February 6, 2012

# Global: Energy: Oil - Refining

Equity Research

## Closures, project delays, demand outlook to drive upcycle in '12-13E

### Mothballing, capacity delays to lead refinery recovery and upcycle over medium term; Asian refiners key beneficiaries of higher cracks

While the market focuses on weak 4QCY11 results of refiners, we believe the global refining cycle is now heading for recovery and upcycle during 2012E-13E driven by 1) major mothballing of refineries in US/ Europe, 2) delays in new projects, 3) oil demand recovery from 2H12E. We also note there is only limited capacity addition after 2Q12E. Overall, global utilisation has moved up for all years: 2012E-14E. We believe the Asian refiners would be key beneficiaries of rising cracks while US/Europe refiners are plays on WTI-LLS and light-heavy oil spreads.

### Supply side reaction to weak margins has picked up in US/Europe

We have witnessed announcements of mothballing of about 1.2 mb/d of refining capacity since Sep '11, of which 1.1 mb/d will take place until July 2012. In addition to this, we believe about 2.4 mn b/d of refining capacity in the western hemisphere remains under strategic review. This represents about two years of normalised oil demand growth globally.

### Delay in new projects to support refining cycle over medium term

Moreover, we believe delays in new projects have become a central theme in the refining sector driven by delays in logistics, delays in acquiring land, obtaining clearances/permits and some tightness in engineering chain. We find more than half of the 1.5 mb/d likely delays for 2012E are in Asia.

### Raise Singapore cracks for 2H12E-2013E, normalised 2014E margin in line with oil forecasts; upgrade Asia refining stance to Attractive

We raise our Singapore cracks forecasts for 2012E-13E by 20% and upgrade our refining sector stance to Attractive from Neutral. China will continue to have tight distillate supply over the medium term, in our view.

### S-Oil, Thai Oil, RIL and Western are our favorite refiners

In Asia we upgrade S-Oil to Buy (CL), Thai Oil, RIL and GS Holdings to Buy, Caltex to Neutral; in US, Western Refining (CL), HollyFrontier, and CVR Energy remain our Buy-rated favorites. In Europe, we prefer the oil producers within the refining/integrated sector: RD Shell and BG (both CL Buy). **Key risks**: 1) Demand slowdown from weak macro, 2) oil price spike from low spare capacity in 2013E, 3) supply crunch from Iran tension escalation.

**GLOBAL REFINING STOCK COVERAGE SUMMARY**

| | Rating | Target Price | Potential upside % |
|---|---|---|---|
| **Asia Refiners with E&P** | | | |
| Reliance Industries (Rs) | Buy | 970.00 | 17% |
| **Asia Refiners** | | | |
| S-Oil (W) | Buy* | 170,000.00 | 41% |
| SK Innovation (W) | Buy | 220,000.00 | 28% |
| GS Holdings (W) | Buy | 78,000.00 | 21% |
| Thai Oil (Bt) | Buy | 79.00 | 23% |
| Caltex Australia (A$) | Neutral | 12.85 | 0% |
| Formosa Petrochemical (NT$) | Neutral | 85.00 | -5% |
| **US Refiners** | | | |
| Western Refining (US$) | Buy* | 21.00 | 26% |
| HollyFrontier (US$) | Buy | 36.00 | 18% |
| CVR Energy (US$) | Buy | 25.00 | -2% |
| Sunoco (US$) | Neutral | 39.00 | 2% |
| Tesoro Petroleum (US$) | Sell | 23.00 | -7% |
| Valero Energy (US$) | Sell | 21.00 | -12% |
| **Europe Refiners** | | | |
| Motor Oil Hellas (EUR) | Neutral | 7.80 | 33% |
| ERG (EUR) | Neutral | 11.00 | 28% |
| Tupras (TL) | Neutral | 48.10 | 14% |
| MOL (HuF) | Neutral | 21,500.00 | 13% |
| Hellenic Petroleum (EUR) | Sell | 6.40 | 12% |
| Saras (EUR) | Sell | 1.10 | 0% |
| PKN (PLN) | Sell | 37.50 | -1% |
| Neste Oil (EUR) | Sell | 8.40 | -5% |

Note: *denotes stock is on our regional Conviction list. Target prices are based on 12-month time horizon
Potential upside based on the close of February 01, 2012

*Source: Goldman Sachs Research estimates*

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All prices in this report are as of February 1, 2012, unless mentioned otherwise.

