May 5, 2008

Global: Energy: Oil

$100 oil reality, part 2: Has the super-spike end game begun?

"Super-spike" end game may be in sight

We believe the current energy crisis may be coming to a head, as a lack of adequate supply growth is becoming apparent and resulting in needed demand rationing in the OECD areas in particular the United States. The possibility of $150-$200 per barrel seems increasingly likely over the next 6-24 months, though predicting the ultimate peak in oil prices as well as the remaining duration of the upcycle remains a major uncertainty.

Raising commodity price forecasts

We are raising our 2008-2011 WTI spot oil price forecasts to $108/$110/$120/$120 per bbl from $96/$105/$110/$110 per bbl, respectively. We see risk to our 2008 and 2009 forecasts as distinctly to the upside. Effectively, we are still building in a path of moderate increases from recent levels but a longer duration in assuming the cycle continues through 2010. An alternative price path for 2008-2011 might well be $125/$200/$150/$75 per bbl.

Bullish most energy sectors plus gold

We remain broadly bullish on most energy sub-sectors in the Americas, with our current favorites the integrated oils, E&Ps, and pipelines (all Attractive). We also see the gold producers as benefiting from an "end of the world" trade. We are Neutral on oil services/drillers, though would be looking to add on a pullback. We have lowered our coverage view on the refiners to Neutral, though are willing to add to our two favorites—Valero and Frontier—at current levels.

Best buy ideas (Americas)

Our Conviction Buy rated favorite stocks include ConocoPhillips (integrated oils), Cabot Oil & Gas (E&P), Halliburton (oil services), and Valero Energy (refiners). Our favorite pipeline is El Paso and our favorite gold producer is Barrick Gold (both Buy rated).

Best sell ideas (Americas)

Our least favorite stocks are the biofuels companies Aventine Renewable Energy, Pacific Ethanol, and VeraSun Energy (all Sell rated).

RELATED RESEARCH

Global: Energy: "190 projects to change the world": April 25, 2008.

Global: Energy: Oil: "$100 oil reality: Super-spike phase 2 ushers in period of chronically high and rising prices": March 6, 2008.

Global: Energy: Oil: "The next leg up for oil markets—Still searching for demand destruction tipping point": September 14, 2007.

Arjun N. Murti
(212) 357-0931 | arjun.murti@gs.com Goldman, Sachs & Co.

Brian Singer, CFA
(212) 902-8259 | brian.singer@gs.com Goldman, Sachs & Co.

Kelvin Koh, CFA
+852-2978-1218 | kelvin.koh@gs.com Goldman Sachs (Asia) L.L.C.

Michele della Vigna, CFA
+44(20)7552-9383 | michele.dellavigna@gs.com Goldman Sachs International

Table of contents

The prices in the body of this report are based on the market close of May 2, 2008.

Exhibit 1: Goldman Sachs Global Investment Research: Global energy equity research team

Americas Energy - Arjun Murti, Business Unit Leader

Integrated Oils/Refining/Biofuels
Arjun Murti
Amil Mody
Vardhana Aaditya

Oil Services/Drillers
Charles Minervino
Daniel Boyd
Dimitry Dayen
Kyle Jenke
Pawan Kakumanu

Electric Utilities/IPPs
Michael Lapides
Ted Durbin
Greg Barry
Lauren Valacer
Jaideep Malik

E&Ps
Brian Singer
Zachary Podolsky
Jesal Dave
Pavan Hoskote

Alternative Energy & Coal
Michael Molnar
Shyam Mehta
Uma M. Yanamandra
Aditi Rai Dastidar

MLPs/Pipelines
David Chiaro
Michael Cerasoli
Dave Mischell
Smriti Dixit

Gold
Oscar Cabrera
Sabrina Grandchamps

Europe Energy - Michele della Vigna, Energy Team Leader

European Integrated Oils
Michele della Vigna

Russian Oils
Anton Sychev

Oil Services
Henry Tarr
Daniel Brook

Refiners
Henry Morris

E&P
Christopher Jost

Asia Energy - Kelvin Koh, Energy Team Leader

Asia ex-Japan, Korea, India
Kelvin Koh
David Ng
Chris Shiu
Eric Jia
Fan Zhang

Korea
Kenneth Whee
Joon-Ho Lee

India
Nilesh Banerjee
Durga Dath

Taiwan
Jim Hung
Rowena Chang

Japan
Hiroyuki Sakaida
Shintaro Horinouchi

Source: Goldman Sachs Research.

$100 oil reality, part 2: Has the super-spike end game begun?

We believe the current energy crisis may be coming to a head, as a lack of adequate supply growth is becoming apparent and resulting in needed demand rationing in the OECD areas in particular the United States. Per our "super-spike" thesis, we have long believed that lackluster global oil supply growth would need to be reconciled in the United States via negative demand growth. As this reality continues to become evident, oil prices are likely to move higher. The possibility of $150-$200 per barrel seems increasingly likely over the next 6-24 months, though predicting the ultimate peak in oil prices as well as the remaining duration of the upcycle remains a major uncertainty. In our view, a gradual rally in prices is likely to be longer lasting than a sharp, sudden spike.

Given our view, we remain broadly bullish on most energy sub-sectors in the Americas (please see related notes in Europe and Asia for sector/stock views in those regions), with our current favorites the integrated oils, E&Ps, and diversified pipelines (all Attractive coverage view). We also see the gold producers (Attractive view) as benefiting from an "end of the world" trade and are buyers of the recent pullback in the sector. We are Neutral on oil services/drillers, though would be looking to add to the sector on a pullback. We have lowered our coverage view on the US refiners to Neutral, though are willing to add to our two favorites—Valero Energy and Frontier Oil—at current levels. Our Conviction Buy-rated favorites across our sub-sectors include ConocoPhillips (integrated oils), Cabot Oil & Gas (E&P), Halliburton (oil services/drillers), and Valero Energy (refining); in pipelines our Buy-rated top pick is El Paso and Barrick Gold (Buy) is our preferred gold producer. We have a Cautious view on biofuels and are Sell rated on all three ethanol companies we cover, including Aventine Renewable Energy, Pacific Ethanol, and VeraSun Energy.

Buy-rated favorite stocks (Americas)

- **Integrated oils (Attractive)**: Chevron, ConocoPhillips (Conviction Buy), and Hess
- **E&Ps (Attractive)**: Apache, Cabot Oil & Gas (Conviction Buy), Encore Acquisition, EOG Resources, Suncor Energy, Ultra Petroleum, and XTO Energy
- **Oil services/drillers (Neutral)**: Halliburton (Conviction Buy), Schlumberger, Diamond Offshore, Pride International, and Transocean
- **Pipelines (Attractive)**: El Paso and ONEOK
- **Refiners (Neutral)**: Frontier Oil and Valero Energy (Conviction Buy)
- **Gold (Attractive)**: Barrick Gold and Gold Fields

Sell-rated least favorite stocks (Americas)

- **Biofuels (Cautious)**: Aventine Renewable Energy, Pacific Ethanol, and VeraSun Energy

Key energy macro conclusions

- Crude oil prices can continue to move meaningfully higher, with $150-$200 per barrel oil a real possibility over the next 6-24 moths.

- OECD oil demand to bear the brunt of demand rationing, with the United States particularly exposed given its large energy needs and heavy weighting toward transportation fuels which have no current commercially viable substitute.
- Weak US gasoline demand likely to continue to weigh on gasoline crack spreads.
- Global power problems and resilient non-OECD demand is growth driving incremental use of diesel/gasoil as well as natural gas, which should result in global natural gas prices rising and middle distillate cracks spreads staying strong.
- Ethanol prices can rally consistent with higher gasoline prices, but ethanol crush spreads are likely to remain weak due to resulting upward pressure on corn prices.
- Gold prices can recover following recent pullback, as gold tends to benefit from the “end of the world” trade.

We believe a combination of a high absolute level and sharp rate of change in oil prices is needed to sustainably ration back demand and recreate a spare capacity cushion only after which might lower energy prices return. The $50 per barrel rise in oil prices from the mid-$60s per barrel last July to over $115 per barrel now—all during a period of weakening US economic activity—is illustrative of our point that US oil demand will likely have to stay weak if global oil markets are to stay in balance. Notably, the rise to $115 per barrel has coincided with an easing in global oil demand. However, global oil inventories remain within historic bands, suggesting demand is effectively being rationed via higher prices due to a lack of adequate supply. The unrelenting rise in long-dated oil prices we think is consistent with the notion that we are seeing constrained supply driving demand rationing, rather than “voluntary” or economically-driven demand easing that would have resulted in a bearish path for oil prices.

