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The real problems with \$50 oil

By Henry C K Liu

After oil prices peaked above US\$58 a barrel in early April, and stayed around their current \$50 range, the White House announced that it wanted oil to go back down to \$25 a barrel. There is a common misconception in life that if only things could go back to the ways they were in the good old days, life would be good again like in the good old days. Unfortunately, good old days never return as good old days because what makes the old days good is often just bad memory. The problem with market capitalism is that while markets can go up and markets can go down, they never end up in the same spot. The term "business cycle" is a misnomer because the end of the cycle is a very different place from the beginning of a cycle. A more accurate term would be "business spiral", either up or down or simply sideways.

Oil is a good example whereby this market truism can be observed. When oil rises above \$50 a barrel and stays there for an extended period, the resultant changes in the economy become normalized facts. These changes go way beyond fluctuations in the price of oil to produce a very different economy. Below are 10 new economic facts created by \$50 oil.

Fact 1: Oil-related transactions involving the same material quantity involve greater cash flow, with each barrel of oil generating \$50 instead of \$25. The United States now consumes about 20 million barrels of oil each day, about 25% of world consumption of 84 million barrels. At \$50 a barrel, the aggregate oil bill for the US comes to \$1 billion a day, \$365 billion a year, about 3% of 2004 US gross domestic product (GDP). About 60% of US consumption is imported at a cost of \$600 million a day, or \$219 billion a year. Oil and gas import is the single largest component in the US trade deficit, not imports from Japan or China.

As oil prices rise, consumers pay more for heating oil and gasoline, airlines pay more for jet fuel, utility companies pay more for oil, petrochemical companies pay more for raw material, and the whole economy pays more for electricity. Now those extra payments do not disappear into a black hole in the universe. They go into someone's pocket as revenue and translate into profits for some businesses and losses for others. In other words, higher energy prices do not take money out of the economy, they merely shift profit allocation from one business sector to another. More than \$200 billion a year goes to foreign oil producers who then must recycle their oil dollars back into US Treasury bonds or other dollar assets, as part of the rules of the game of dollar hegemony. The simple fact is that a rise in monetary value of assets adds to the monetary wealth of the economy.

Fact 2: Since energy is a basic commodity and oil is the predominant energy source, high energy cost translates into a high cost of living, which can also result in a higher standard of living if income can keep up. High energy cost translates into reduced consumption in other sectors unless higher income can be generated from the increased cash flow. Unfortunately, in the modern market economy, higher income for the general public often means working longer hours, since pay raises typically have a long time lag behind price increases. Working longer hours does not translate into productivity increases, but it does increase income. Those who cannot find overtime work will look for a second or third job, or put a hitherto



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non-working spouse back in the labor market. This generally lowers the standard of living, with less time for rest and leisure and for family and social life.

With higher prices, companies will hire more workers, since with wages remaining stagnant and the cost of worker benefits declining while company cash flow increases, adding employees will not hurt profitability and will enhance prospects for growth. Those who get paid by fixed commission on transaction volume are the winners. They see their income rise as the monetary value of the transaction rises. This ranges from sales agents and gas-station operators to real-estate brokers, investment bankers, mortgage brokers, credit-card issuers, etc. This translates into higher aggregate revenue for the economy and explains why corporate profit is up even when consumer discretionary spending slows. It also explains why employment can be up while the unemployment rate remains constant, because the new work goes mostly to those already employed or those newly entering the job market, but not to the chronically unemployed, who remain unemployed. A steady unemployment rate in an expanding labor pool means that unemployment is growing at the same rate as new employment. An unemployment rate of 5.2% - the US rate in April - is within the structural range (4-6%) of what neo-classical economists call a non-accelerating inflation rate of unemployment (NAIRU), thus presenting no inflation threat.

Fact 3: As cash flow increases for the same amount of material activities, the GDP rises while the economy stagnates. Companies are buying and selling the same amount or maybe even less, but at a higher price and profit margin and with slightly more employees at lower pay per unit of revenue. US prices for existing homes have been rising more than 30% annually for almost a decade, adding significantly to GDP growth. As the oil price rose within a decade from about \$10 a barrel to \$50, a fivefold increase, those who owned oil reserves saw their asset value increase also fivefold. Those who did not own oil reserves protected themselves with hedges in the rapidly expanding structured finance world. Since GDP is a generally accepted measure of economic health, the US economy then is judged to be growing at a very acceptable rate while running in place. People eat less beef and put the meat money into the gas tanks of their cars to pollute the air, shifting cancer risks from their colons to their lungs.

Fact 4: With asset value ballooning from the impact of a sharp rise in energy prices, which in turn leads the entire commodity price chain in an upward spiral, the economy can carry more debt without increasing its debt-to-equity ratio, giving much-needed substance to the debt bubble that had been in danger of bursting before oil prices began to rise. Since the monetary value of assets tends to rise in tandem over time, the net effect is a de facto depreciation of money, misidentified as growth.

Fact 5: High oil prices threaten the economic viability of some commercial sectors, such as airlines and motor vehicles. US airlines United and Delta recently won court approval to dump their pension obligations in a bankruptcy proceeding. A need to bolster pension costs, underfunded by \$5.3 billion, over the next three years would worsen Delta's cash flow problems. Delta faces \$3.1 billion in pension costs between 2006 and 2008. A bill under consideration by the US Senate would stretch out employee pension payments over 25 years, and could ease the airline's liabilities.



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United Airlines sought and received approval of its plan to have the government's pension insurer take over its defined-benefit plans, resulting in the largest-ever US pension default. United workers will lose about a quarter of their total pensions if their accounts are shifted to the government-run Pension Benefit Guaranty Corp (PBGC). United's effort to dump its pensions is being watched closely by the rest of the airline industry, where record high fuel costs, the lowest fares since the early 1990s and stiff deregulated competition have caused network carriers to lose billions of dollars. Delta lost over \$1 billion in the first quarter of 2005. A successful move by United to get out from under its pension obligations, following a similar step taken successfully by US Airways Group Inc in February, cleared the way for similar actions elsewhere in the industry and the economy. American Airlines, the largest US carrier and a unit of AMR Corp, has said it will keep its pension plans but is concerned about No 2 United gaining a financial advantage with the elimination of its pension obligations. Pension arbitrage is producing the same destructive effect on labor as cross-border wage arbitrage.

Detroit, namely Ford and General Motors, with their most profitable models being the gas-guzzling trucks and sport utility vehicles (SUVs) that can take more than \$100 to fill their tanks, are going down the same route with their pension obligations. General Motors Acceptance Corp (GMAC), a huge \$300 billion credit-finance company, is facing financial problems created by the falling dollar, rising interest rates, and falling auto sales. GMAC debt, at about \$260 billion, has fallen to junk status. GM's pension fund is underfunded by \$17 billion, at only 80% of its obligations. The prospect of a private pension collapse is more pressing than the accounting crisis in Social Security. As Ford and GM fall into financial stress, their extended network of parts and material suppliers is also falling into insolvency.