**Exhibit 1: Goldman Sachs Global Investment Research – Global Oil & Gas team**

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*Source: Goldman Sachs Research*

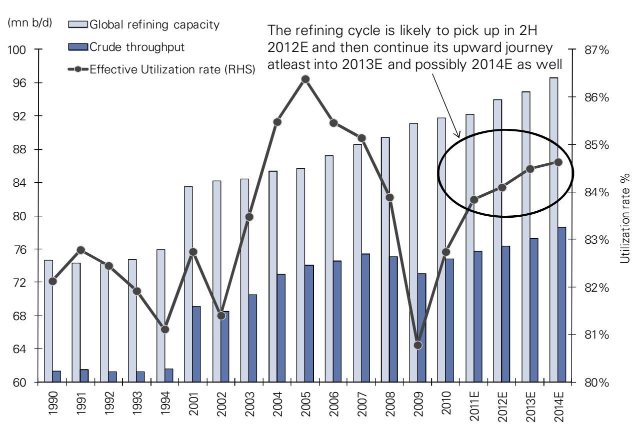
# Capacity mothballing, project delays and forecasted demand recovery to drive refining upcycle from 2H12E – 2013E

While the market focuses on weak 4QCY11 results of refiners, we believe the global refining cycle is now heading for recovery and upcycle during 2012E-13E driven by **1)** major mothballing of refineries in US/ Europe, **2)** delays in new projects, **3)** oil demand recovery from 2H12E. We also note there is only limited new refinery capacity addition after 2Q12E this year. Overall, global refinery utilisation rates have moved up for all the years – 2012E-14E – in our updated global refinery supply-demand model.

Apart from the supply side response to weak margins picking up in recent months, we are also witnessing regular delays in new capacities that will help the cycle recover and sustain for medium term, in our view.

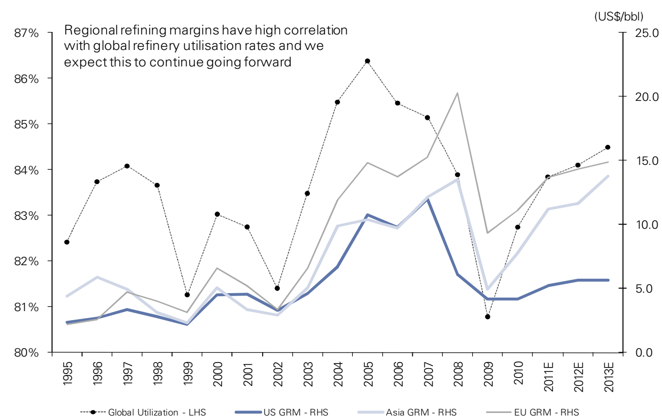
We believe the **Asian refiners would be key beneficiaries of rising cracks primarily** because of stronger Asia demand and lackluster US/Europe demand and **US/Europe refiners are more plays on the WTI-LLS and light-heavy oil price spreads**.

**Exhibit 2: Our new demand/supply forecasts imply a refining upcycle during 2012E-2013E**
Trend of global refinery utilisation rates



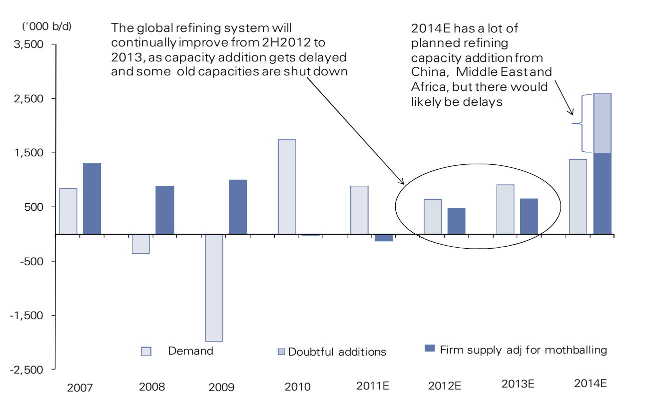

*Source: BP Statistical Review, Goldman Sachs Research estimates*

**Exhibit 3: Historical correlation between utilisation rates and regional margins remains high**
Trend of global utilization rate and regional margins



