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**After an Attack on Iraq:
The Economic Consequences**

**Background Paper
Oil Price Paths under the Four Scenarios**

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November 12, 2002

The economic effects of an attack on Iraq will be analyzed based on a no-war scenario and three war scenarios. The three war scenarios are identified in Tony Cordesman's "Background Paper on Risk Analysis and Scenarios." The benign case assumes a relatively quick and decisive military outcome with limited adverse political ramifications. The intermediate and worse cases involve progressively greater damage to oil fields and facilities and progressively more adverse political repercussions.

First we discuss the current state of the oil market. Next we set out the assumptions underlying the no-war case and then set out and explain the reasoning behind the oil price paths in the no-war and three war scenarios.

I. The Current State of the Oil Market

World oil demand is moving up due to seasonal and structural factors as well as recovery from depressed levels following events of September 11th. OPEC production restrictions, although eroding, has kept global supply below demand through the first 9 months of 2002, with the difference made up through inventory drawdowns. Thus, the countdown to war with Iraq is taking place at a time when the oil market, particularly in North America, is tight and prices are reflecting the tight balances. Oil's role in the global economy has shrunk in recent years when measured relative to GDP, suggesting declining vulnerability to oil price shocks. But, much of this trend reflects oil's retreat from its use as a boiler fuel, where fuel substitution is easiest. Oil remains as critical as ever for transport and as such, price spikes can have very disruptive quick economic impacts. In effect, oil's price elasticity of demand has fallen, as its use is concentrated in key sectors with little possibilities for substitution. Thus, larger price changes are required today to clear a given level of imbalance.

Two mitigating considerations are the existence of substantial spare productive capacity, 4.5 to 5.5 mbd within OPEC and strategic stocks of consumer countries (half of which is in the US). Most of the OPEC spare capacity is held by the GCC and in particular Saudi Arabia. While OPEC and especially Saudi Arabia have indicated an intention to react to any supply disruption, it is not clear how quickly they would react. The 1990-91 Gulf crisis showed that oil supplies were being put on the market and, thanks to early military success, they were secure. Strategic stocks should certainly be used earlier than in the 1990-91 crisis. However, they should not necessarily be used as a first line of defense since we should keep the pressure on OPEC to keep its promises. However, early use or at least an announcement of intent to use early is important given the low level of commercial stocks.

II. The No War Case

At some point there will either be a war, or that a solution to the Iraqi problem will be found in a "no war" scenario. Originally the no-war scenario was thought to be of low

probability. Recent Administration statements, however, would seem to indicate that a disarmed Saddam could stay in power, if Iraq disarms, thus implying “no war.”

There are a range of possibilities for the no-war scenario itself. Especially at the outset, this scenario could be viewed as a continuation of the status quo, where uncertainty lingers as to whether or not there would still be a war. Alternatively, the no-war case could be one involving resolution without war: either total capitulation by Saddam Hussein or a coup where a new regime agrees to complete and unrestricted inspections and the destruction of all weapons stockpiles and the capability to manufacture such weapons.

The no-war scenario assumed here is one where considerable uncertainty remains for a while as to whether or not there will be an attack and Iraqi oil production continues to be erratic as it has been in recent years. These uncertainties could lead to further Iraqi oil supply limitations and upward pressure on prices. In the judgment of the Oil Panel, they do not. It is thought that the oil market will continue to discount Iraqi oil export behavior as it has in the past.

If Saddam capitulates, but stays, it can be presumed that the level of cooperation would be sufficient to avoid attack but the volumes of oil to be exported would hold roughly comparable to those volumes presently allowed under the “oil for food” program.

However, if Saddam were replaced, then the assumption changes, with Iraq producing and exporting at its full capacity. Oil prices then would decline with expanding supplies. Removal of Saddam likely would eliminate much of the uncertainty in the oil and financial markets and consumer confidence would return as well.

It should be kept in mind, however, that **any** oil-related scenario can be expected to yield instability, simply because of the multiple influences on the oil market and in turn on prices.