In terms of our official base-case price deck, we are raising our 2008-2011 WTI spot oil price forecasts to $108/$110/$120/$120 per barrel from our previous forecast of $96/$105/$110/$110 per barrel, respectively (see Exhibit 2). Effectively, we are building in a path of moderate increases from recent levels but a longer duration in assuming the cycle continues through 2010. In our view, risk to our 2008 and 2009 forecasts are distinctly to the upside. An alternative price path for 2008-2011 might well be $125/$200/$150/$75 per barrel, with the point being that prices might move appreciably higher in the earlier years than our base-case price deck only to subsequently fall back to much lower levels in the out years.

Exhibit 2: Goldman Sachs global energy equity research team’s commodity price forecast changes

	Crude oil prices				Refining margins				Light-heavy, sweet-sour spreads				Natural gas	
	WTI spot oil ($/bbl)		Brent ($/bbl)		US Gulf Coast 3:2:1 ($/bbl)		US West Coast 5:3:2 ($/bbl)		WTI-WTS ($/bbl)		Maya-WTI ($/bbl)		US Henry Hub ($/MMBtu)	
	new	old	new	old	new	old	new	old	new	old	new	old	new	old
2008E:														
1Q	$98	$98	$96	$96	$8	$8	$15	$15	$4.66	$4.66	$16.78	$16.78	$8.00	$8.00
2QE	110	90	109	90	11	15	20	25	6.60	7.20	19.80	13.50	11.00	10.00
3QE	110	95	110	95	13	12	22	20	8.80	7.60	16.50	14.25	11.25	11.00
4QE	115	105	115	100	8	9	17	15	9.20	8.00	17.25	15.00	12.00	1.00
Year	$108	$96	$108	$95	$10	$11	$19	$19	$7.32	$6.87	$17.58	$14.88	$10.56	$9.75
2009E	$110	$105	$110	$105	$12	$15	$22	$25	$8.80	$8.40	$13.75	$13.13	$11.25	$10.50
2010E	$120	$110	$120	$110	$15	$17	$27	$28	$9.60	$8.80	$12.00	$11.00	$9.50	$9.00
2011E	$120	$110	$120	$110	$15	$17	$27	$28	$9.60	$8.80	$12.00	$11.00	$8.00	$8.00
2012N	$75	$60	$75	$60	$10	$9	$16	$15	$6.00	$4.80	$13.50	$10.80	$7.00	$6.50

Source: Bloomberg, Goldman Sachs Research estimates.

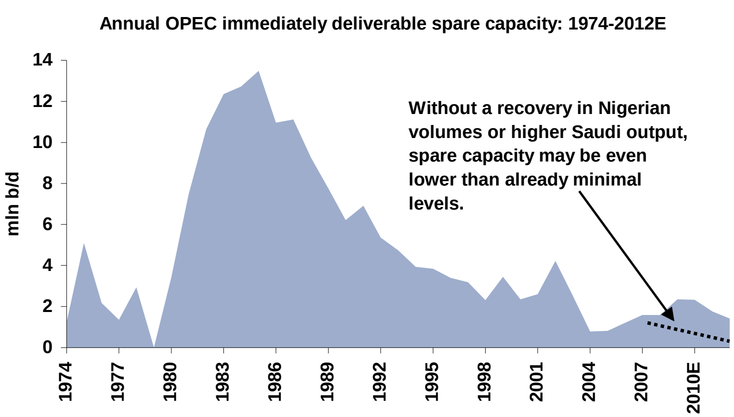
"Super-spike" end game may be in early stages of playing out

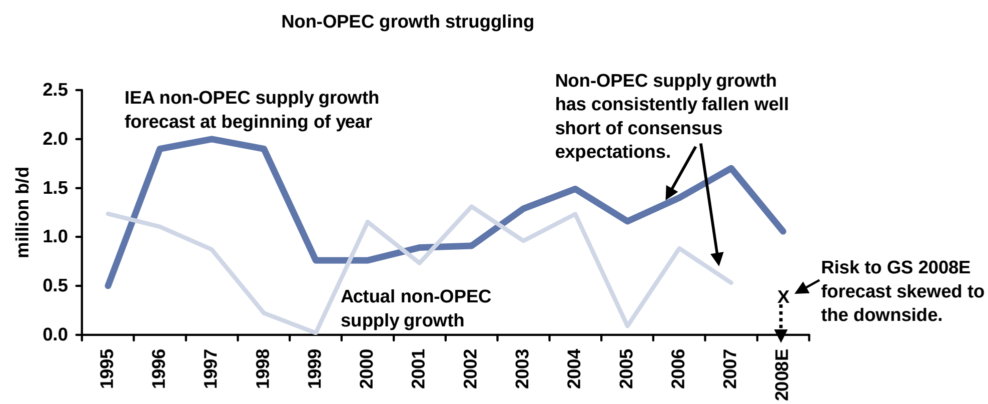
We believe we may be in the early stages of having the end game of our "super-spike" thesis play out, with crude oil prices having risen over $50 per barrel since the US economic crisis began last summer—a remarkable move and one that we think is fundamentally supported by tight global supply/demand balances. The core of our "super-spike" view has been that a lack of adequate supply growth coupled with price-insulated non-OECD demand growth will lead to a dramatic and continuous rise in oil prices ultimately leading to a sharp correction in oil demand. We have believed that a multi-year decline in global oil demand is needed in order to recreate a spare capacity cushion and bring about potentially lower energy commodity prices.

The core underlying drivers of the rise in oil prices remain firmly intact (see Exhibits 3-6):

- Non-OPEC supply is struggling to grow, with notable declines being seen in Mexico and Russia showing signs of rolling over following an extended period of rapid growth. Rising industry cost structures and disappointing production growth and reserve replacement suggest non-OPEC supply trends are unlikely to improve.
- OPEC spare capacity remains at very low levels and OPEC countries are facing downward pressure on net exports due to lackluster supply growth and sharply rising internal demand. Saudi Arabia is starting to acknowledge that while it can likely increase production in the near-term, production is not going to grow infinitely into the future.
- Key oil exporting countries for the most part continue to restrict foreign investment, which will likely keep a lid on how fast supply can grow.
- Non-OECD demand growth remains healthy, in part due to economic growth but more meaningfully of late due to widespread power problems that has led to the burning of diesel and gasoil fuel in portable generators.

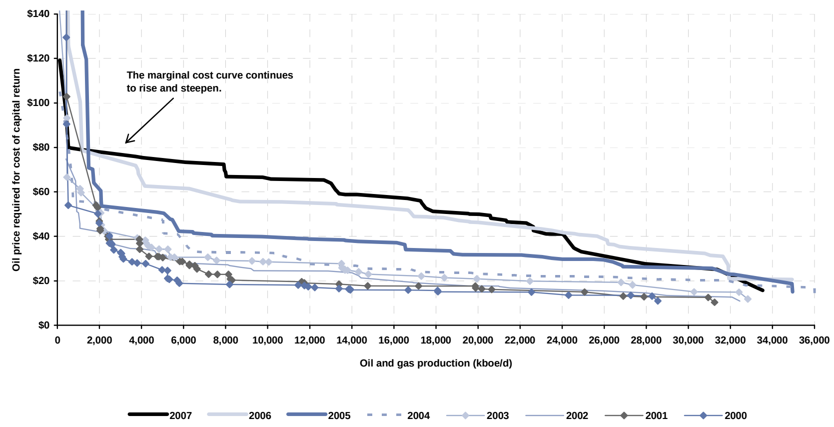
Exhibit 3: Both OPEC and non-OPEC supply struggling to grow, with supply risk skewed to the downside





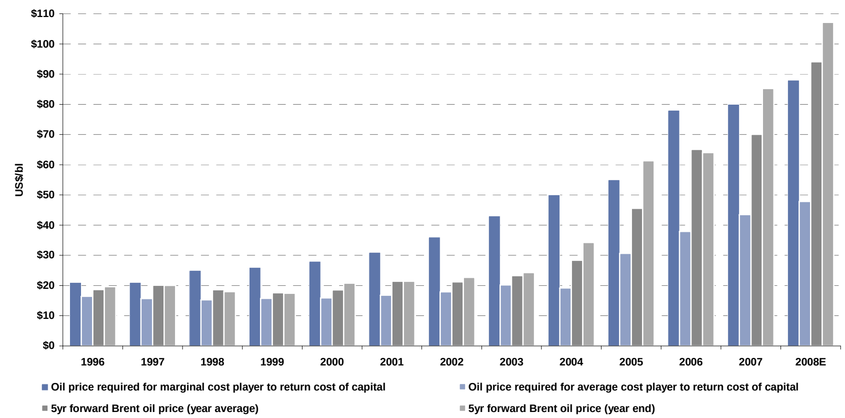
Source: IEA, Goldman Sachs Research estimates.