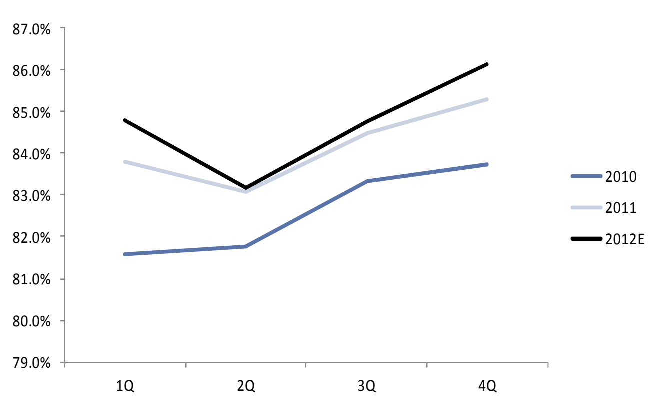

*Source: BP Statistical Review, Goldman Sachs Research estimates*

**Exhibit 4: Refining demand growth will outpace firm capacity addition (with mothballing) for next two years**
Global refinery annual supply-demand additions




*Source: Reuters, Goldman Sachs Research estimates*

**Exhibit 5: 2012E quarterly utilisation rates are likely to be better than both 2010 and 2011 levels**
Quarterly refining utilization rates




*Source: Goldman Sachs Research estimates*

In the near term, we expect margins to improve incrementally in 2H 2012E as compared to 1H inline with increase in our quarterly utilization forecasts. We note that global capacity additions remain limited post 961kb/d in 2Q 2012.

**Exhibit 6: 2Q 2012E will see most of the refinery capacity additions this year, leading to a relatively better S-D scenario in 2H12E**
List of refining capacities ramping up during the four quarters of 2012E globally (K b/d)

| Company | Location | b/d | % of 2012 addition |
|---|---|---|---|
| **1Q12 CY** | | **120,000** | **8%** |
| Repsol YPF SA | Cartagena, Spain | 120,000 | |
| **2Q12 CY** | | **961,345** | **67%** |
| MRPL | Mangalore | 106,345 | |
| Essar | Vadinar | 80,000 | |
| Hindustan Petroleum Corp Ltd | Bhatinda | 180,000 | |
| Motiva Enterprises LLC | Port Arthur, Tex | 325,000 | |
| Tatneft | Taneco, Russia | 40,000 | |
| Sinopec | Jinling | 110,000 | |
| Nagarjuna | Cuddalore | 120,000 | |
| **3Q12 CY** | | **260,000** | **18%** |
| PetroChina | Hohhot, Inner Mongolia | 70,000 | |
| PetroChina | Niger | 20,000 | |
| Rosneft | Tuapse, Russia | 140,000 | |
| A-Oil | Russia | 20,000 | |
| Tesoro | Mandan, US | 10,000 | |
| **4Q12 CY** | | **87,000** | **6%** |
| Sinopec | Anqing | 70,000 | |
| Marathon | Detroit | 15,000 | |
| WNR | Gallup | 2,000 | |
| **Total** | | **1,428,345** | |

Note: Net capacity addition of 488 K b/d in 2012E would be after adjusting these for mothballing

*Source: Company data, Factiva, Reuters, and Goldman Sachs Research estimates]*

The **key risks to our positive refining outlook** would be: **1)** Demand slowdown from weak macro, **2)** oil price spike from low spare capacity in 2013E, **3)** supply crunch from Iran tension escalation. Further **refinery project delays would be the key upside risk**.