In the no-war scenario assumed by the Oil Price Panel, there is initially lingering uncertainty about whether there will ultimately be a war. Oil prices in this case hold steady during the first quarter of 2003, reflecting continuing market uncertainty, but then sharply decline in the second quarter, as the oil market calms in the “no war” aftermath and the so-called “war premium” disappears. Prices remain at this reduced level for the remainder of the year. As 2004 unfolds, output from both OPEC and non-OPEC sources expand beyond demand growth, OPEC discipline diminishes, and prices are depressed to a low \$16 before recovering.

	Oil Prices, By Quarter. “No War”		
	(\$/barrel)		
	2002	2003	2004
First quarter	21	30	20
Second quarter	25	22	16
Third quarter	27	22	16

Fourth quarter	30	22	20
Average for year	25	24	18

III. Oil Prices in the Three War Scenarios

The benign case

A U.S. invasion in Iraq in early 2003 meets little resistance. Iraqi forces collapse within weeks and regime change is taking place. There is no serious damage to the oil fields or oil infrastructure and no major acts of sabotage affecting other oil producing countries in the region or elsewhere in the world.

Iraqi oil production ceases for three months and is resumed slowly in the second quarter when all fighting has ceased, reaching 2 mbd plus by the third quarter. Other OPEC countries make up for most of the lost Iraqi production. Saudi Arabia, in particular, with some 2.5 million barrels per day of spare producing capacity at its disposal, has promised it would expand output to offset any losses of oil deriving from the conflict. All OECD member-countries have strategic oil stocks to draw upon, should there be a serious disruption in oil supply. A coordinated effort to draw down these stocks takes some time to put together, although just taking the decision to do so should have a calming effect. But, no decision is taken, as the International Energy Agency waits to see whether Saudi Arabia and others live up to past promises to offset any volumes lost. These promises are kept. In addition there will be some small amounts of fuel substitution mainly to gas, tightening gas markets.

Even so, under this scenario, the oil price most likely will spike at the initiation of hostilities, and there may be limited panic buying on the oil market, particularly by those countries most dependent on oil imports to meet demand.

Due to discontinuities and market psychologies, oil prices remain robust (average \$ 25/bbl) in the second quarter but, low demand growth, high incremental non-OPEC production and continued high OPEC production will have flooded the market by the third quarter, causing oil prices fall to the low twenties. Early in the conflict, a US government announcement of an intent to use the SPR, also has a calming impact on the market.

Average Oil Prices, Benign Scenario (\$/Barrel)

	2002	2003	2004
First quarter	21	36	24
Second quarter	25	25	24
Third quarter	27	21	20
Fourth quarter	30	22	20

Average for year	25.8	26	22
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The intermediate case

The US invasion of Iraq meets with stiff resistance by hard core Republican guards and although WMD are not used in this scenario, there are considerable numbers of military and civilian casualties. While major battles come to an end within a few weeks, continued sporadic attacks on US forces and acts of sabotage against the Iraqi oil infrastructure, keep Iraqi oil off the market for at least six month. Moreover, popular sentiment prevents governments in GCC countries with spare capacity, to increase production to make up for lost Iraqi supplies. Fear for oil shortages or even higher future prices causes stock build in non-IEA oil importing countries (few hold more than 30 days of commercial oil stocks).

Fully aware of the worsening of oil market conditions, the US government decides to release 1 mbd of SPR oil and manages to convince OECD allies to do the same (i.e. releasing 1 mbd of other IEA strategic stocks).

Despite these measures, global stocks remain tight through the first half of 2003 . Lower economic growth and subsequent lower oil demand growth, coupled with higher non-OPEC oil production and a gradual easing of Middle East oil production towards the fourth quarter, causes prices to fall towards \$ 30/bbl. Continued supply uncertainty in 2004 prevents a return to normal OPEC supply conditions leaving global commercial stocks fairly tight through 2004 and IEA countries increasingly exposed due to declining strategic stocks.

