

Figure 1 shows fluctuations in dollar crude-oil price and reflects the Rand (ZAR) exchange rate from 2000 to the third quarter of 2005, largely because of the changing state of supply-demand

fundamentals on international markets. World oil sales are denominated in US dollars, and this implies that any changes in the value of this currency affects OPEC's decisions on how much to produce. Given the purchase of crude oil in US dollars, the Dollar-Rand exchange rates add to domestic price movements: the weaker the Rand, the more money paid for crude oil and the higher the fuel prices. The Department of Minerals and Energy in South Africa is responsible for fuel price adjustment in accordance with the price of crude oil and the exchange rate. World prices peaked in October 1996 at US\$22/bbl, and then declined, falling below US\$10 in early 1999. Triggering factors outside the control of South Africa are attributed to the following: (i) Asian dampened demand because of the economic crisis; (ii) increase in OPEC output in 1997 despite weak demand; and (iii) non-compliance to production quotas by OPEC producers, especially Venezuela. The combination of these factors sent prices on a downward spiral in response.



**Figure 1: Oil price movements**  
 Source: Standard Bank Economics Weekly, 18 November 2005

Crude prices have been very volatile since 1999. Spikes from March 1999 are because of the following factors: (i) OPEC restricted crude oil production and there is greater cooperation among its members; (ii) Asian growing oil demand signifying recovery from crisis; and (iii) shrinking non-OPEC production. The world market responded accordingly with sharp increased in prices, with crude oil prices increasing and exceeding US\$30/bbl towards the end of 2000 (see Figure 1). OPEC then tried to maintain prices at a range between US\$22 and US\$28 by increasing or reducing production, and with increases in output by non-OPEC producers, particularly Russia. The September 11 2001 incident sent crude oil prices plummeting, despite earlier production increases by non-OPEC producers and reduction of quotas by OPEC member countries. Soon afterwards, prices moved to the US\$25 range. In 2004, prices moved above this range, with the Brent crude hovering above US\$40 per barrel during the year. Factors contributing to the increase can be isolated as follows: the continued fall in the

US dollar and following political tension in the Middle East, the high demand for crude oil by China and uncertainty about the future of Yukos, the Russian oil producer. The firming of the US dollar against other major currencies contributed to increasing fuel prices.

Figure 1 also shows that crude oil prices hit record highs, exceeding US\$60 per barrel in June 2005. The sharp increase in prices is largely attributed to strong demand, not shortages, driving the market, with the strength in demand driven by two powerful economies: the United States of America (despite a slowing economy) and China, to meet rising world demand for its goods. The average Rand/Dollar exchange rate strengthened slightly, marginally reducing the increasing impact of international product prices. Only Saudi Arabia has any spare capacity. Consistent with the past, Saudi Arabia has maintained this as a buffer to prevent the market from overheating in times of unexpected supply interruptions. There are two important points to note here. First, this buffer has been declining because OPEC has not been investing sufficiently to keep pace with growing demand. Second, and according to Shezi (2005a), although Saudi Arabia has been boosting production to keep prices down, by mid-2005 crude oil prices continued on their upward trend.

**Domestic impact of price changes**

Given its dependence on imported crude oil, South Africa is exposed to increased input prices and has to manage imported inflation as well.

Upward increases in international crude oil prices partly account for escalation in domestic inflation, with the impact of this depending on the strength of the Rand. The prolonged strength of the Rand, on the other hand, affects growth prospects negatively, particularly in the mining and manufacturing sectors. Mboweni (2005) shows that based on the oil price averages of US\$37 per barrel in 2004, the global economy would slow down by 0.5%, inflation increase by 0.3% and trade balance decline by 0.3%. For South Africa, this translates to a decline in economic growth by 0.6%, an increase in inflation by 1.6% and the worsening of the trade balance by about 1.4% of the gross domestic product. ABSA (2004) estimates that with a US\$/Rand exchange rate of R6.5, a US\$1 per barrel increase in crude oil prices raises local petrol prices by R0.08 per litre. For a given value of the Rand of R6.70 to the dollar in mid 2005, every US\$10 a barrel increase in oil prices added between 0.5% and 1% to inflation (Shezi (2005), further reducing GDP by 0.8% (Bacon, 2005). The time lag between the oil and petrol price increases has fallen from six months in the 1970s and two months in the early 1990s (SARB, 1990) to about a month since the mid 1990s.

**Table 3: Economic forecasts**  
**Source: SB (2005)**

	2002 <sup>a</sup>	2003 <sup>a</sup>	2004 <sup>a</sup>	2005 <sup>T</sup>	2006 <sup>T</sup>	2007 <sup>T</sup>	2008 <sup>T</sup>	2009 <sup>T</sup>
<b>Growth data</b>								
GDP (% y/y)	3.6	2.8	3.7	4.1	3.8	3.8	4.0	3.8
Final consumption expenditure by households (% y/y)	3.2	3.4	6.1	5.5	4.9	4.7	4.5	4.2
Gross fixed capital formation (% y/y)	3.7	9.0	9.4	9.0	6.1	4.5	5.5	5.3
GDE (% y/y)	4.6	5.3	6.3	5.7	4.8	4.5	4.5	4.2
Current account balance (% of GDP)	0.7	-1.5	-3.2	-3.5	-3.2	-3.0	-2.9	-2.8
<b>Inflation data</b>								
Headline CPI (% y/y – annual av.)	9.2	5.8	1.4	3.3	3.6	3.4	4.5	5.0
CPIX (% y/y – annual av.)	9.3	6.8	4.3	4.1	4.9	4.6	5.0	5.3
Core CPI (% y/y – annual av.)	8.2	6.6	4.7	3.7	3.8	3.6	4.2	4.7
<b>Prime rates</b>								
Prime (year end)	17.0	11.5	11.0	10.5	10.5	10.5	10.5	10.5
Prime (average)	15.59	14.96	11.31	10.64	10.50	10.50	10.50	10.50
<b>Exchange rates</b>								
\$/R (average)	10.54	7.55	6.43	6.00	6.08	6.51	7.02	7.54
£/R (average)	15.77	12.25	11.74	11.40	11.71	12.01	12.24	12.62
R/¥ (average)	11.93	15.41	18.79	17.41	17.01	16.62	15.17	13.67
Eu/R (average)	9.90	8.53	7.97	7.92	8.07	8.27	8.50	8.80