Exhibit 4: Upstream industry cost curve continues to rise and steepen



Source: Company reports, Goldman Sachs research estimates.

Exhibit 5: Oil price required for cost of capital return continues to rise



Source: Bloomberg, Company reports, Goldman Sachs Research estimates.

Exhibit 6: Will Saudi Arabia be more successful in meeting its production growth objectives than were the Super Majors?

Saudi Arabia production profile (mn b/d):

	2005E	2006E	2007E	2008E	2009E	2010E	2011E	2012E	2013E	2014E	2015E
Crude oil production capacity	**10.00**	10.15	10.00	10.29	11.14	**11.75**	11.89	11.84	11.93	12.26	12.21
% growth (y-o-y)		1.5%	-1.5%	2.9%	8.3%	5.5%	1.1%	-0.4%	0.7%	2.8%	-0.4%
Net underlying decline rate		-1.5%	-1.5%	-1.5%	-1.5%	-1.5%	-1.5%	-1.5%	-1.5%	-1.5%	-1.5%
New projects:											
Haradh		0.30	0.30	0.30	0.30	0.30	0.29	0.27	0.26	0.24	0.23
Khursaniyah (AFK project)				0.38	0.50	0.50	0.50	0.50	0.48	0.45	0.43
Shaybah I				0.06	0.25	0.25	0.25	0.25	0.25	0.25	0.24
Khurais					0.60	1.20	1.20	1.20	1.20	1.20	1.14
Nuayyim					0.10	0.10	0.10	0.10	0.10	0.10	0.10
Shaybah II						0.10	0.20	0.20	0.20	0.20	0.20
Neutral Zone						0.08	0.15	0.15	0.15	0.15	0.15
Manifa I							0.15	0.30	0.30	0.30	0.30
Manifa II									0.15	0.30	0.30
Manifa III									0.15	0.30	0.30
Future projects										0.25	0.50
Total	0.00	0.30	0.30	0.74	1.75	2.53	2.84	2.97	3.23	3.75	3.88
Saudi decline rate sensivitiy:											
Crude oil production capacity	**10.00**	10.00	9.70	9.85	10.56	**11.02**	11.00	10.81	10.74	10.94	10.74
% growth (y-o-y)		0.0%	-3.0%	1.5%	7.3%	4.3%	-0.2%	-1.8%	-0.6%	1.8%	-1.7%
Net underlying decline rate		**-3.0%**	-3.0%	-3.0%	-3.0%	-3.0%	-3.0%	-3.0%	-3.0%	-3.0%	-3.0%
Crude oil production capacity	**10.00**	9.80	9.31	9.28	9.83	**10.11**	9.92	9.56	9.34	9.39	9.06
% growth (y-o-y)		-2.0%	-5.0%	-0.3%	5.9%	2.9%	-1.9%	-3.6%	-2.3%	0.5%	-3.5%
Net underlying decline rate		**-5.0%**	-5.0%	-5.0%	-5.0%	-5.0%	-5.0%	-5.0%	-5.0%	-5.0%	-5.0%
Crude oil production capacity	**10.00**	10.30	10.30	10.74	11.75	**12.53**	12.84	12.97	13.23	13.75	13.88
% growth (y-o-y)		3.0%	0.0%	4.2%	9.4%	6.6%	2.5%	1.1%	2.0%	3.9%	1.0%
Net underlying decline rate		**0.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Saudi's ability to grow production is highly dependent on the assumed net underlying decline rate on base production, a challenge similar to the issue the Super Majors have faced.

Source: Saudi Aramco, Upstream magazine, Goldman Sachs Research estimates.

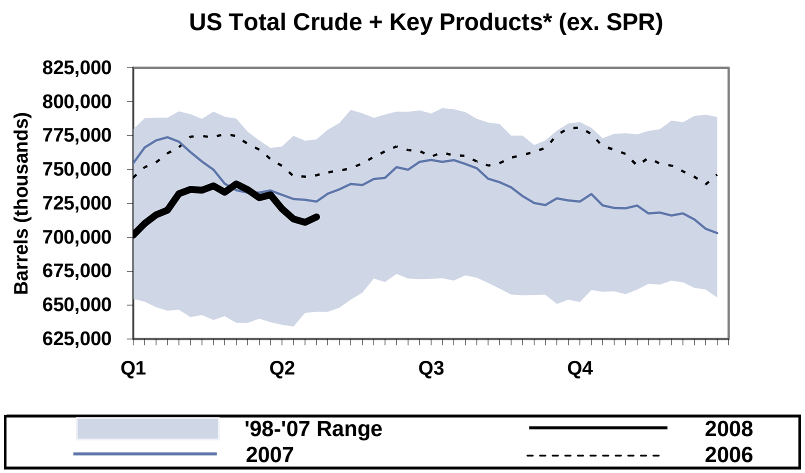
Rapid oil price rise may be signaling a greater urgency of need to ration demand

The continued lack of a meaningful supply response and the fact that oil prices have risen over $50 per barrel despite a US recession and negative US oil demand indicate that the current energy upcycle may be in the midst of a final "super-spike" phase where especially sharp price increases result in accelerated behavioral change, i.e., a needed demand collapse. The duration and ultimate magnitude of this phase remain uncertain and we note that the full process could take several years to play out and include short-term periods of downside volatility. It is our view that a combination of a high price level and rapid rate of change in prices higher are needed to sharply reduce oil demand.

Notably, despite negative US oil demand growth and lower refinery utilization, US crude oil and key product inventories remain within historic bands (see Exhibits 7-9). The fact that negative oil demand growth and lower refinery runs has not led to any meaningful build in inventories signals that world oil supplies remain tight. In fact throughout the OECD, weak demand growth has not led to a meaningful inventory build, indicating either a lack of supply growth, strong non-OECD demand growth, or non-OECD inventory builds, with a combination of the three the likely answer.

To the extent global crude oil supply growth remains lackluster, we believe a recovery in US and OECD oil demand growth is likely not possible unless non-OECD demand weakens. Given the strong secular momentum in the key non-OECD economies as well as the price-insulated nature of its energy demand, we believe OECD demand rationing is likely to continue. In essence, global oil demand cannot grow faster than global oil supply. To the extent the latter is flattish, the former will have to be the same. Afterall, one cannot demand that which does not exist.

