



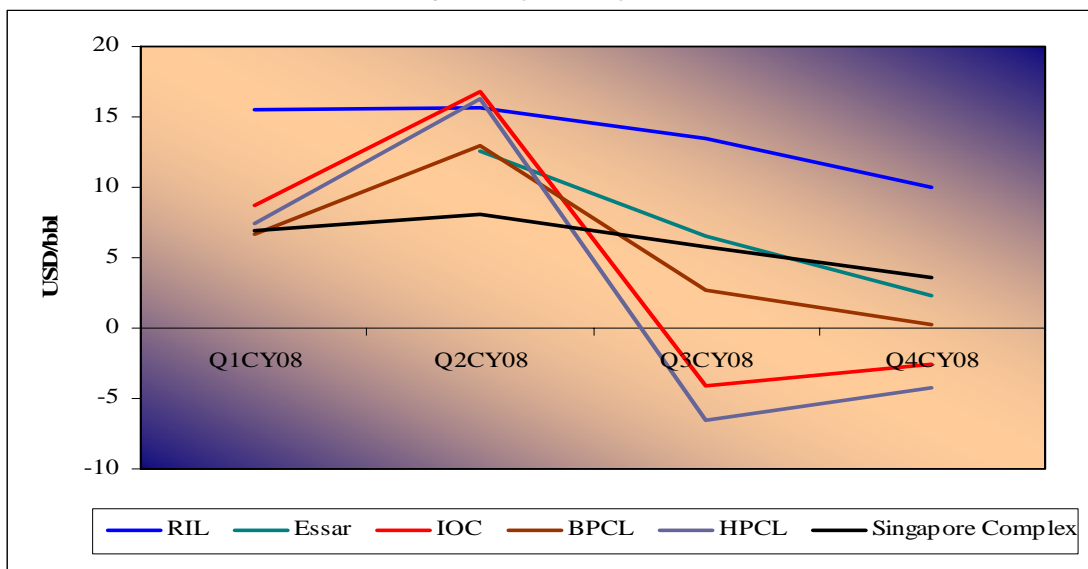


# The Short Story...

The global refining sector was adversely impacted by the decline in petroleum prices in H2 CY08. Not only did cracks go down, but inventory losses also led to the gross refining margins (GRMs) declining 25-145% sequentially in H2 CY08. Gasoline cracks turned negative and despite positive gasoil cracks, players with high crude oil inventories recorded negative margins in H2 CY08, as crude shed over 60% of its value gained since its July 2008 peak.

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**Gross refining margins (CY08)**



Source: Companies, Reuters, FG Research

However, there were some signs of an improvement in Q1 CY09. Gasoline cracks, which had turned negative in the December-early January period, became positive and stood in the range of \$10 per barrel (bbl) for the quarter. Gasoil cracks also averaged around \$8 per barrel for Q1 CY09. An improvement in residual fuel oil cracks (under negative \$10 per barrel) is another plus for refiners. The increase in oil prices over the last three months will in fact help refiners post some inventory gains. But will it sustain? Read on...

**Note:** For crude oil price here we have considered a basket of oil comprising of Brent & Dubai (Fateh) in the ratio 40:60.