The result is that the PBGC will fail financially as more companies default on their pension obligations, the same way the Federal Deposit Insurance Corp (FDIC) did during the savings and loan crisis of the 1980s. On September 2, Labor Day 1974, the landmark Employee Retirement Income Security Act (ERISA) became law in the US, with the government insuring pensions for millions of workers. Since then, PBGC has paid more than \$8 billion in benefits to retirees under private-sector-defined benefit pension plans in the agency's care.

PBGC already administers the retirement benefits of almost 500,000 workers and retirees who were covered by about 2,700 terminated pension plans. Nearly half of them worked in five major industries: primary metals; airlines; industrial machinery; motor vehicles and parts; and rubber and plastics. PBGC insures more than 44,000 private-sector pension plans covering some 42 million workers, about one in every three US workers. Before PBGC was created, many workers labored without assurance of receiving the pensions they earned. In those not-so-good old days, there were instances where thousands of people lost all retirement benefits when their companies failed and could not keep pension commitments. Because of PBGC, this can no longer happen. When business failures occur and companies can no longer support their defined benefit pensions, PBGC will pay worker benefits as ERISA provides. But with entire industries going down the drain, PBGC, an insurance enterprise operating on the actuary principle of occasional unit default within healthy industries, cannot shoulder the cost of industrywide defaults without a federal bailout. Fifty-dollar oil will accelerate this crisis in government pension insurance.



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Fact 6: Industrial plastics, the materials most in demand in modern manufacturing, more than steel or cement, are all derived from oil. Higher prices of industrial plastics will mean lower wages for workers who assemble them into products. But even steel and cement require energy to produce and their prices will also go up along with oil prices. While low Asian wages are keeping global inflation in check through cross-border wage arbitrage, rising energy prices are the unrelenting factor behind global inflation that no interest-rate policy from any central bank can contain. Ironically, from a central bank's perspective, a commodity-price-pushed asset appreciation, which central banks do not define as inflation, is the best cure for a debt bubble that the central banks themselves created.

Fact 7: War-making is a gluttonous oil consumer. With high oil prices, America's wars will carry a higher price, which will either lead to a higher federal budget deficit, or lower social spending, or both. This translates into rising dollar interest rates, which is structurally recessionary for the globalized economy. But while war is relentlessly inflationary, war spending is an economic stimulant, at least as long as collateral damage from war occurs only on foreign soil. War profits are always good for business, and the need for soldiers reduces unemployment. Fighting for oil faces little popular opposition at home, even though for the United States the need for oil is not a credible justification for war. The fact of the matter is that the US already controls most of the world's oil without war, by virtue of oil being denominated in dollars that the US can print at will with little penalty.

Fact 8: There is a supply/demand myth that if oil prices rise, they will attract more exploration for new oil, which will bring prices back down in time. This was true in the good old days when oil in the ground stayed a dormant financial asset. But now, as explained by Facts 3 and 4 above, in a debt bubble, oil in the ground can be more valuable than oil above ground because it can serve as a monetizable asset through asset-backed securities (ABS) in the wild, wild world of structured finance (derivatives). So while there is incentive to find more oil to enlarge the asset base, there is little incentive to pump it out of the ground merely to keep prices low.

Gasoline prices also will not come down, not because there is a shortage of crude oil, but because there is a shortage of refinery capacity. The refinery deficiency is created by the appearance of gas-guzzlers that Detroit pushed on the consuming public when gasoline was cheaper than bottled water, at less than a \$1 a US gallon (26.5 cents a liter). Refineries are among the most capital-intensive investments, with nightmarish regulatory hurdles. Refineries need to be located where the demand for gasoline is, but families that own three cars do not want to live near a refinery. Thus there is no incentive to expand refinery capacity to bring gasoline prices down because the return on new investment will need high gasoline prices to pay for it. After all, the market is not a charity organization for the promotion of human welfare. It is a place where investors try to get the highest price for products to repay their investment with highest profit. It is not the nature of the market to reduce the price of output from investment so that consumers can drive gas-guzzling SUVs that burn most of their fuel sitting in traffic jams on freeways.

Fact 9: According to the US Geological Survey, the Middle East has only half to one-third of known world oil reserves. There is a large supply of oil elsewhere in the world that would be



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available at higher but still economically viable prices. The idea that only the Middle East has the key to the world's energy future is flawed and is geopolitically hazardous.

The United States has large proven oil reserves that get larger with rising oil prices. Proven reserves of oil are generally taken to be those quantities that geological and engineering information indicates with reasonable certainty can be recovered in the future from known reservoirs under existing economic and geological conditions. According to the Energy Information Administration (EIA), the US had 21.8 billion barrels of proven oil reserves as of January 1, 2001, twelfth-highest in the world. These reserves are concentrated overwhelmingly (more than 80%) in four states - Texas (25%, including the state's reserves in the Gulf of Mexico), Alaska (24%), California (21%), and Louisiana (14%, including the state's reserves in the Gulf of Mexico).

US proven oil reserves had declined by about 20% since 1990, with the largest single-year decline (1.6 billion barrels) occurring in 1991. But this was due mostly to the falling price of oil, which shrank proven reserves by definition. At \$50 a barrel, the reserve numbers can expand greatly. The reason the US imports oil is that importing is cheaper and cleaner than extracting domestic oil. At a certain price level, the US may find it more economic to develop domestic oil instead of importing. The idea of achieving oil independence as a strategy for cheap oil is unworthy of serious discussion.

And then there are "unconventional" petroleum reserves that include heavy oils, which can be pumped and refined just like conventional petroleum except that they are thicker and have more sulfur and heavy-metal contamination, necessitating more extensive and costly refining. Venezuela's Orinoco heavy-oil belt is the best-known example of this kind of unconventional reserves, currently estimated to be 1.2 trillion barrels. Tar sands can be recovered via surface mining or in-situ collection techniques. This is more expensive than lifting conventional petroleum but not prohibitively so. Canada's Athabasca Tar Sands are the best-known example of this kind of unconventional reserves, currently estimated to be 1.8 trillion barrels. Oil shale requires extensive processing and consumes large amounts of water. Still, unconventional reserves far exceed the current supply of conventional oil.

The economics of petroleum are as important as geology in coming up with reserve estimates since a proven reserve is one that can be developed economically. If the Mideast and the Persian Gulf implode geopolitically and oil from this region stops flowing, the US will be the main beneficiary of \$50 oil, or even \$100 oil, as would Britain with its North Sea oil and countries such as Norway and Indonesia. But the big winner will be Russia. For China, it would be a wash, because China imports energy not for domestic consumption, but to fuel its growing export machine, and can pass on the added cost to foreign buyers. In fact, the likelihood of the US bartering below-market Texas crude for low-cost Chinese manufactured goods is very real possibility in the future. Similar bilateral arrangements between China-Russia, China-Venezuela and China-Indonesia are also good prospects.