<sup>a</sup> = Actual <sup>T</sup> = Trend

Based on actual and forecast data, price inflation has been decelerating from late 2003 (see Table 3) to relatively low rates. Contributing to the fall in inflation were the appreciation of the Rand, low increases in food prices over time and the consistent application of prudent fiscal and monetary policies. The Consumer Price Index less mortgage cost (CPIX) inflation rate rose from 3.1% in February to 3.9% in May 2005 almost entirely because of higher prices of imported crude oil (SARB 2005), but still well within the 3 to 6% target range. This obviously has a positive influence on inflation expectations by business, labour and consumer households. Nevertheless, the continued rise in the international price of crude oil threatens to push domestic fuel prices higher, preventing a further reduction in price inflation levels.

In the absence of a strong Rand, increasing oil prices may lead to higher interest rates, limit consumer expenditure, and retard real disposable income growth. Similarly, the slow down in global economic growth because of high oil prices affects disposable income via its negative impact on global demand for South African exports. As a result, many sectors of the economy will be affected as expenditure on discretionary goods is reduced, and companies will be constrained to hire more labour because of higher energy prices. Prevailing evidence (see Table 3), however, shows that the appre-

ciation of the Rand since mid-2002 led to the declining average level of the prices of imported goods from the end of 2002, although further meaningful reductions were hampered by consistent energy price rises. Estimates also show that the decline in these prices moderated from 9.6% in November 2003 to 0.3 % in October 2004, and after vacillating between -0.7 to 0.7% in the intervening period, rose to 1.4% in April 2005 as international crude oil prices pushed the index higher (QER 2005). Between January and June 2005, the Brent crude oil prices increased by 24.8% from an average of US\$44 per barrel to US\$55 per barrel, reflecting the uncertainty and volatility in the market. This together with the rising current account deficit of 4% in the first half of 2005 (SARB 2005), the inflationary risks resulting from high oil prices and a weaker Rand raised concerns about higher interest rates in mid 2005.

Several studies show that lower income households use kerosene intensively, and that the share of expenditure falls as income rises. Estimates show that the lowest quantile share of expenditure can be as high as 4% of total household expenditure, and that a 50% rise in kerosene price is equivalent to a loss in welfare of about 2% of household expenditure or the poorest household and a 0.5% loss in welfare for the highest expenditure groups (Bacon and Mattar).

## Implication of high prices on domestic energy production

Unlike the 'pessimists' of the early 1970s (notably Meadows et al (1972) and Forrester (1971)), I do not support the gross oversimplification and false alarm that high prices signal the imminence of resource scarcity, and that oil as a non-renewable resource is approaching exhaustion with the threat of modern industry coming to an end. Rather, high prices result in increased exploration and production, and aid resource movement from a previous uneconomic category to effective reserves, given improvement in extraction technologies that reduce costs.

Increases in the crude oil prices may be a signal to develop domestic oil reserves. South Africa's oil and gas reserves are small but economically important. The Oribi/Oryx Oil Field and the Sable Oil Fields have proven reserves of 49 million barrels, and Oribi/Oryx Oil Field produced 4.6 million barrels in 2002 (SANEA 2003). Sable Oil Field production, which began in 2002, has a potential of replacing 7% to 10% of the imported oil. In addition, South Africa has a highly developed synthetic fuels industry supported by abundant coal resources and offshore natural gas, which account for about 40% of liquid fuel requirements from the country's refineries. High oil prices should provide an incentive to develop these domestic opportunities and to reduce South Africa's vulnerability to increases in international oil prices.

## Conclusion

I have examined crude oil pricing, explored the forces that play a dominant role in crude oil pricing, and discussed the impact of crude oil price changes on South Africa's economy. As in any market system, prices balance supply and demand by allocating the scarce resource among competing end users. OPEC pricing is largely in line with the rational logic that the restriction of output (whether because of scarcity or as a pricing strategy) pushes up the price, with the equilibrium price of the resource established at a higher level thus earning the producers large amounts of income flow from oil users. As real income falls, consumers revise their purchases of other goods and services downwards, and aggregate demand falls because of income redistribution. South Africa has been shielded from much of the negative impacts of crude oil price increases because of the strong US dollar/Rand exchange rate, but is still very dependent on and vulnerable to external sources of oil supply and to increases in international oil prices.

OPEC producers still control about two thirds of the global oil supplies, and extraction costs in non-OPEC sources are much higher. High crude oil prices, on the other hand, provide an incentive for oil exploration, and for the development of the syn-fuel industry, which is supported by plentiful coal

resources and by growing by growing gas explorations. While these are long-run responses, the immediate impact of high crude oil prices is on economic growth and development of the consuming country.

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