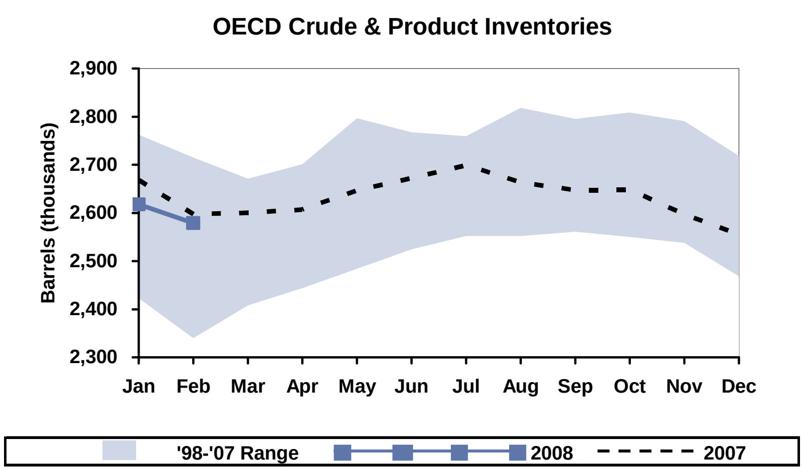
Exhibit 7: US crude and key product inventories remain in check



* key products include motor gasoline, middle distillates, and residual fuel oil

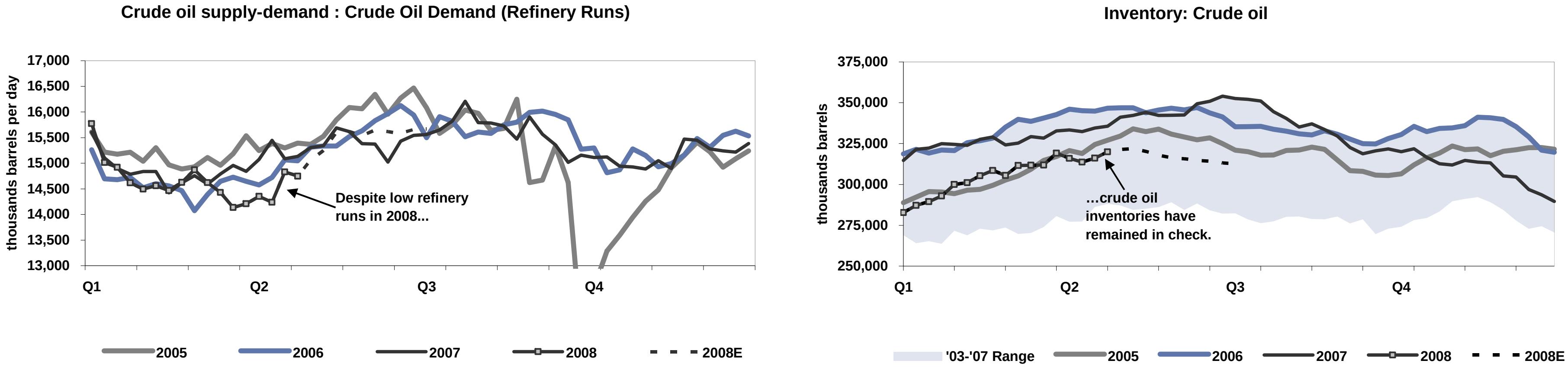
Source: DOE, Goldman Sachs Research.

Exhibit 8: OECD crude and product inventories also look normal



Source: IEA, Goldman Sachs Research.

Exhibit 9: Despite low US refinery runs and negative US oil demand growth, US crude inventory levels are actually lower versus last year



Source: DOE, Goldman Sachs Research estimates.

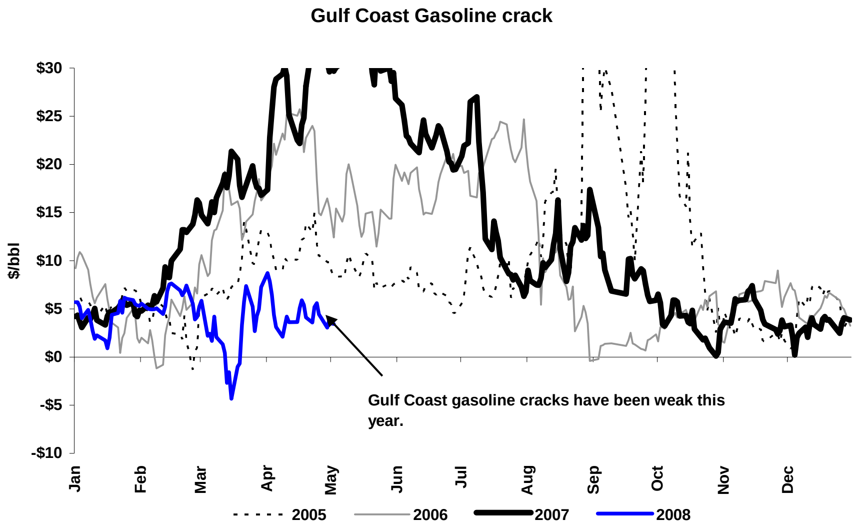
US gasoline no longer leading oil markets—a dramatic change with meaningful implications

The combination of sustained weak US gasoline markets and strong crude oil prices is unprecedented. The health of the US gasoline consumer has historically led oil markets up or down. This has not been the case in 2008, as gasoline, at least in the short-run, has traded more like an annoying by-product of crude than as its core fundamental driver as has historically been the case (see Exhibits 10 and 12). Weakness in US gasoline margins is not the surprise, given a US recession that is weakening gasoline demand and rapid growth in ethanol capacity that is extending gasoline supply. The surprise is that the weakness not only has not mattered to crude oil markets, but if anything, is helping to keep oil supply/demand in balance.

Strength in middle distillate cracks despite weak US gasoline cracks highlight shift to non-OECD

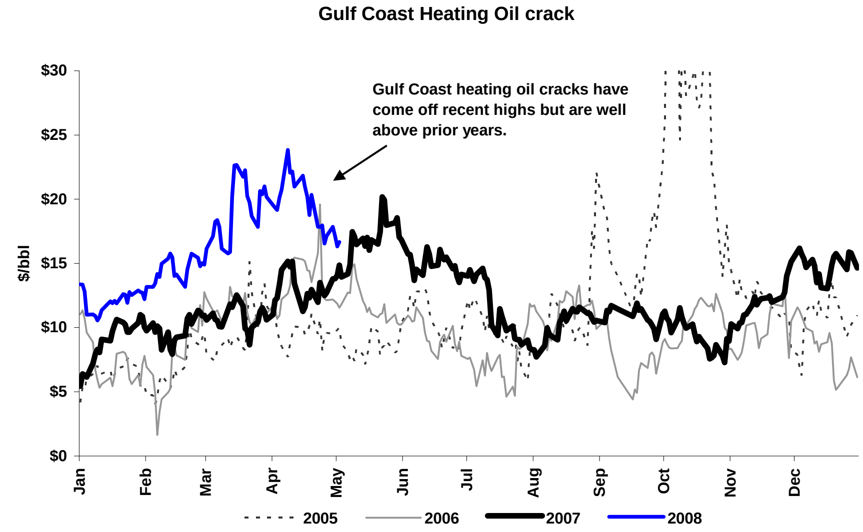
While gasoline cracks have been weak, middle distillate crack spreads have been exceptionally strong and have transitioned to being the core driver of crude oil prices in 2008 (see Exhibits 11 and 13). In our view, middle distillate crack spread strength is consistent with our view that global refining capacity remains tight, at least in terms of the ability to produce sufficient quantities of the middle of the demand barrel (i.e., diesel, gasoil, heating oil, jet fuel, kerosene, etc.). The strength in middle distillate cracks we attribute to resilient non-OECD demand growth as well as numerous global power problems that have led to increased usage of diesel/gasoil-fired power generators to ensure adequate energy supply. The fact that middle distillate crack spreads are strong signals tightness in global refining capacity to manufacture middle distillate products.

Exhibit 10: Gasoline cracks have been weak…



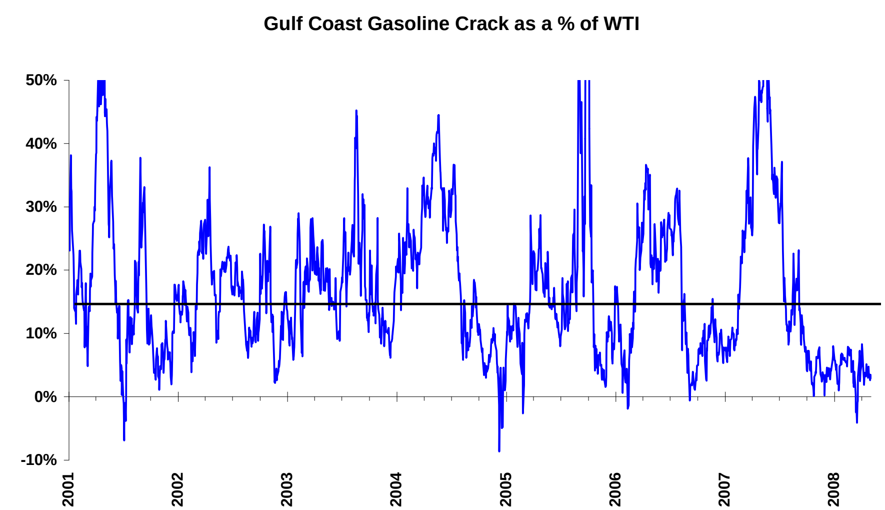
Source: Bloomberg, Goldman Sachs Research.