Fact 10: Fifty-dollar oil will buy the US debt bubble a little more time, albeit bubbles never last forever. But in a democracy, the White House is under pressure from a misinformed public to bring the oil price back down to \$25, not realizing that the price for cheap oil can be the bursting of the debt bubble. Despite all the grandstand warnings about the need to reduce the US trade deficit, a case can be made that the United States cannot drastically reduce its

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trade deficit without paying the price of a sharp recession that could trigger a global depression.

The economics of oil

Since the discovery of petroleum, its economics has never been about cutting a square deal for the consumer, corporate or individual, let alone the little guys or the working poor. It has to do with squeezing the most financial value out of this black gold.

John D Rockefeller consolidated the US oil industry into a monopoly by eliminating chaotic competition to keep the price high, not to push prices down. Neo-classical economics views higher prices of consumables as inflation, but asset appreciation is viewed as growth, not inflation. Since oil is both an asset and a consumable commodity, neo-classical economics presents a dilemma for oil economics. The size of oil reserves is exponentially greater than the annual flow of oil to the market. What is even more fundamental is that as the flow of oil to the market is reduced, the price of oil goes up, enlarging proven reserves by definition. Thus while a rise in the market price of oil adds to inflation, the corresponding rise of the asset value and size of oil reserves create a wealth effect that more than neutralizes the inflationary impact of market oil prices. The world should not care about an added percentage point in inflation if the world's assets would appreciate 17% as a result, except that when oil is not owned equally among the world's population, a conflict emerges between consumers and producers.

In fact, on an aggregate basis, cheap oil can have a deflationary impact on the economy by reducing the wealth effect. For the US economy, since the United States is a major possessor of oil assets, both on- and offshore, high oil prices are in the national interest. What we have is not an inflation problem in rising oil prices, but a pricing problem that distributes unevenly the benefits and pains of price adjustment among oil owners and oil consumers, both domestically and internationally.

On March 12, 1999, St Louis Federal Reserve Bank president William Poole said in a speech that the growth of the US money supply, which was then at more than 8% when inflation was below 2% annually, was "a source of concern" because it outpaced the rate of inflation. The M2 money supply had been growing at an 8.6% annual rate for the previous 52 weeks to keep the economy from stalling before the 2000 election. The US Federal Reserve was also watching the rate of inflation, held down mostly by low oil prices.

The rises and falls of OPEC

Failure by the Organization of Petroleum Exporting Countries (OPEC) to cut production at its meeting in November 1998 prompted prices to collapse to a 12-year low of \$10.35 a barrel in New York the following month. A combination of excess production, rising inventories and poor demand for winter heating fuels pushed prices down. In March 1999, oil prices climbed 17%, going higher as oil-producing countries, unified by low prices, succeed in cutting output. Oil prices began making a sharp recovery in the late winter of 1999, rising from the low teens at the beginning of the year to more than \$22 a barrel by the early autumn, and crossed \$30 a barrel in mid-February 2000. A major cause was production cuts settled upon in March 1999 by OPEC and other major oil-exporting nations. Poole warned that "we cannot continue to rely on the decline of oil prices at the pace of the last couple of years". He said



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investors who had pushed bond yields to their highest level in six months were correct in assuming the Fed's next move would be to increase interest rates. The Fed Open Market Committee (FOMC), when it met on February 2, 1999, had left the Fed Funds rate (FFR) target at 4.75%. Poole voted in 1998 for the FOMC to cut the FFR target three times between September and November to 4.75% when oil was at \$12.

Today, with oil at around \$48, the FFR target is 3% effective since May 3. Annualized growth rate for M2 in April 2005 (relative to April 2004) was 4.139%, a fall by more than half of the 1999 growth rate of 8.6%. If the Fed is really concerned with fighting inflation, \$48 oil and a 3% FFR target simply do not mix, even with a lowered money-supply growth rate. There is strong evidence that instead of worrying about inflation, the Fed is really more worried about the debt bubble, which stealth inflation through asset appreciation can help to deflate with less or no pain.

In July 1993, when the US economy had been growing for more than two years from M2 growth of over 6%, Fed chairman Alan Greenspan remarked in congressional testimony that "if the historical relationships between M2 and nominal income had remained intact, the behavior of M2 in recent years would have been consistent with an economy in severe contraction". With the M2 growth rate down to 1.44% in July 1993, Greenspan said, "The historical relationships between money and income, and between money and the price level, have largely broken down, depriving the aggregates of much of their usefulness as guides to policy. At least for the time being, M2 has been downgraded as a reliable indicator of financial conditions in the economy, and no single variable has yet been identified to take its place."

M2, adjusted for changes in the price level, remains a component of the Index of Leading Economic Indicators, which some market analysts use to forecast economic recessions and recoveries. A positive correlation between money-supply growth and economic growth exists only on inflation-adjusted M2 growth, and only if the new money goes into new investment rather than as debt to support speculation on rising asset prices. Sustainable economic expansions are based on real production, not on speculative debt.

In 2004, longer-term interest rates actually declined from their June high of 4.82% to 4.20% at year-end even as short-term rates rose and the money supply grew at a 5.67% annual rate. This reflected a credit market unconcerned with long-term inflation despite a sinking US dollar and oil prices rising above \$50 a barrel. The reason is that \$50 oil raised asset value at a faster pace than price inflation of commodities.

In March 2000, OPEC punctured the Greenspan easy-money bubble by reversing the fall of oil prices. The FOMC was forced to respond to the change in the rate of inflation, no longer being held down by declines in oil prices. Because the easy money stimulated only speculation that did not produce any real growth, the easy-money bubble of 2000 evolved into the current debt-driven asset bubble. The smart money realized in 2000 that the market's march toward \$50 oil was on. And in 2005, \$50 oil appears to be giving Greenspan's debt-driven asset bubble a second life, most of which ended in the real-estate sector. If oil should fall back to \$25 a barrel, the debt-driven asset bubble will pop with a bang.

Oil is not included in the World Trade Organization (WTO) regime because it is not a commodity that can be produced at will by any nation, regardless of efficiency. Oil producers are



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members of a natural monopoly devoid of open competition. Yet OPEC is a cartel. As such, it will eventually conflict with the competition policy thrust of the WTO. Under WTO rules, oil-producing nations cannot be charged with price-fixing if they intervene to affect market prices. OPEC, the International Monetary Fund (IMF) and the WTO are among the most visible international economic organizations. The WTO regime imposes draconian free-market rules on trade except for oil and currencies, while OPEC blatantly practices intergovernmental manipulation of oil prices and the IMF acts as the world's policeman in defense of dollar hegemony. Neo-liberal economists do not see OPEC and the IMF as trade-restricting monopolies, arguing that their separate domains of oil and currencies are not part of the concern of the WTO regime. Concerted government intervention against market forces in the price of oil and currencies are tolerated in the name of needing to correct market failures. The fact of the matter is that the term "market" is a misnomer for oil and currency transactions. These commodities change hands not in a market, but in an allotment schema arranged from a central control point in a neo-feudal regime.