## Asia – Pacific: Improved refining outlook on global mothballing and limited capacity additions in 2012E-13E

In line with the changes in the refinery utilisation rates, we have **raised our product cracks and Singapore complex margin forecasts for 2012E-13E by 20%.**

**Exhibit 7: We change crack/margin estimates and now forecast higher distillate cracks in 2012-13E**
Asian refining margins and product crack forecasts

| (US$/bbl) | 2012E | | 2013E | | Normalized | |
|---|---|---|---|---|---|---|
| **Refining Margins** | **Old** | **New** | **Old** | **New** | **Old** | **New** |
| Complex | 9.8 | 11.6 | 11.5 | 13.8 | 8.0 | 8.0 |
| **Product crack spreads** | | | | | | |
| Gasoline | 11.5 | 13.5 | 12.5 | 14.5 | 9.0 | 9.0 |
| Kerosene | 16.8 | 19.0 | 19.5 | 21.5 | 14.0 | 14.0 |
| Gasoil | 15.3 | 18.5 | 18.0 | 21.0 | 12.0 | 12.0 |
| Fuel Oil | -7.9 | -4.0 | -7.5 | -4.0 | -5.0 | -5.0 |
| Naphtha | 0.0 | -2.8 | 0.0 | 0.5 | 0.5 | 0.5 |

*Source: Goldman Sachs Research estimates*

While the broad market remains worried about the Dec quarter results, which are likely worse than expected, we believe the outlook 1-2 quarters out is encouraging. With the rising trend of refining margins over the next 2 years, we **upgrade our Asian refinery sector stance to Attractive from Neutral.**

While 1Q-2Q of 2012E is likely to have stable refining margins, **we believe that the real uptick would start from 2H12E** as we move past the majority of capacity additions for the year and oil demand picks up.

Following our upgrade of Singapore complex margins, we have raised 2012E-13E earnings of the Asian refiners under our coverage by an average of 7-8% in 2012-13 and raised their 12-month target prices by an average of 16%.

We have made the following changes:

**1**) **S-Oil to Buy (Conviction list) from Neutral,**

**2) Thai Oil to Buy from Sell**

**2) GS Holdings to Buy from Neutral,**

**3) RIL to Buy from Neutral,**

**4) and Caltex Australia to Neutral from Sell as** a result of these changes.

We keep our **Buy rating on SK Innovation and Neutral rating on Formosa Petrochemical**.

## Europe: Crude oil price differentials likely to remain the key driver for European refiners in 2012

We note that despite a healthy pick up in global and European refining utilisation rates in 2011, European refiners suffered another year of poor refining margins and low profitability. In fact due to refinery closures in Europe, refined product prices slightly improved relative to their global peers. However the shut in of Libyan production and subsequent impact on crude differentials had a far more material negative impact on profitability for the EU refiners. Indeed the scarcity of suitable crude supplies to offset the dramatic shortfall of Libyan production drove premiums for European light sweet crudes to record highs.

We believe this **theme of crude differentials driving profitability is likely to continue in 2012.** The return of Libyan volumes will benefit EU refiners, particularly those in the Med, with lower crude premiums. This however will at least partially be offset by EU embargoes on Iranian crude, another important source of EU crude imports. The knock on impact on Ural/Brent spreads as **refiners look to source Russian crude to replace Iranian crude could have a material negative impact on the complex East European refiners**.

While the recent refining closures in Europe and the US have helped to balance the market and have driven a temporary recovery in margins YTD from a weak 4Q, we note that there remains ample spare capacity in Europe, and global oil demand coming through as we expect in 2012/13 and no further non-OPEC crude supply disappointments would be needed to have a recovery in EU margins from 2H12. While **this is an upside risk to our view**, we believe with the relatively high uncertainty on economic growth and oil demand in Europe, it is unlikely the market will price in a sustainable margin recovery for the EU refiners until firm evidence of recovering oil demand supports it.