Exhibit 11: …in sharp contrast to much healthier middle distillate cracks



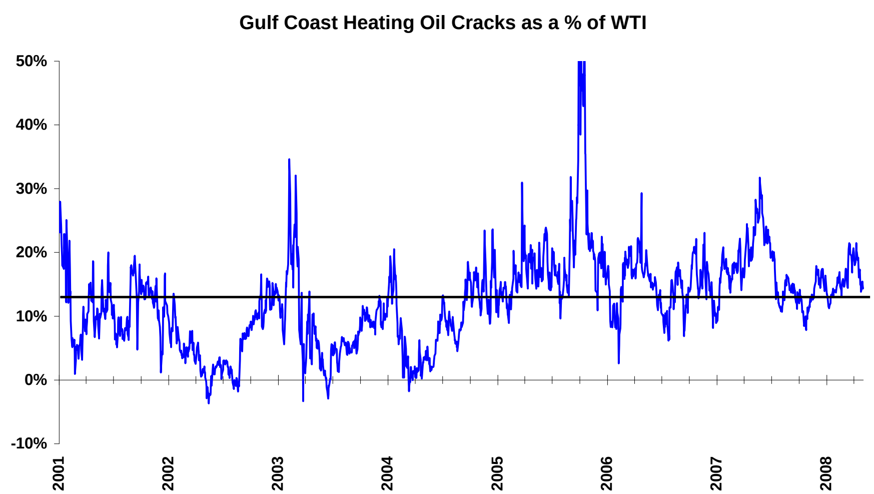
Source: Bloomberg, Goldman Sachs Research.

Exhibit 12: Gasoline cracks are weak versus crude oil



Source: Bloomberg, Goldman Sachs Research.

Exhibit 13: Middle distillate cracks have strengthened versus crude oil



Source: Bloomberg, Goldman Sachs Research.

Is there enough crude oil to satisfy both OECD and non-OECD desired demand growth?

High crude oil prices despite weak US gasoline cracks is sending the signal that global oil markets do not need or perhaps want the US gasoline consumer to recover. Negative US hydroskimming margins is confirming the signal that the US should not increase crude runs. Crude oil markets are in backwardation, signaling short-term supply/demand tightness. Finally, the long end of the oil curve has rallied significantly signaling long-term supply/demand tightness.

Modestly boosting base-case oil price deck for now, risk skewed to the upside

We are modestly bumping up our base-case 2008-2011 WTI spot oil price forecasts to $108/$110/$120/$120 per barrel from our previous forecast of $96/$105/$110/$110 per barrel, respectively (see Exhibits 14-15). In our view, risk to our 2008 and 2009 forecasts are distinctly to the upside, as oil markets may have entered the final major up phase of the current “super-spike” era. An alternative price path for 2008-2011 might well be $125/$200/$150/$75, with the point being that prices might move appreciably higher in the earlier years than our base-case price deck only to subsequently fall back to much lower levels in the out years.

We are also boosting our normalized oil price to $75 per barrel from $60 per barrel before. We continue to use 2012 as our first “normalized” year. Our normalized view continues to be based on a combination of oil prices and costs that yields a “cost of capital” return for industry overall. The specific oil price has always been of secondary importance to us. We continue to assume that in a less bullish price environment, costs will fall.

Mixed changes to refining margin forecasts: Lowering gasoline cracks, raising distillate cracks

We are slightly lowering our 2008-2011 refining margin forecasts, though the changes to the blended margins reflect disparate movements in the underlying product cracks. We are lowering our forecast for gasoline crack spreads, but raising our forecast for middle distillate cracks consistent with the above discussion. Most US refiners are disproportionately leveraged to US gasoline margins, such that the changes are generally negative to their earnings/cash flow generation. We have not made any meaningful changes to our view of light-heavy and sweet-sour crude oil spreads; we continue to believe that Canadian light-heavy crude oil spreads will be wider than Maya-WTI spreads, though the latter has been wider this year than we had previously been expecting.

Modestly raising US natural gas forecasts

We are bumping up our 2008-2010 US natural gas price forecasts to reflect higher residual fuel oil and international LNG prices and what has generally been constructive US inventory data, the most recent week notwithstanding. We continue to believe that US natural gas prices have material upside this summer, with the possibility of $12+ per MMBtu pricing. Unlike our crude oil view, we do not see the structural supply/demand imbalance, as the world is able to meaningfully grow natural gas output.

Exhibit 14: Goldman Sachs global energy equity research team's commodity price forecast changes

	Crude oil prices				Refining margins				Light-heavy, sweet-sour spreads				Natural gas	
	WTI spot oil ($/bbl)		Brent ($/bbl)		US Gulf Coast 3:2:1 ($/bbl)		US West Coast 5:3:2 ($/bbl)		WTI-WTS ($/bbl)		Maya-WTI ($/bbl)		US Henry Hub ($/MMBtu)	
	new	old	new	old	new	old	new	old	new	old	new	old	new	old
2008E:														
1Q	$98	$98	$96	$96	$8	$8	$15	$15	$4.66	$4.66	$16.78	$16.78	$8.00	$8.00
2QE	110	90	109	90	11	15	20	25	6.60	7.20	19.80	13.50	11.00	10.00
3QE	110	95	110	95	13	12	22	20	8.80	7.60	16.50	14.25	11.25	11.00
4QE	115	105	115	100	8	9	17	15	9.20	8.00	17.25	15.00	12.00	1.00
Year	$108	$96	$108	$95	$10	$11	$19	$19	$7.32	$6.87	$17.58	$14.88	$10.56	$9.75
2009E	$110	$105	$110	$105	$12	$15	$22	$25	$8.80	$8.40	$13.75	$13.13	$11.25	$10.50
2010E	$120	$110	$120	$110	$15	$17	$27	$28	$9.60	$8.80	$12.00	$11.00	$9.50	$9.00
2011E	$120	$110	$120	$110	$15	$17	$27	$28	$9.60	$8.80	$12.00	$11.00	$8.00	$8.00
2012N	$75	$60	$75	$60	$10	$9	$16	$15	$6.00	$4.80	$13.50	$10.80	$7.00	$6.50

Source: Bloomberg, Goldman Sachs Research estimates.

Exhibit 15: Key assumptions underlying WTI spot oil forecast
$/bbl, unless otherwise indicated

	WTI spot forecast	Month 1-12 backwardation/ (contango), %	Long-dated forecast
2008E	$108	2.0%	$100
2009E	$110	-5.0%	$110
2010E	$120	-3.9%	$121

Source: Goldman Sachs Research estimates.

Comments on commodity speculators and proposed solutions to the energy crisis

Commodity speculators play a critical role in balancing oil supply/demand

We believe there is a fundamental misperception among many in the oil industry, Wall Street, the media, politicians, and the general public that so-called "speculators" are driving up the oil price to supposedly unjustified levels. Unfortunately, we do not think the energy crisis will be solved by finding and punishing the big, bad speculator. In fact to the contrary, we believe commodity investors are helping to solve the energy crisis by speeding up the process of incentivizing higher capital spending on a wide range of energy projects while at the same time encouraging lower levels of demand by energy users.

Without question increased fund flow into commodities has boosted prices. The issue is whether the resulting oil price is “real” or represents speculative excess; we strongly believe the former. We note that if it is an excessive oil price, where is the excess supply? Inventory levels look normal and just about all of industry—both non-OPEC and OPEC—are badly missing production forecasts. The minimal supply growth despite what is now nine years of favorable energy market conditions is remarkable and in our view the most substantive indication that current oil prices are fundamentally justified.

The fact that tight oil supply/demand fundamentals are attracting large amounts of capital is a good thing. Higher oil prices signal to oil companies the need for greater investment. Higher oil prices also signal to consumers the need to demand less. This is basically the point of capitalism, which over the past hundred years has proven to be the superior economic and geopolitical philosophy.