A major key to understanding the operation of OPEC is the internal battle for market share within OPEC by its members, causing aggregate OPEC production to be higher than what serves even the cartel's overall interest. Discontinuities in the production of Iraq and Iran were caused by the Iraq-Iran conflicts between 1980 and 1988. A second discontinuity in 1990 was caused by Iraq's invasion of Kuwait and the ensuing Gulf War. A third discontinuity occurred when the US invaded Iraq in 2003. A fourth discontinuity is pending over Iran's march toward nuclear-power status. As a major oil producer, Iran needs nuclear power for civilian use as much as coal-producing Newcastle needs oil. Obviously, other agendas are at work. OPEC was formed in 1960 with five founding members: Iran, Iraq, Kuwait, Saudi Arabia and Venezuela. By the end of 1971, six other nations had joined the group: Qatar, Indonesia, Libya, the United Arab Emirates, Algeria and Nigeria. Of these, only Venezuela is non-Islamic. OPEC emerged as an effective cartel only after the Arab oil embargo that started on October 19, 1973, and ended on March 18, 1974. During that period, the price for benchmark Saudi Light increased from \$2.59 in September 1973 to \$11.65 six months later in March 1974. Since then, OPEC has been setting bottom benchmark prices for its various kinds of crude oil in the world market.

The oil price dipped below \$10 after the Asian financial crisis of 1997. By 1984, the effects of seven years of high prices had taken its toll on demand in the form of more energy-efficient homes and industrial processes, and in substantial increases in automobile fuel efficiency, not to mention new competitive use of coal. At the same time, crude-oil production was increasing throughout the world, stimulated by higher prices. During this period, OPEC total production stayed relatively constant, around 30 million barrels per day. However, OPEC's market share was decreased from more than 50% in 1974 to 47% in 1979. The loss of market share was caused by non-OPEC production increases in the rest of the world. Higher crude prices caused by OPEC production sacrifices had made exploration more profitable for everyone, not just OPEC, and many non-OPEC producers around the world rushed to take advantage of it.

The rapid oil-price increases since 1980 served to accelerate consumer moves toward energy efficiency. In the US, conservation was also helped by tax incentives and new regulations. Sharp increases in non-OPEC production fueled by high oil prices were compounded by the deregulation of domestic crude-oil prices in the US.



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Global demand for oil had peaked by 1979 and it became clear that the only way for OPEC to maintain prices was to reduce production further. OPEC reduced its total production by a third during the first half of the 1980s. As a result, the cartel's share in world oil production dropped below 30%. Non-OPEC producers got a big lift from higher prices, larger market shares, and an expanded definition of proven reserves.

Looking at OPEC members' production share within the organization and not their share of total world production, one could clearly see Saudi Arabia acting as swing producer for OPEC during the first half of the 1980s in the cartel's attempt to shore up declining prices. By 1986, the Saudis got tired of playing this role as other OPEC member countries were cheating on their quotas at Saudi expense. In response, Saudi Arabia rapidly increased production, causing a major price collapse. It created an oil boom in oil-consuming economies and a recession in oil-producing economies. But since the oil-producing economies were the consumers of the manufactured products made by the oil-consuming economies, recession in oil-producing economies caused a worldwide recession, as reflected in the 1987 crash in the US stock markets.

It took almost three years for oil prices to recover. The lower prices did have a long-term beneficial effect for OPEC. They encouraged increased consumption and halted production increases in much of the rest of the world, causing among other things the oil depression in Texas. By the end of the decade of the 1980s, prices finally stabilized. Throughout the late '80s, however, when oil prices plummeted, bankrupt oil drillers dragged Texas banks under, causing the entire oil-dominated Texas economy to go into convulsion. Today, in a globalized debt market, if a major borrower goes bust in Texas, it would only affect dispersed small units of commercial asset-backed security bonds of unbundled risks held in countless money managers' portfolios all over the world. The effect would be so diffused that no one would even notice. Securitization of debt now stands at more than \$4 trillion globally, up from \$375 billion in 1985.

OPEC, or any other cartel, faces a problem of optimization in its attempts to control prices. The problem is to determine the level of production that meets its collective goals of highest prices with the biggest volume over the longest sustainable period. For OPEC, this means maintaining production levels that ensure the highest oil prices possible without encouraging competitive production outside OPEC or significant conservation measures on the part of consumers everywhere.

The Saddam Hussein factor

In January 1990, Saudi Arabia and Kuwait had 24% and 9% of OPEC's total production. Iraq and Iran had 13% and 12% respectively. Iraq was involved at this time in a territorial dispute with Kuwait. Negotiations between the two Arab countries failed to produce any solution. In a meeting on July 25, 1990, between Iraqi president Saddam Hussein and US ambassador April Glaspie, Saddam was assured that the US would not become involved in the Arab-to-Arab political dispute. It was a major factor in Iraq's decision to reincorporate Kuwait by force. A week later, on August 2, 1990, Iraq invaded and occupied Kuwait, giving it control of 22% of OPEC production.



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The United States, belatedly realizing that political consolidation of Arab oil was against its long-standing policy of divide and rule, reversed itself on the basis of defending the principle of state sovereignty, and became the major force in restoring Kuwait's questionable sovereignty and de facto oil ownership early in 1991. At this point, the US-engineered embargo prevented the export of Iraqi oil, and Kuwait's oilfields had been destroyed by war. Iraq and Kuwait had virtually no production and the slack was taken up by other OPEC members, primarily Saudi Arabia. In February 1991, Saudi Arabia's production accounted for more than 35% of OPEC output. The Saudis had increased production sufficiently to compensate for the loss of Kuwait's production as well as some of that of Iraq. The Saudis were forced by US pressure to pay for the cost of the Gulf War and by Arab pressure to provide financial aid to defeated Iraq under the table, all from the windfall revenue. Not much was changed in the oil economics of the region except in the political accounting.

By December 1998, Saudi Arabia's global market share was 29.7%, Kuwait's 7.4%, Iran's 13.0%, Iraq's 8.4% and Venezuela's 11.0%. Saudi Arabia had the greatest increase in market share compared with the pre-Gulf War period, although it had fallen back from its 35% postwar peak, as Kuwait and Iraq recovered. Venezuela was third, after Iran. In addition, the Saudis have always had the largest volume of production. At most times, the Saudis produce at least twice as much as the second-largest OPEC producer. Those who follow OPEC will recall that, especially in the 1980s, many of the negotiations over production quotas included discussions of what was equitable for the member countries. Among the factors considered were population, per capita income and the economic dependence upon crude-oil exports and, last but not least, economic threats to political stability.