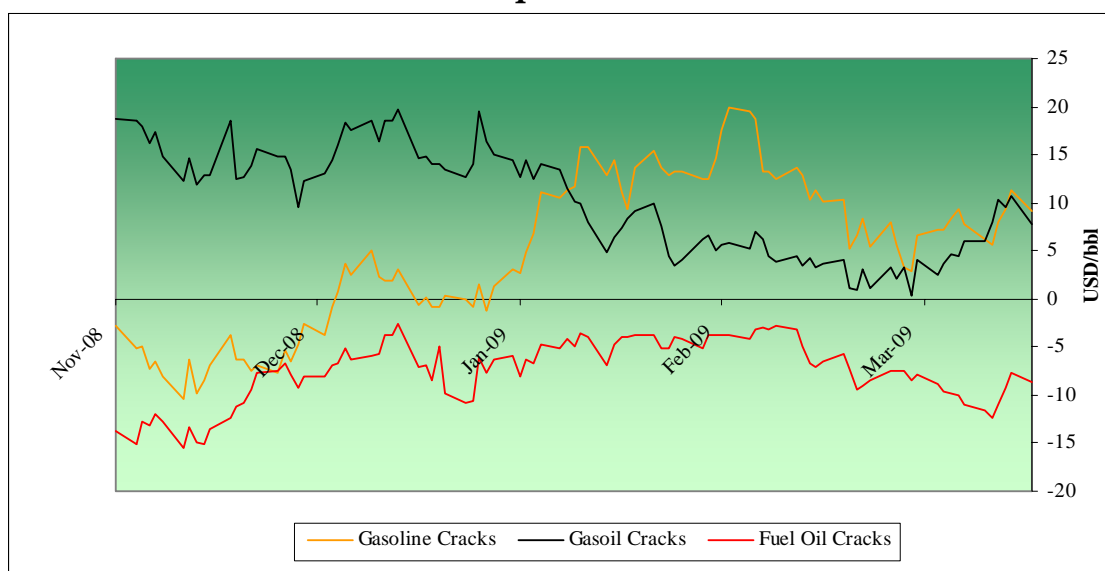


# Petroleum Cracks

*Over the quarter, gasoline and gasoil cracks averaged around \$9 and \$7 respectively. Meanwhile, fuel oil cracks averaged around a negative \$6.5 a barrel*

Petroleum cracks\* fell towards the end of CY08, with gasoline being the hardest hit and suffered negative cracks to the tune of more than \$10 a barrel. However, by the second week of January 2009, gasoline turned positive and climbed steadily upwards until February 2009. In March 2008, cracks fell further to as low as \$2, but recovered from thereon. On the other hand, gasoil cracks fell from January 2009 and recovered towards the end of March 2009. Over the quarter, gasoline and gasoil cracks averaged around \$9 and \$7 respectively. Meanwhile, fuel oil cracks averaged around a negative \$6.5 a barrel.

## Petroleum product cracks\*



Source: Bloomberg, FG Research

\* implies current cracks: same day product prices minus crude prices  
Prices are Singapore benchmarks

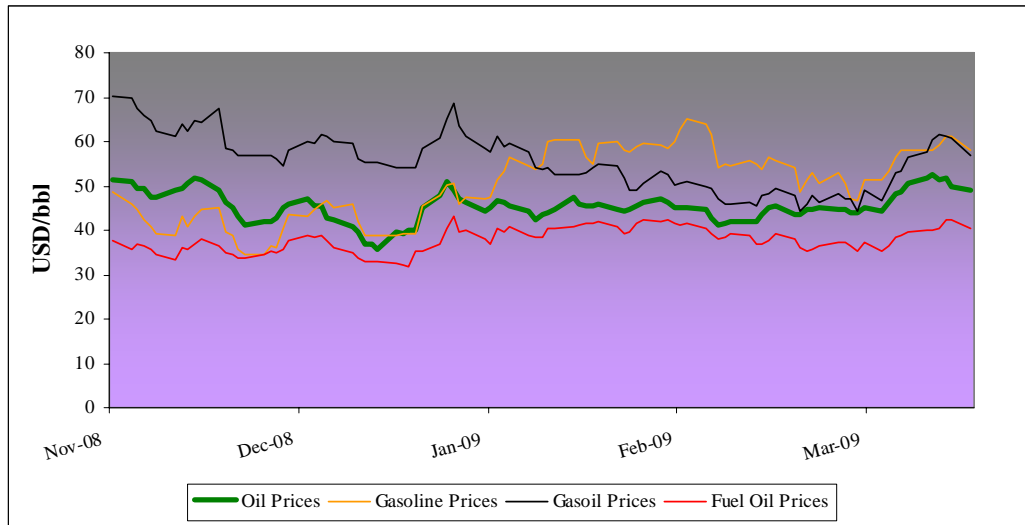
Now assuming crude oil prices at a 30 days lag to product prices, the GRMs work out to around \$1-1.5 per barrel higher than those under same day prices in Q1 FY09. Generally, the gap between sourcing of crude oil and manufacturing of products stands at 25-30 days. Of course it may vary for individual refineries. For instance, those with low transportation lead times, while acquiring crude, will have this number lower than 30 days. When crude oil prices and product prices move upward in tandem, there is an increase in the profitability of refiners on account of the lag, as the players enjoy better cracks from the sale of petroleum products right away, while the higher crude prices show up with a lag. From January 1, 2009 until March 30, 2009, crude oil rose 22%, whereas gasoline and fuel oil were up 48% and 14% respectively, which is a plus for refiners. Gasoil also rose over the period, but by 5%.