The so-called commodity speculator should be applauded for speeding up the message to both oil companies and consumers that energy markets are tight. Commodity speculators also encourage venture capital and private equity firms to invest in alternative energy and other new forms of supply. During the 1990s, very little investment went into clean energy. Today, alternative energy investment is rising rapidly thanks in large part to the role of commodity investors in bidding up energy prices.

In our view, supporters of a cleaner environment should be supportive of commodity investors, as the combination of lower demand and new alternative energy investments take hold. In our view, commodity investors are helping to accelerate the speed by which the world will naturally want to burn less crude oil.

Energy policies that are not likely to work

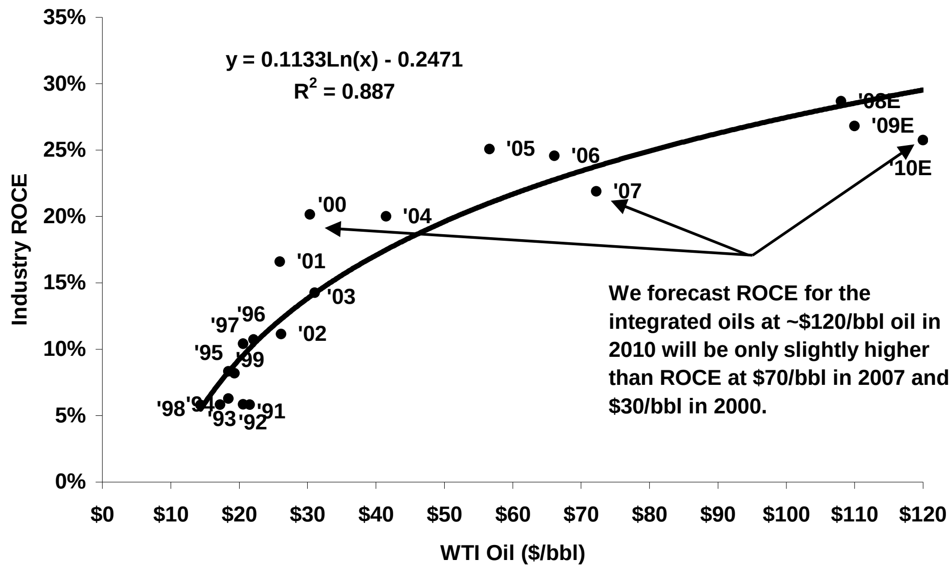
We realize politicians are in the business of being elected to office and often need to deliver messages that resonate with the public, no matter how unproductive the prescription may be. This is evident in various proposals made by all three of the leading candidates for US president, including Senator John McCain, Senator Hillary Clinton, and Senator Barack Obama.

Lower gasoline taxes. Policies that attempt to lower the retail gasoline price we think will make matters worse, as the signal that Americans need to use less energy would be muted.

Windfall profits tax on major oil companies. We appreciate the fact that Big Oil is an easy target and not particularly popular with the general public. However, several truths stand out to us: (1) current industry returns on capital of just over 20% are above historic averages, but hardly excessive (see Exhibit 16); (2) higher taxes do not stimulate additional investment to grow supply; (3) major oil companies account for a small portion of the world’s energy supply and an even smaller portion of future supply growth; and (4) most major oil companies own very few of the gasoline stations in this country (including those that carry their brand) and rarely “set” the price of retail gasoline. The notion that such a tax could be passed along to consumers via some form of tax rebate again sends the wrong signal that current levels of energy use can continue.

Pressuring ExxonMobil and other big oil companies to invest in alternative energy. Beyond “feel good” sentiment, we fail to see the logic of pressuring major oil companies to invest greater amounts of capital in alternative energy. Given that crude oil is primarily a transportation fuel, the most logical area of alternative energy for major oil companies would be biofuels. Fortunately, most of the major oils have had the good sense to steer clear of corn-based ethanol, the rapid growth of which is playing a role in higher agricultural commodity prices and food riots around the world. So-called next generation biofuels we are skeptical will prove to be commercially viable anytime soon, making the level of investment by major oils a moot point. Hybrid engine battery technologies also are not a core competency for major oils. The areas of alternative energy that do appear to make sense, such as solar, wind, and nuclear energy, are all used for power generation, which is not a core business for the major oils. As such, we do not see the logic behind the campaign to pressure Exxon and other major oil companies to invest more in alternative energy.

Exhibit 16: Oil profits are not excessive: Integrated oils ROCE at $120/bbl oil in 2010E comparable to $30/bbl in 2000
Integrated oils include our North America-based super-cap and large-cap peer group



Source: Company reports, Goldman Sachs Research estimates.

There is no pain-free way to solve the energy crisis, but the end result we think will be good

Major increases in energy commodity prices have historically accelerated energy efficiency gains, with the post-spike oil demand growth rate lower than what occurred during the period leading up to higher prices. We expect that to be the case this time around as well. The best thing that could happen for transportation fuels is that the world starts to drive considerably more fuel efficient cars while also investing in improved public transportation. The incentive to increase energy efficiency is likely to accelerate environmental improvements in comparison to a world where energy prices are lower. Finally, a world that decreases its dependency on crude oil should lead to less dependency on certain governments that effectively, if not actually, support terrorism.

Favorite sectors (Americas): Integrated oils, E&Ps, pipelines, and gold

Integrated oil companies: Long-term winners

We think the major integrated oil companies have a particularly compelling risk/reward, as the group is well-exposed to higher crude oil and global natural gas prices, which will more than offset any exposure to weak US gasoline markets. Importantly, the western majors are also generally best positioned to withstand what some day will be the big leg down, given business models that have been far more focused on ensuring excess return on capital employed will be generated irrespective of the price environment. Getting the precise timing of the big move up followed by the big move down will likely prove difficult, which we think argues for owning the major oils today.

Buy-rated integrated oils: Chevron, ConocoPhillips (Conviction Buy), and Hess

E&Ps, oil services/drillers: Leveraged beneficiaries of the up portion of the cycle

During the move up to $150-$200 per barrel, we would expect the traditional leveraged beneficiaries—E&Ps and oil service/drillers—to perform well. Investors will need to be cognizant, however, that in the final big move up, the time will come when these groups should be aggressively sold. The risk of course is that prices rise dramatically and multiples compress, as investors become fearful that the peak is imminent. To some extent, fearing an imminent peak has characterized the consensus Street view for much of the upcycle. As such, we think E&Ps and oil service/drillers will rally with higher commodity prices, or at a minimum, hold up better than the broader stock market. Note, in the very near-term, we prefer to buy oil services/drillers on weakness and have a Neutral coverage view at this time.

Buy-rated E&Ps: Apache, Cabot Oil & Gas (Conviction Buy), Encore Acquisition, EOG Resources, Suncor Energy, Ultra Petroleum, and XTO Energy

Buy-rated oil services/drillers: Halliburton (Conviction Buy), Schlumberger, Diamond Offshore, Pride International, and Transocean

Refiners: Sector view lowered to Neutral, though we still like heavy oil coking refiners

The outlook for the US refining industry we no longer think is as clear cut as an outright bullish or bearish call; hence our move to a Neutral coverage view. This is a call we got very wrong, as the refiners we cover are –25% since our December 13, 2007 sector upgrade versus –5% for the S&P 500.

Our "super-spike" thesis has long considered the United States as the region where demand would need to fall most meaningfully in order for global oil supply/demand to stay in balance and that significantly higher US gasoline prices would be needed for that to occur. What we mis-analyzed was the ability for higher US gasoline prices to be entirely a function of higher crude oil prices as opposed to a combination of crude oil prices and gasoline crack spreads as was our view; historically crude oil prices and gasoline crack spreads have been strongly positively correlated (after adjusting for normal seasonality). We think the historic correlations have broken down due to: (1) higher ethanol output which has added to US gasoline supply; (2) the global power crisis and resilient non-OECD demand, which has resulted in strong middle distillate cracks and higher crude oil prices despite weak US gasoline fundamentals; and (3) disappointing crude oil supply growth. The overall result has been squeezed US gasoline margins. We still expect a rebound in gasoline crack spreads to occur from current depressed levels, especially if the ethanol RFS is lowered; however we have lowered our expectations for US gasoline crack spreads relative to prior forecasts.