By the end of the 1980s, most of the issues about the sharing of the total OPEC production pie had been resolved. But all of the explicit and implicit agreements in place at that time were disrupted by Iraq's invasion of Kuwait and the ensuing Gulf War. After the war, OPEC tried to move back toward the pre-Gulf War agreements on splitting up the production pie and return to the old method of doing business. Some consideration was given to the economic needs of OPEC members as well as non-OPEC members with emerging economies, such as Mexico.

The Hugo Chavez factor

Venezuela was a case in point. The country was on its economic knees or worse, victimized by neo-liberal policies of accepting foreign debt secured by oil exports and driven to the ground by IMF conditionality rescues. Despite the fact that Venezuela had increased its share of OPEC production significantly over the previous decade, OPEC declined to demand that Venezuela give up its gains. OPEC agreed on another cutback in production to boost prices in 1997 without requiring Venezuela to share proportionately in that cut. Yet Venezuela continued to view oil prices as too low to meet its needs in servicing foreign debt. OPEC was bending backward in vain to avoid pushing Venezuela into a left-leaning revolution. There was a lot of pressure from the US on Saudi Arabia to shoulder a disproportionate share of the cuts after 1997.

Under US pressure, OPEC tolerance changed after Hugo Chavez was elected president of Venezuela in 1998 with 56% of the vote, and re-elected in 2000 under the new constitution with 59% of the vote. In November 2000, the National Assembly granted Chavez the right to



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rule by decree for one year, and in November 2001, he made a set of 49 decrees, including fundamental reforms in oil and agrarian policy. In December 2001, the nation's largest business organizations and the right-dominated Petroleum Workers Union organized a general strike. In 2002, the US-backed opposition forces staged an unsuccessful coup that was foiled by a massive popular uprising, with support from the rank-and-file members of the military. Chavez was restored to the presidency after 48 hours. A recall referendum, certified by the Organization of American States and the Carter Center, failed by giving Chavez a 58% majority.

Chavez' popularity in Venezuela and throughout Latin America, where two-thirds of the South American continent have elected leftist presidencies, has grown. As oil prices soared in the wake of the second Iraq war and from booming Chinese demand, oil-rich Venezuela gained financial power to refuse predatory loans and aid from the United States, in its struggle to distance itself from US domination. Washington's influence in Caracas evaporated, as Chavez accused the administration of US President George W Bush of having staged the failed 2002 coup. A 35-year military agreement between the US and Venezuela was unilaterally annulled by Venezuela on April 24 this year.

Supply and demand

Current oil-price levels are a reflection of a fleeting inventory problem rather than a long-term pricing issue. There is of course no, and has never has been, a problem with the natural supply of oil. The world will still be awash with oil even after petroleum is rendered obsolete by new energy technology. When US president Bill Clinton threatened to release US strategic reserves in the 1990s, OPEC signaled its decision to increase production immediately more than once, not because of market fundamentals, but as political gestures. Many economists think that \$35 oil in the long run is good for the global economy. At any rate, oil is no longer a critical factor for the US economy, which is increasingly less dependent on oil for growth. GE announced in February 2000 a new turbine that would be 60% more efficient than current models in generating electricity for the same energy input. The news did not help GE stock prices.

There was solid evidence that the 1970s recycling of petrodollars, which mostly ended up in the dollar assets in the United States anyway, contributed to US inflation as much as the higher retail price of gasoline. It in essence siphoned off additional global funds to purchase higher-priced oil for investment in US real estate, which was the only sector the then unsophisticated Arab money managers thought they knew enough about to handle. By the 1990s, they were more sophisticated. Some had expected that a new injection of petrodollars would sustain the collapsing "new economy" equity market of the '90s. It did not work because, even at \$35, oil was still behind its pre-1973 price relative to the peak Nasdaq in June 1999, the equivalent of which would bring \$120 oil.

The drop in oil prices after 1997 was mostly a cyclical effect of the drastic reduction of demand from the Asian financial crisis, which impacted the whole world. There was zero pressure even in the US to raise oil prices at that time, because of the effect they had on keeping easy-money inflation low. Even oil companies were not really upset by this temporary condition because, until oil prices dropped below \$7 per barrel, it was not a big deal since that was the offshore production cost in the North Sea. The wellhead cost on land was less than \$4



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per barrel, plus market-induced leasehold costs. North Sea oil was higher because of fixed offshore drilling investments. In 1998, oil could stay at anywhere above \$7 for quite a few years without doing any lasting harm to the US or Europe. It was widely expected to go back up to \$35 by the end of 2000, and a lot of people would get rich in the process. OPEC was touting the line of argument that high prices would stimulate new exploration to get the non-OPEC consumers to accept costlier oil. In the long run, less new exploration would be good for OPEC. Before 1973, the whole world was happy with \$3 oil. As for the US, cheap oil kept inflation (as measured by the Fed) low, the dollar high and dollar interest rates low. These benefits outweighed the oil-sector problems created by a collapse in oil prices. In oil, no one has told the truth for more than 80 years, or since its discovery.

There were all kinds of reasons that US president George H W Bush pushed Iraq out of Kuwait, Clinton bombed Iraq, and Bush Jr invaded and occupied it, but oil prices were very low on the list and terrorism was not even on the list. If Iraqi oil re-enters the world market, other OPEC members will reduce the production quota, so the real impact on prices will be minimum. Most market analysts have estimated the price movement at less than \$1 under such development. So at the post-1997 price of \$10-plus per barrel, only the profit margin was reduced and some idiotic oil brokers in Chicago holding high futures contracts, and some high-rolling investors in oil rigs in Texas, got wiped out, including a future occupant of the White House. But the good news for the oil industry was that it gave a big boost to oil-company mergers to consolidate the sector and reserves and downsize employment, which in better times the US government would have never approved for antitrust reasons.

As Asia recovered from the 1997 financial crisis, lifted mostly by China, the oil industry found itself in the position to command \$50 oil in the next cycle, and enjoyed the inflated value of its global reserves, which it had bought up at low cost a decade ago. The low prices of the past decade had also put OPEC countries, predominantly Islamic, in their places, including the bonus of Indonesia and Russia, which had to live exclusively on oil exports (not really living, because all of the reduced revenue went to service foreign debts assumed in better times). With globalization, the US, the center, has been enjoying the rotting of the outer limbs of the global economy since the end of the Cold War, but it has yet to realize gangrene kills the whole organism.

Iraq was not an oil problem as far as Washington was concerned. In fact, low oil prices worked against Saddam in the black market. Saddam has been portrayed by the US as one of its worst enemies. But he has not always worn and will not always wear that honor, given the unpredictability of Iran. The terrorist attacks on the US on September 11, 2001, put a new dimension on the problem of Iraq. The reason the US failed to kill Saddam was not incompetence or Christian mercy, but the fact that Saddam might not have been the worst alternative. He was just a bad boy who misbehaved. What Washington wanted was for Saddam to be its bad boy. Saddam is far from totally finished politically. The world has seen stranger things than the political rehabilitation of Saddam Hussein. He has a major advantage over Bush Jr, as he did over Clinton and Bush Sr. Saddam has a focused purpose whereas Clinton, the Bushes, and US policy are all driven by complex incentives that are at times contradictory. The political economy of oil is no intellectual tea party. There is no price economics in oil. It's all politics of the dirtiest kind.