Average Oil Prices, Intermediate Case (\$/Barrel)

	2002	2003	2004
First quarter	21	42	30
Second quarter	25	40	30
Third quarter	27	36	30
Fourth quarter	30	30	30
Average for year	25.8	37	30

The oil price level established during the fourth quarter of 2003 is presumed to hold for all of the year 2004. OPEC member-countries hold relatively close to assigned export quotas, but Russia, while anxious not to contribute to any further price decline, takes only token volumes off the market.

The worse case

The Invasion meets stiff resistance and Iraq succeeds in using WMD in a last ditch effort to cause as many US casualties as possible. Iraq also succeeds in either firing a Scud

missile with a chemical warhead on a crowded area in Israel or, manages to use terrorists to explode a WMD (chemical or bacteriological) in an Israeli city. In either case, the resulting high Israeli casualties will result in massive retaliation by Israel which widens the conflict considerably. Tension reaches a boiling point throughout the Arab and Islamic world.

Retreating Republican Guards manage to set most oil wells in Iraq's producing fields afire, disabling Iraq's ability to produce any oil in 2003. Acts of sabotage by terrorists reduce oil exports in other Middle East oil producing countries and, the spreading conflict leads to serious discussions in the Arab League of using the oil weapon against the US and its allies. The above events cause a major oil supply disruption of perhaps 5-6 mbd. Despite a quick release of 2 mbd of SPR oil and after a few weeks of discussions an additional 1 mbd of other IEA strategic stocks, the combination of oil supply cuts and the psychological impact of a spreading war with no end in sight, causes oil prices to rise \$ 80/bbl average in the first quarter of 2003.

Equities fall sharply on OECD exchanges; housing prices decline; consumer confidence collapses; economic activity declines and unemployment rises noticeably. Higher oil prices combines with the recession impact results in sharply reduced oil demand by the end of the second quarter. Although oil stocks remain tight throughout 2003 and into much of 2004, collapsing oil consumption brings oil prices down to \$ 60/bbl average in the second and \$ 50/bbl in the third and fourth quarter. Continued turmoil throughout the region keeps Middle East oil production in 2004 below a level needed to bring prices down to a long term equilibrium price range in the low twenties. Instead, oil prices average around \$ 40/bbl in 2004, well above a price level required to return the global economy to positive growth.

On the demand side, the extremely high prices lead to considerable reductions in consumption but again well short of balancing supply and demand. There is consumer hoarding of oil supplies at all levels—by nation-states and by individual consumers—that further exacerbates the supply situation, although the real extent of the hoarding is difficult to measure.

Voluntary rationing comes into play; gasoline purchases are limited to 8 gallons; license plate numbers determine those days automobiles can be driven; thermostats are adjusted accordingly; electricity for lighting is used sparingly; illuminated outdoor advertisements are turned off; fuels substitution has a role, and natural gas benefits, but demand outstrips supply, driving up its price. Mass transportation is emphasized, as is telecommuting. It is President Carter's "moral equivalent of war" and the American public fully understands, and fully cooperates.

On the positive side, the events of 2003 under this scenario, will result in new action on US energy policy. In late 2003, the US Congress passes a landmark energy bill, opening up Alaska's wildlife refuge and other sensitive areas for oil exploration and production and, forces new and tighter CAFÉ standards on the car industry (move to diesel fuel). Strong Government support for a faster switch to hybrid and other alternative fuel

vehicles will cut into US long term oil import dependence following the outcome of the worse case scenario.

With the passage of time, the eventual defeat of Saddam Hussein becomes more evident. The oil supply-demand situation continues to improve, but slowly, allowing prices to continue to moderate throughout the year 2004, resulting in an average for that year of \$40 per barrel, but still substantially above prewar levels.

**Average Oil Prices, Worse Case
(\$/Barrel)**

	2002	2003	2004
First quarter	21	80	45
Second quarter	25	60	40
Third quarter	27	50	40
Fourth quarter	30	50	35
Average for year	25.8	60	40