With that said, refiners that can process heavy oil production and produce rising quantities of middle distillates we think can generate meaningful excess returns for shareholders. In the US, we would put Valero Energy (Conviction Buy) and Frontier Oil (Buy) in this category. The outlook is more bearish for refiners that process predominantly light-sweet crude oil and higher quantities of gasoline. We would place Sunoco and Tesoro in this group and have downgraded our view of Sunoco shares to Neutral from Buy. Tesoro remains Neutral rated. From a timing perspective, we would be willing to add to positions in Valero and Frontier now given that: (1) the US is about to enter the summer driving season; (2) expectations are already very bearish and valuations depressed; (3) there is a growing potential for the US government to lower the ethanol RFS; and (4) near-term gasoline fundamentals are showing some signs of improvement.

Buy-rated refiners: Frontier Oil and Valero Energy (Conviction Buy)

Pipelines/MLPs: Long-term beneficiaries of the need to grow North America energy infrastructure

We remain bullish on the diversified pipeline and related pipeline MLP sectors, as these groups are key beneficiaries of the need to grow and reconfigure North America energy infrastructure. Whether it is new oil pipelines from Canada's oil sands to the US Gulf Coast, new natural gas pipelines to meet growing unconventional gas production, or the new Alaska gas pipeline being proposed by BP and ConocoPhillips, diversified pipeline stocks and pipeline MLPs we cover should be major beneficiaries.

Buy-rated pipelines: El Paso and ONEOK

Biofuels: Corn ethanol not the answer and cellulosic ethanol seems likely to miss this cycle

We remain Cautious on the biofuels industry, most notably corn-based ethanol. While corn ethanol has succeeded in keeping gasoline crack spreads narrower than would otherwise likely be the case, it has done very little to change fundamentally tight global oil supply/demand balances and has played a role in sharply higher agricultural commodity prices. We believe higher expected ethanol prices will result in upward pressure on corn prices, as the market tries to balance sufficient ethanol capacity growth to meet the US Renewable Fuels Standard (RFS) with tight corn and other key agricultural product supplies. Next generation biofuels, such as cellulosic ethanol, we think are still years away from commercial viability and are likely to be late too impact the current upcycle.

Sell-rated biofuels: Aventine Renewable Energy, Pacific Ethanol, and VeraSun Energy

Gold: An "end of the world" trade that has lagged of late

Gold prices and gold equities have corrected over the past month, as investors have begun to wonder whether the US dollar still had meaningful downside after already underperforming other key currencies so significantly. We make no call on the outlook for the US dollar in this report. In our view, to the extent energy and agricultural commodity prices still have meaningful upside risk, we think gold prices and equities can rally off of recent lows. We recognize that gold does not have the strong underlying supply/demand fundamentals that various energy, base metals, and agricultural commodities have. We do find gold intriguing, though, following the recent pullback given that it historically has been a good “end of the world” trade.

Buy-rated gold producers:: Barrick Gold and Gold Fields

Reg AC

I, Arjun N. Murti, hereby certify that all of the views expressed in this report accurately reflect my personal views about the subject company or companies and its or their securities. I also certify that no part of my compensation was, is or will be, directly or indirectly, related to the specific recommendations or views expressed in this report.

Investment profile

The Goldman Sachs Investment Profile provides investment context for a security by comparing key attributes of that security to its peer group and market. The four key attributes depicted are: growth, returns, multiple and volatility. Growth, returns and multiple are indexed based on composites of several methodologies to determine the stocks percentile ranking within the region's coverage universe.

The precise calculation of each metric may vary depending on the fiscal year, industry and region but the standard approach is as follows:

Growth is a composite of next year's estimate over current year's estimate, e.g. EPS, EBITDA, Revenue. **Return** is a year one prospective aggregate of various return on capital measures, e.g. CROCI, ROACE, and ROE. **Multiple** is a composite of one-year forward valuation ratios, e.g. P/E, dividend yield, EV/FCF, EV/EBITDA, EV/DACF, Price/Book. **Volatility** is measured as trailing twelve-month volatility adjusted for dividends.

Quantum

Quantum is Goldman Sachs' proprietary database providing access to detailed financial statement histories, forecasts and ratios. It can be used for in-depth analysis of a single company, or to make comparisons between companies in different sectors and markets.

Disclosures

Coverage group(s) of stocks by primary analyst(s)

Arjun N. Murti: America-Biofuel, America-Integrated Oils, America-Refining & Marketing.

America-Biofuel: Aventine Renewable Energy Holdings, Inc., Pacific Ethanol, Inc., VeraSun Energy Corp..

America-Integrated Oils: Chevron Corp., ConocoPhillips, Exxon Mobil Corp., Hess Corp., Marathon Oil Corp., Murphy Oil Corp., Occidental Petroleum Corp., Petro-Canada, Petro-Canada.

America-Refining & Marketing: CVR Energy, Inc., Frontier Oil Corp., Holly Corp., Sunoco, Inc., Tesoro Corp., Valero Energy Corp..

Company-specific regulatory disclosures

The following disclosures relate to relationships between The Goldman Sachs Group, Inc. (with its affiliates, "Goldman Sachs") and companies covered by the Global Investment Research Division of Goldman Sachs and referred to in this research.

There are no company-specific disclosures.

Distribution of ratings/investment banking relationships

Goldman Sachs Investment Research global coverage universe

Rating Distribution			Investment Banking Relationships		
Buy	Hold	Sell	Buy	Hold	Sell

Global	28%	57%	15%	51%	44%	41%

As of Apr 1, 2008, Goldman Sachs Global Investment Research had investment ratings on 2,975 equity securities. Goldman Sachs assigns stocks as Buys and Sells on various regional Investment Lists; stocks not so assigned are deemed Neutral. Such assignments equate to Buy, Hold and Sell for the purposes of the above disclosure required by NASD/NYSE rules. See 'Ratings, Coverage groups and views and related definitions' below.

Regulatory disclosures

Disclosures required by United States laws and regulations

See company-specific regulatory disclosures above for any of the following disclosures required as to companies referred to in this report: manager or co-manager in a pending transaction; 1% or other ownership; compensation for certain services; types of client relationships; managed/co-managed public offerings in prior periods; directorships; market making and/or specialist role.

The following are additional required disclosures: **Ownership and material conflicts of interest:** Goldman Sachs policy prohibits its analysts, professionals reporting to analysts and members of their households from owning securities of any company in the analyst's area of coverage. **Analyst compensation:** Analysts are paid in part based on the profitability of Goldman Sachs, which includes investment banking revenues. **Analyst as officer or director:** Goldman Sachs policy prohibits its analysts, persons reporting to analysts or members of their households from serving as an officer, director, advisory board member or employee of any company in the analyst's area of coverage. **Distribution of ratings:** See the distribution of ratings disclosure above. **Price chart:** See the price chart, with changes of ratings and price targets in prior periods, above, or, if electronic format or if with respect to multiple companies which are the subject of this report, on the Goldman Sachs website at http://www.gs.com/research/hedge.html. Goldman, Sachs & Co. is a member of SIPC.

Additional disclosures required under the laws and regulations of jurisdictions other than the United States

The following disclosures are those required by the jurisdiction indicated, except to the extent already made above pursuant to United States laws and regulations. **Australia:** This research, and any access to it, is intended only for "wholesale clients" within the meaning of the Australian Corporations Act. **Canada:** Goldman Sachs Canada Inc. has approved of, and agreed to take responsibility for, this research in Canada if and to the extent it relates to equity securities of Canadian issuers. Analysts may conduct site visits but are prohibited from accepting payment or reimbursement by the company of travel expenses for such visits. **Hong Kong:** Further information on the securities of covered companies referred to in this research may be obtained on request from Goldman Sachs (Asia) L.L.C. **India:** Further information on the subject company or companies referred to in this research may be obtained from Goldman Sachs (India) Securities Private Limited; **Japan:** See below. **Korea:** Further information on the subject company or companies referred to in this research may be obtained from Goldman Sachs (Asia) L.L.C., Seoul Branch. **Russia:** Research reports distributed in the Russian Federation are not advertising as defined in Russian law, but are information and analysis not having product promotion as their main purpose and do not provide appraisal within the meaning of the Russian Law on Appraisal. **Singapore:** Further information on the covered companies referred to in this research may be obtained from Goldman Sachs (Singapore) Pte. (Company Number: 198602165W). **United Kingdom:** Persons who would be categorized as retail clients in the United Kingdom, as such term is defined in the rules of the Financial Services Authority, should read this research in conjunction with prior Goldman Sachs research on the covered companies referred to herein and should refer to the risk warnings that have been sent to them by Goldman Sachs International. A copy of these risks warnings, and a glossary of certain financial terms used in this report, are available from Goldman Sachs International on request.