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The problem with cheap oil

It is often overlooked that the United States is a major oil producer. In fact, before the discovery of oil in the Middle East in the 1930s, the US was the world's biggest exporter of oil. "Oil for the lamps of China" was a slogan of the Standard Oil monopoly. It is not clear that cheap oil is in the United States' national interest. Cheap oil distorts the US economy in unconstructive ways. In recent years of cheap oil, advances in conservation have all been abandoned. Until this year, US consumers were buying eight-cylinder SUVs that deliver only eight miles per gallon (29 liters per 100 kilometers), as well as air-conditioned convertibles. Even with \$2 (53 cents per liter) gasoline, commuters face only a \$500 annual increase in their gas bills. Vehicle prices have risen faster than gasoline prices in recent decades. Of course, the rest of the world outside the US has been operating on \$4 (more than \$1 per liter) gasoline for a long time.

It is an economic axiom that excessively low commodity pricing breeds abuse of that commodity. This truth can be observed in water, air, petrochemicals and energy. It holds true even for labor and capital. Higher labor cost drives productivity growth. Greenspan's favorite homely is: "Bad loans are made in good times."

OPEC had been permitted to assume an effective cartel role only at the pleasure of the United States. The existence of OPEC serves several convenient US geopolitical purposes. It deflects political opposition to the international oil regime from the US toward a mostly Arab/Islamic organization, yet the health of OPEC is inseparably tied to the health of the energy corporations of the West that control all the downstream operations. OPEC is an example of how economic nationalism can be co-opted into Western-dominated neo-imperialist globalization.

Excessively high oil prices are of course as detrimental to an economy as excessively low oil prices. The last downturn in crude-oil prices had immediate impacts on the exploration segment of the industry. Coincident with that was a decline in sales and manufacture of oil and gas equipment. Another segment of the industry that felt the pressure of the price decline was oil and gas services.

According to James Williams of WTRG Economics, oil prices behave much as any other commodity, with wide price swings in times of shortage or oversupply. US domestic oil prices were heavily regulated through production or price control throughout much of the 20th century. In the post-World War II era, oil prices averaged \$19.27 per barrel in 1996 dollars. Through the same period, the median price for crude oil was \$15.27 in 1996 prices. That meant that only half of the time from 1947 to 1997 did oil prices exceed \$15.26 per barrel. Prices only exceeded \$22 per barrel in response to war or conflict in the Middle East. In 1972, \$3.50 oil translated to \$11.50 in 1996 dollars and \$16.29 in 2005 dollars.

The long-term view is much the same. Since 1869, US crude-oil prices adjusted for inflation have averaged \$18.63 per barrel in 1996 dollars. Fifty percent of the time, prices were below \$14.91. Using long-term history as a guide, those in the upstream segment of the crude-oil industry structured their business to be able to operate profitably below \$15 per barrel half the time.



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Pre-embargo crude-oil prices ranged between \$2.50 and \$3 from 1948 through the end of the 1960s. The price of oil rose from \$2.50 in 1948 to about \$3 in 1957. When viewed in 1996 dollars, an entirely different story emerges. In 1996 dollars, crude-oil prices fluctuated between \$14 and \$16 during the same period. The apparent price increases were just keeping up with inflation. From 1958 to 1970, prices were stable at about \$3 per barrel, but in real terms the price of crude oil declined from above \$15 to below \$12 per barrel in 1996 dollars. The decline in the price of crude when adjusted for inflation was exacerbated in 1971 and 1972 by the weakness of the US dollar.

Member nations had experienced a decline in the real value of their oil since the foundation of OPEC. Throughout the post-World War II period, exporting countries found increasing demand for their crude oil was rewarded by a 40% decline in the purchasing power in the price of a barrel of crude until March 1971, when the balance of power shifted. That month, the Texas Railroad Commission set pro ration at 100% for the first time. This meant that Texas producers were no longer limited in the amount of oil that they could produce. More important, it meant that the power to control crude-oil prices shifted from the US cartel (Texas, Oklahoma and Louisiana) to OPEC.

In 1972, the price of crude oil was about \$3 and by the end of 1974 had quadrupled to \$12. The Yom Kippur War started on October 5, 1973. The US and many other Western countries gave strong support to Israel. To punish such support, Arab oil-exporting nations imposed an embargo on the nations supporting Israel. Arab nations curtailed production by 5 million barrels per day. About 1mbpd was made up by increased production of non-Arab/Islamic producer countries. The net loss of 4mbpd extended through March 1974 and represented 7% of Western world production. Any doubt that the ability to control crude-oil prices had passed from the US to OPEC was removed during the 1973 Arab oil embargo. The extreme sensitivity of prices to supply shortages became all too apparent, though obviously unsustainable over the long term. Prices increased 400% in six short months. The abrupt jump, not the high price itself, caused destabilizing damage to the US and other Western economies.

From 1974 to 1978, crude-oil prices increased at a moderate pace from \$12 per barrel to \$14, mostly due to adjustments in demand moderated by increases in alternative sources of supply. When adjusted for inflation, prices were constant over this period of time. War between Iran and Iraq led to another round of increases in 1980. The Iranian revolution resulted in the loss of 2-2.5mbpd between November 1978 and June 1979. Starting in 1980, Iraq's crude-oil production fell 2.7mbpd and Iran's by 600,000 barrels per day during the Iran-Iraq War. The combination of these two events resulted in crude-oil prices more than doubling from \$14 in 1978 to \$35 per barrel in 1981.

The rapid increase in crude prices in this period would have been much less were it not for US energy policy. The US imposed price controls on domestically produced oil in an attempt to lessen the impact of the 1973-74 price increase. The obvious result of the price controls was that US consumers of crude oil paid 48% more for imports than domestic production, while US producers received less. In the short term, the recession induced by the 1973-74 price rise was made less painful by oil price control. However, in the absence of price controls, US exploration and production would certainly have been significantly greater, counterbalancing the economic decline. The higher prices faced by consumers would have resulted



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in still lower rates of consumption: automobiles would have had higher fuel efficiency sooner, homes and commercial buildings would have been better insulated and improvements in industrial energy efficiency would have been greater than they were during this period, thus cushioning the recession. As a consequence, the US would have been less dependent on imports in 1979-80 and the price increase in response to Iranian and Iraqi supply interruptions would have been significantly less.