**In our view crude differentials will therefore remain the key theme of 2012 for the EU refiners**, with Ural/Brent spreads likely to narrow as demand picks up to offset EU Iranian embargoes. **Sell rated Neste Oil, PKN and Saras are most exposed of the EU refiners to tightening Ural/Brent spreads**. Tupras (Neutral) is most likely to benefit relative to its refining peers with easy access to Saudi/Iraqi crudes and critically no sanctions on buying cheap Iranian crude, which accounts for over 50% of Tupras' crude slate. Overall however **we continue to prefer exposure to the oil producers within the refining/integrated sector in Europe and RDShell (CL Buy) and BG (CL Buy, Last Close:1,425.00p) remain our top picks.**

### US: Margin outlook improved following capacity reductions, but crude oil access still the more important investment consideration

Recent indications of refinery closures in the Atlantic region of the US and Europe have helped lift benchmark US product crack spreads from the low levels seen in 4Q2011. We think the reduced supply announced to date and potential for **further rationalizations of disadvantaged capacity under strategic review has improved the outlook for all US refiners following a rough patch in 4Q2011.**

That said, relative to the markedly more robust growth outlook for areas like non-OECD Asia, **oil demand in the US and Europe remains more of a headwind than a tailwind** (the primary reason our regional benchmark margin forecasts are unchanged). Signs of economic vitality in the US and Europe, we think, are still key to determining whether regional refining margins can take a sustainable leg higher. With **an increasingly supportive supply outlook**, however, the bar for improvements in regional demand now appears to be set lower.

Notwithstanding **the potential for broad-based margin upside, we see regional crude oil sourcing and product pricing advantages as likely to remain the more important investment consideration for the US refiners**. The path toward, and level of, "normalized" discounts for WTI-referenced crude oils we believe will be pivotal in determining US refining profitability and driving share price performance going forward. Overall, we continue to prefer exposure to Mid-Continent over diversified "coastal" peers given (1) sustainable competitive crude oil sourcing advantages (which we quantify as our $4/bbl "normalized" Louisiana Light Sweet (LLS)-West Texas Intermediate (WTI) spread, which is equivalent to $2/bbl for Brent-WTI), (2) niche refined product market exposure, and (3) commensurately superior free cash flow generation vis-à-vis other refining regions and energy sub-sectors, even under narrower LLS-WTI spreads.

**Western Refining (CL), HollyFrontier, and CVR Energy remain our Buy-rated favorites** for exposure, with Marathon Petroleum (Neutral) also screening attractively. **We maintain our relative-to-the-sector Sell ratings on more diversified, "coastal" peers, Valero and Tesoro,** given each company's relatively lower exposure to favorable Mid-Continent refining fundamentals.

## Supply side reaction getting more pronounced on western front

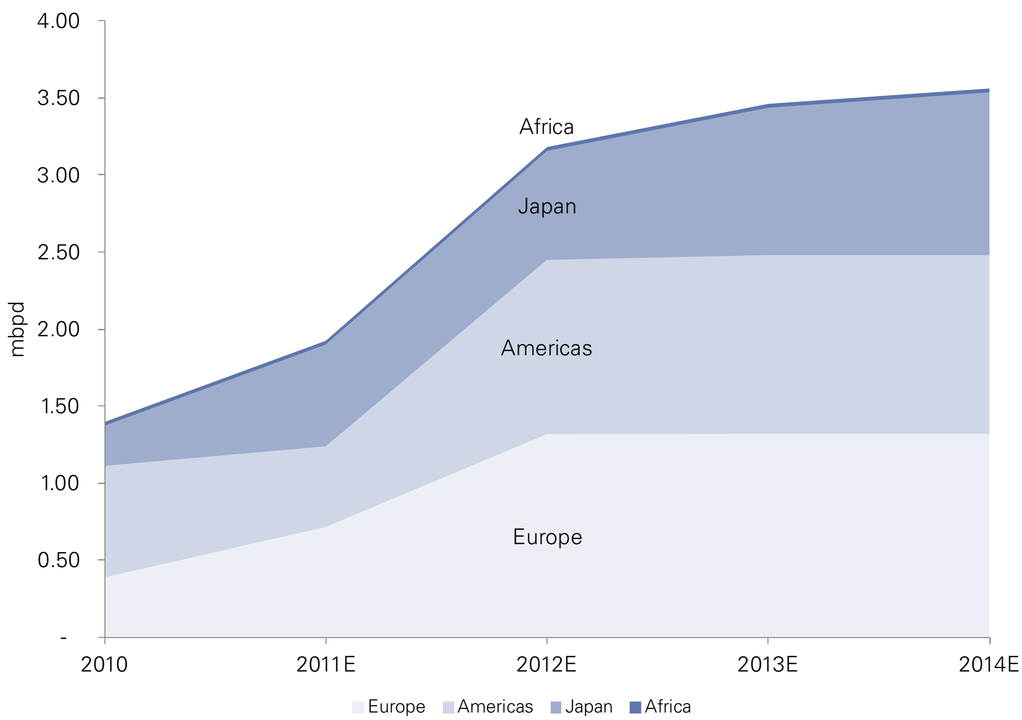
We have witnessed announcement of mothballing of about 1.2mb/d of refining capacity since October 2011, of which 1.1m b/d will take place between now and July 2012. We believe **another weak refining quarter in 4Q2011 along with weak WTI-LLS spread in the US and balance sheet issues with a European refiner** have hastened this decision.