European Union: Disclosure information in relation to Article 4 (1) (d) and Article 6 (2) of the European Commission Directive 2003/126/EC is available at http://www.gs.com/client_services/global_investment_research/europeanpolicy.html

Japan: Goldman Sachs Japan Co., Ltd. Is a Financial Instrument Dealer under the Financial Instrument and Exchange Law, registered with the Kanto Financial Bureau (Registration No. 69), and is a member of Japan Securities Dealers Association (JSDA) and Financial Futures Association of Japan (FFJAJ). Sales and purchase of equities are subject to commission pre-determined with clients plus consumption tax. See company-specific disclosures as to any applicable disclosures required by Japanese stock exchanges, the Japanese Securities Dealers Association or the Japanese Securities Finance Company.

Ratings, coverage groups and views and related definitions

Buy (B), Neutral (N), Sell (S) -Analysts recommend stocks as Buys or Sells for inclusion on various regional Investment Lists. Being assigned a Buy or Sell on an Investment List is determined by a stock's return potential relative to its coverage group as described below. Any stock not assigned as a Buy or a Sell on an Investment List is deemed Neutral. Each regional Investment Review Committee manages various regional Investment Lists to a global guideline of 25%-35% of stocks as Buy and 10%-15% of stocks as Sell; however, the distribution of Buys and Sells in any particular coverage group may vary as determined by the regional Investment Review Committee. Regional Conviction Buy and Sell lists represent investment recommendations focused on either the size of the potential return or the likelihood of the realization of the return.

Return potential represents the price differential between the current share price and the price target expected during the time horizon associated with the price target. Price targets are required for all covered stocks. The return potential, price target and associated time horizon are stated in each report adding or reiterating an Investment List membership.

Coverage groups and views: A list of all stocks in each coverage group is available by primary analyst, stock and coverage group at http://www.gs.com/research/hedge.html. The analyst assigns one of the following coverage views which represents the analyst's investment outlook on the coverage group relative to the group's historical fundamentals and/or valuation. **Attractive (A).** The investment outlook over the following 12 months is favorable relative to the coverage group's historical fundamentals and/or valuation. **Neutral (N).** The investment outlook over the following 12 months is neutral relative to the coverage group's historical fundamentals and/or valuation. **Cautious (C).** The investment outlook over the following 12 months is unfavorable relative to the coverage group's historical fundamentals and/or valuation.

Not Rated (NR). The investment rating and target price, if any, have been removed pursuant to Goldman Sachs policy when Goldman Sachs is acting in an advisory capacity in a merger or strategic transaction involving this company and in certain other circumstances. **Rating Suspended (RS).** Goldman Sachs Research has suspended the investment rating and price target, if any, for this stock, because there is not a sufficient fundamental basis for determining an investment rating or target. The previous investment rating and price target, if any, are no longer in effect for this stock and should not be relied upon. **Coverage Suspended (CS).** Goldman Sachs has suspended coverage of this company. **Not Covered (NC).** Goldman Sachs does not cover this company. **Not Available or Not Applicable (NA).** The information is not available for display or is not applicable. **Not Meaningful (NM).** The information is not meaningful and is therefore excluded.

Ratings, coverage views and related definitions prior to June 26, 2006

Our rating system requires that analysts rank order the stocks in their coverage groups and assign one of three investment ratings (see definitions below) within a ratings distribution guideline of no more than 25% of the stocks should be rated Outperform and no fewer than 10% rated Underperform. The analyst assigns one of three coverage views (see definitions below), which represents the analyst's investment outlook on the coverage group relative to the group's historical fundamentals and valuation. Each coverage group, listing all stocks covered in that group, is available by primary analyst, stock and coverage group at http://www.gs.com/research/hedge.html.

Definitions

Outperform (OP). We expect this stock to outperform the median total return for the analyst's coverage universe over the next 12 months. **In-Line (IL).** We expect this stock to perform in line with the median total return for the analyst's coverage universe over the next 12 months. **Underperform (U).** We expect this stock to underperform the median total return for the analyst's coverage universe over the next 12 months.

Coverage views: Attractive (A). The investment outlook over the following 12 months is favorable relative to the coverage group's historical fundamentals and/or valuation. **Neutral (N).** The investment outlook over the following 12 months is neutral relative to the coverage group's historical fundamentals and/or valuation. **Cautious (C).** The investment outlook over the following 12 months is unfavorable relative to the coverage group's historical fundamentals and/or valuation.

Current Investment List (CIL). We expect stocks on this list to provide an absolute total return of approximately 15%-20% over the next 12 months. We only assign this designation to stocks rated Outperform. We require a 12-month price target for stocks with this designation. Each stock on the CIL will **automatically** come off the list after 90 days unless renewed by the covering analyst and the relevant Regional Investment Review Committee.

Global product; distributing entities

The Global Investment Research Division of Goldman Sachs produces and distributes research products for clients of Goldman Sachs, and pursuant to certain contractual arrangements, on a global basis. Analysts based in Goldman Sachs offices around the world produce equity research on industries and companies, and research on macroeconomics, currencies, commodities and portfolio strategy.

This research is disseminated in Australia by Goldman Sachs JBWere Pty Ltd (ABN 21 006 797 897) on behalf of Goldman Sachs; in Canada by Goldman Sachs Canada Inc. regarding Canadian equities and by Goldman Sachs & Co. (all other research); in Germany by Goldman Sachs & Co. oHG; in Hong Kong by Goldman Sachs (Asia) L.L.C.; in India by Goldman Sachs (India) Securities Private Ltd.; in Japan by Goldman Sachs Japan Co., Ltd.; in the Republic of Korea by Goldman Sachs (Asia) L.L.C., Seoul Branch; in New Zealand by Goldman Sachs JBWere (NZ) Limited on behalf of Goldman Sachs; in Singapore by Goldman Sachs (Singapore) Pte. (Company Number: 198602165W); and in the United States of America by Goldman, Sachs & Co. Goldman Sachs International has approved this research in connection with its distribution in the United Kingdom and European Union.

European Union: Goldman Sachs International, authorised and regulated by the Financial Services Authority, has approved this research in connection with its distribution in the European Union and United Kingdom; Goldman, Sachs & Co. oHG, regulated by the Bundesanstalt für Finanzdienstleistungsaufsicht, may also be distributing research in Germany.

General disclosures in addition to specific disclosures required by certain jurisdictions

This research is for our clients only. Other than disclosures relating to Goldman Sachs, this research is based on current public information that we consider reliable, but we do not represent it is accurate or complete, and it should not be relied on as such. We seek to update our research as appropriate, but various regulations may prevent us from doing so. Other than certain industry reports published on a periodic basis, the large majority of reports are published at irregular intervals as appropriate in the analyst's judgment.

Goldman Sachs conducts a global full-service, integrated investment banking, investment management, and brokerage business. We have investment banking and other business relationships with a substantial percentage of the companies covered by our Global Investment Research Division.

Our salespeople, traders, and other professionals may provide oral or written market commentary or trading strategies to our clients and our proprietary trading desks that reflect opinions that are contrary to the opinions expressed in this research. Our asset management area, our proprietary trading desks and investing businesses may make investment decisions that are inconsistent with the recommendations or views expressed in this research.

We and our affiliates, officers, directors, and employees, excluding equity analysts, will from time to time have long or short positions in, act as principal in, and buy or sell, the securities or derivatives (including options and warrants) thereof of covered companies referred to in this research.

This research is not an offer to sell or the solicitation of an offer to buy any security in any jurisdiction where such an offer or solicitation would be illegal. It does not constitute a personal recommendation or take into account the particular investment objectives, financial situations, or needs of individual clients. Clients should consider whether any advice or recommendation in this research is suitable for their particular circumstances and, if appropriate, seek professional advice, including tax advice. The price and value of the investments referred to in this research and the