OPEC has seldom been effective as a cartel. During the 1979-80 period of rapidly increasing prices, Saudi Arabia's oil minister, Ahmed Yamani, repeatedly warned other members of OPEC that high prices would lead to a reduction in demand. For example, Armand Hammer's Occidental Oil joint venture with the Chinese Ministry of Coal to export coal-derivative fuel based on \$50 oil was bound to head toward financial disaster. The coal project in China failed by 1986 as oil prices fell.

The rapid price increases caused several reactions among consumers: better insulation in new homes, increased insulation in many older homes, more energy efficiency in industrial processes, and automobiles with lower fuel consumption, all with various forms of government subsidies or tax relief. These factors along with a global recession caused a reduction in demand that led to further falling crude prices. Unfortunately for OPEC, while the global recession was temporary, nobody rushed to remove insulation from their homes or to replace energy-efficient plants and equipment when the economy recovered. Much of the consumer reaction to the oil-price increase of the end of the decade was permanent and would not respond to lower prices with increased demand for oil.

From 1982 to 1985, OPEC attempted to set production quotas low enough to stabilize prices. These attempts met with repeated failure as various members of OPEC continued to produce beyond their quotas. During most of this period, Saudi Arabia acted as the swing producer cutting its production to stem the free-falling prices, as it intends to do now to halt the rise in price. In August 1985, the Saudis, tired of this role, linked their oil prices to the spot market for crude and by early 1986, increased production from 2mbpd to 5mbpd. Crude-oil prices plummeted below \$10 per barrel by mid-year. China had a new minister of coal that same year.

A December 1986 OPEC price accord set to target \$18 per barrel was already breaking down by the following month. Prices remained weak. The price of crude oil spiked in 1990 with the uncertainty associated with the Iraqi invasion of Kuwait and the ensuing Gulf War. Within hours of the first air strike against Iraq in January 1991, the White House announced that president Bush Sr was authorizing a drawdown of the Strategic Petroleum Reserve (SPR), and the International Energy Agency (IEA) activated the plan on January 17. After the oil crisis of 1973-74, the IEA was created as a cooperative grouping of most of the member countries of the Organization for Economic Cooperation and Development, committed to responding swiftly and effectively in future oil emergencies and to reducing their dependence on oil.

Crude prices plummeted by nearly \$10 a barrel in the next-day trading, falling below \$20 for the first time since the Iraqi invasion of Kuwait. The price drop was attributed to optimistic reports about the allied forces' crippling of Iraqi air power and the diminished likelihood, despite the outbreak of war, of further jeopardy to world oil supply; the IEA plan and the SPR



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drawdown did not appear to be needed to help settle markets, and there was some criticism of it. Nonetheless, more than 30 million barrels of SPR oil was put out to bid, and 17.3 million barrels were sold and delivered in early 1991. But after the war, crude oil prices entered a steady decline until 1994, when inflation-adjusted prices attained their lowest level since 1973. The price cycle then turned up. With a strong economy in the US and a booming economy in Asia, increased demand led a steady price recovery well into 1997. This came to a rapid end as the impact of the 1997 financial crisis in Asia was underestimated by OPEC, being advised by the IMF. That December, OPEC increased its quotas by 10% to 27.5mbpd, but the rapid growth in Asian economies had come to a halt and reversed direction by half.

The rotary rig count is the average number of drilling rigs actively exploring for oil and gas. Drilling an oil or gas well is a high-risk, capital-intensive investment bet in the expectation of returns from the production of crude oil or natural gas in an uncertain market. Rig count is one of the primary measures of the health of the exploration segment of the oil and gas industry. In a very real sense, it is a measure of the oil and gas industry's confidence in its own future. At the end of the Arab oil embargo in 1974, rig count was below 1500. It rose steadily with regulated rise of crude-oil prices to more than 2000 in 1979. From 1978 to the beginning of 1981 domestic US crude-oil prices exploded from a combination of the rapid growth in world energy prices and deregulation of domestic prices. Forecasts of crude prices in excess of \$100 per barrel fueled a drilling frenzy. By 1982, the number of rotary rigs running had more than doubled.

The peak in drilling occurred more than a year after oil prices had entered a steep decline that continued until the 1986 price collapse. The one-year lag between crude prices and rig count disappeared in the price collapse. For the next few years, towns in the oil patch were characterized by bankruptcies, bank failures and high unemployment. Investors as far-flung as Hong Kong, Tokyo, Singapore and London went under with it. Several trends were established in the wake of the collapse in crude prices. The lag of more than a year for drilling to respond to crude prices is now reduced to a matter of months. Like any other industry that goes through hard times, the oil business emerged smarter and much leaner. Industry participants, bankers and investors were far more aware of the risk of price movements. Companies long familiar with accessing geologic risk added price risk to their decision criteria. Financial hedging came into play in the construction of risk-management models.

Increased use of three-dimensional seismic data reduced drilling risk. Directional and horizontal drilling led to improved production in many reservoirs. Financial instruments were used to limit exposure to price movements. Increased use of floods to improve production in existing wells became common. Rig count is certainly a good measure of activity, but it is not a measure of success. After a well is drilled, it is classified either as an oil well, a natural gas well or a dry hole. The percentage of wells completed as oil or gas wells is frequently used as a measure of success, often referred to as the success rate.

Immediately after World War II, 35% of the wells drilled were dry wells. This percentage increased to about 43% by the end of the 1960s. It declined steadily during the 1970s to reach 30% at the end of the decade. This was followed by a plateau or modest increase through most of the 1980s. Beginning in 1990 shortly after the harsh lessons of the price collapse, non-completion rates decreased dramatically to 23%. These rates are closely watched by in-



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vestors. Since the percentage completion rates are much lower for the more risky exploratory wells, a shift in emphasis away from development would be expected to result in lower overall completion rates. This, however, was not the case. An examination of completion rates for development and exploratory wells shows the same general pattern. The decline in dry holes was price-related. The higher the price, the fewer dry holes.

Some would argue that the periods of decline in successful drillings were a result of the fact that every year there is less oil to find. If the industry does not develop better technology and expertise every year, oil and gas completion rates should naturally decline. However, this does not explain the periods of increase. The increase of the 1970s was more related to price than technology. When a well is drilled, the fact that oil or gas is found does not mean that the well will be completed as a producing well. The determining factor is price economics (even though oil prices are fundamentally set politically). If the well can produce enough oil or gas at anticipated prices to cover the cost of completion and the ongoing production costs, it will be put into production. Otherwise, it is an economic dry hole even if crude oil or natural gas is found. The conclusion is that if real prices are increasing, we can expect a higher percentage of successful wells. Conversely if prices are declining, the opposite is true. Thus higher prices increase supply, regardless of natural conditions and technology.

The success-rate increases of the 1990s, however, could not be explained by higher prices alone. These increases were clearly also the result of improved technology. The increased use of and improvements in 3-D seismic data analysis combined with horizontal and directional drilling. Most dramatic was the improvement in the percentage of exploratory wells completed. In the 1990s completion rates have soared from 25% to 45%.