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Rising prices also mean inventory gains. The cumulative monthly growth rate of oil price for the period December 2008 to March 2009 stands at 3.6% and hence, a phenomenal inventory gain however can be ruled out.

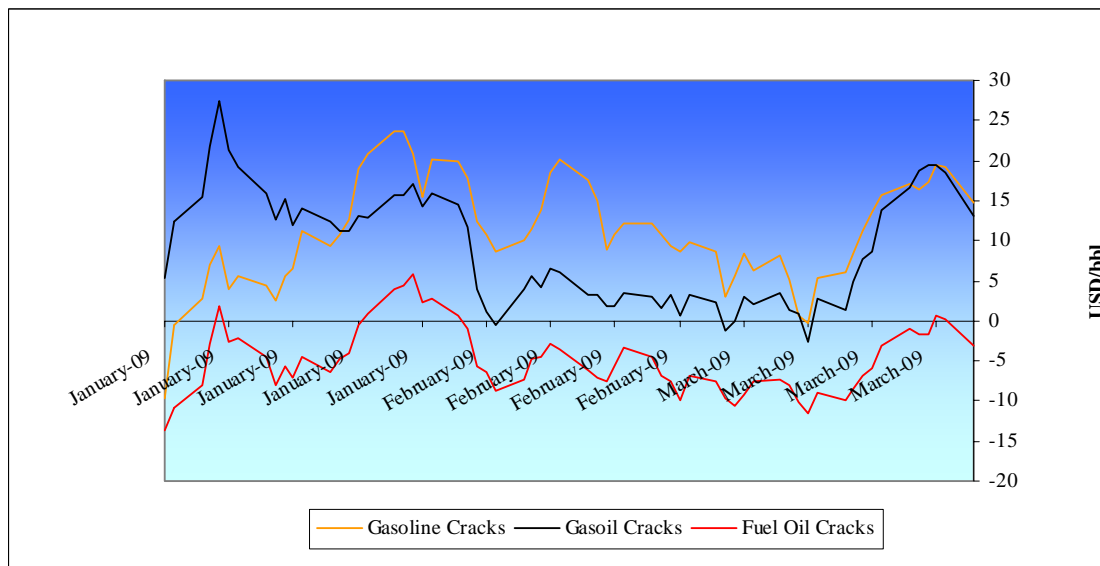
**Crude oil & petroleum product prices\***



Source: Bloomberg, FG Research  
\* Singapore benchmarks

The gasoline cracks at a 30 days lag to crude oil prices, for Q1 CY09 will be almost \$11 per barrel and gasoil and fuel oil cracks will be around \$9 and a negative \$5 respectively.

**Petroleum product cracks (30-days lag)**



Source: Bloomberg, FG Research



## *Our take*

In case of a refinery with a product profile of 25% light distillate and heavy distillate each and the balance 50% middle distillate, the above crack figures will translate into a GRM of \$4.4 per barrel for Q1 CY09, if same day prices are considered and assuming light, middle and heavy distillate to comprise only gasoline, only gasoil, and only residual fuel oil respectively. Interestingly for Q4 CY08 also, the GRM was around this number, due to high gasoil cracks prevailing then, but discounting lagged cracks and inventory losses the actual GRMs reported were much lower. Now assuming the 30 days lag, the GRMs will increase to \$5.5-5.9 per barrel for Q1 CY09 (although in reality GRMs would differ from this figure due to cracks of other products like naphtha, jet fuel, LPG etc). Inventory gains will add to it. We have not accounted any hedging effect here.

Oil prices rose 11% from December 2008 to March 2009. We expect refiners to post better numbers in Q1 CY09 vis-à-vis Q4 CY08, though we believe it could be difficult to sustain the improvement,

going forward, as the weaknesses in the global economy and demand destruction, coupled with capacity additions, may once again exert downward pressure on oil prices as well as the GRMs.

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