Worked-over rig count is a measure of the industry's investment in the maintenance of oil and gas wells. The Baker-Hughes worked-over rig count includes rigs involved in pulling production tubing from a well that is 1,500 feet (457 meters) or more in depth. Worked-over rig count is another measure of the health of the oil and gas industry. Most work-overs are associated with oil wells. Worked-over rigs are used to pull tubing for repair or replacement of rods, pumps and tubular goods that are subject to wear and corrosion. A low level of worked-over activity is particularly worrisome because it is indicative of deferred maintenance. When operators are in a weak cash position, work-overs are delayed as long as possible. Worked-over activity impacts manufacturers of tubing, rods and pumps. Service companies coating pipe and other tubular goods are heavily affected. This of course leads to lower supply down the road and higher prices. Higher prices reverse the process, which ends up with lower prices later. Fifty-dollar oil will keep the oil sector expanding for some time.

OPEC and the independents

A critical November 1998 OPEC meeting failed to reverse the decline in oil prices. OPEC in 1997 had an earlier failure when it approved a 10% quota increase at a time when the Asian economies were entering a prolonged slump after the financial crisis. As a result, OPEC, until the recent hike in oil prices that began around 2000, experienced the lowest prices for crude oil after adjusting for inflation since the pre-embargo days of 1972.

Market share and price are recurring themes at OPEC meetings. The problem is that you cannot have both for long. To increase market share, OPEC must increase production suffi-



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ciently to drive prices down to the point that it is not economical for non-OPEC producers to maintain current production rates. Unfortunately for OPEC, the full realization of the impact of lower prices on non-OPEC producers can be effectuated only over a period of several years. The effect of lower prices is greatest in countries and areas with the highest exploration and production costs. Onshore production in areas with high lifting cost is usually the first to show reduction in activity. Because of long-term decisions involved, offshore producers often take longer to react to lower prices.

The term "independent" in the oil business generally applies to a producer of oil or gas that does not also own downstream facilities such as refineries, gasoline or diesel distribution, or retail gas stations. A 1998 survey of 24 of the larger US oil companies indicated that on the average it cost \$4.48 to "find" a barrel of oil and \$4.12 to produce it. That means there will be no profit for this group below \$8.60 per barrel for new oil and no positive cash flow from operations below \$4.12 per barrel.

Of course industrial averages are quite different from specific reality for any one company. Average production costs are just that - averages. Many oilfields have much higher costs - in some cases, as much as four times the average. Many small independent producers were going under financially prior to the rise in oil prices. Independents had reduced their workforce by 20% and shut down 50% of their production. Any further reduction in production would cause significant damage to the reservoirs. One company reported that it reduced lifting cost to \$8 per barrel, but is only receiving an average of \$6.80 per barrel.

Traders watch crude prices through the NYMEX (New York Mercantile Exchange) or IPE (International Petroleum Exchange) windows, but neither the NYMEX price nor the IPE price is the price that producers receive. The NYMEX is not only the largest physical-commodity exchange in the world but one of the most innovative and dynamic. The exchange's energy and metals markets provide a wide spectrum of risk-management and trading tools, with more than 130,000 total energy options contracts traded daily.

London-based IPE is Europe's leading energy futures and options exchange, providing a highly regulated marketplace where industry participants can use futures and options to minimize their price exposure in the physical energy market. More than \$8 billion daily in underlying value is traded on the IPE. The price that a producer receives is heavily influenced by location and quality, and in almost all cases the price is significantly less than the prices quoted on the various exchanges. On December 29, 1998, IPE February Brent closed at \$10.61 and NYMEX February light crude closed at \$11.70. On the same date, one of the major crude-oil marketers was offering to purchase crude for as little as half that amount. June 2005 futures were trading at \$46.80 and November 2005 futures were trading at \$51.17 on Monday this week.

The impact of low prices on the industry is significant. By October 1999, employment in oil and gas extraction was down 7.2% from 1997. Over the same period overall US employment was up 2.3%. That was an employment-rate gap of almost 10%. When the data came in for the rest of the year the rate gap widened even more. It would be even more extreme if the statistics could isolate oil extraction from natural-gas extraction. In many companies gas had been subsidizing oil, and gas was not doing all that well. The different campaign positions



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taken by the main candidates in the 2000 US presidential election, vice president Al Gore and George W Bush, the governor of Texas, began to make political sense when viewed with these data.

Oil-sector companies had been laying off less-experienced, lower-paid workers, but the cuts were moving up the experience ladder. If prices had not recovered as they did, the industry would have lost valuable human capital. Thus the producers' dilemma: lose talent, lose reservoirs, or lose the business. In many cases, it would be all three. That is why cheap oil may not be in the United States' national interest.

The immediate cause of the current oil-price problem is the debt boom, and the Asian recovery, absorbing more than usual of regular commercial oil stocks. Producers such as the North Sea could respond by increasing their uplift - but the lead time to do so on a large scale is five to 10 years. Saudi Arabia could respond on a large scale in a matter of months - "just drill another hole in the ground" - but that is a question of understanding the internal politics of OPEC explained earlier. In practical terms for the foreseeable future, Saudi reserves alone are for all intents and purposes infinite.

It's all politics

The economics of oil since 1900, the effective beginning of the Oil Age, has been remarkably consistent. Discount the price for inflation in the meantime, and the real price of a barrel of oil 1900-2005 has been a very steady graph. Not counting 2005, there have been three dramatic spikes - 1973, 1979 and 2000. Yet after the excitement of these spikes subsided, the price of world crude has promptly returned straight back to the long-term trend line. There is no reason to expect the 2005 spike to do otherwise.

Oil-industry planning is to base exploration and development on a target uplift price of around \$7 a barrel (1996 dollars). That is key. Add on a profit margin, and an exploration-cost margin, and various other contingency sums and you reach about \$14 a barrel. The "natural" price for crude at the moment is \$14 a barrel. If the oil majors wished, they could decide that the future was going to be short of oil and raise their target uplift price to, say, \$10 a barrel from \$7. This price will all of a sudden stimulate all kinds of new exploration and development deals, and hence uplift capacity, so it will become a feasible proposition. But they would have to do so with a careful eye on OPEC, just in case the organization then swung around its own output strategy and flooded the market with cheaper oil. That would leave the oil majors with an uneconomic paradigm. Hence the caution in raising the uplift cost target.

The oil game is a politico-economic-technological one of cat and mouse between OPEC and the oil majors. It is a grown-up game in which Tom Tiddlers with their 40 million barrels of strategic reserve or whatever are peripheral and unimportant, however much they might sweeten US voter opinion ahead of elections. The prospect of \$15 or even \$10 oil is matched by the prospect of \$35 or \$50 oil down the road. This is why the White House calls for \$25 oil.

Since the Russian oil sector has largely been privatized, at least until the crackdown by the administration of President Vladimir Putin, the country's oil companies had no incentive or