**Exhibit 8: Recent mothballing announcement should support the cycle to start recovering**
Announced mothballing since Sep'11

| Idled since | Company | Location | Capacity (b/d) |
|---|---|---|---|
| **Europe** | | | |
| Nov'11 | ENI | Venice, Italy | 80,000 |
| Jan'12 | Petroplus | Petit Couronne, France | 161,800 |
| Jan'12 | Petroplus | Antwerp, Belgium | 107,500 |
| Jan'12 | Petroplus | Cressier, Switzerland | 68,000 |
| **Americas** | | | |
| Oct' 11 | Conoco | Trainer, PA | 185,000 |
| Nov'11 | Sunoco | Marcus Hook, PA | 178,000 |
| Jan'12 | Hess | Hovensa | 350,000 |
| **Asia** | | | |
| Mid-2013 | Shell | Clyde, Australia | 79,000 |
| Total anounced | | | 1,209,300 |
| Between Oct 2011 and July 2012 | | | 1,130,300 |

*Source: Company data*

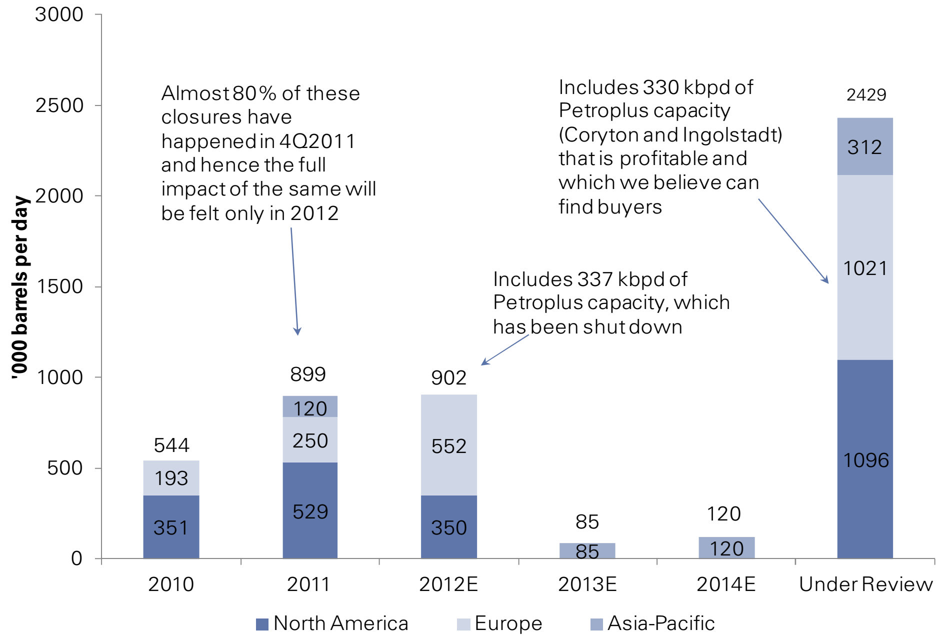
**Exhibit 9: We expect an increase in the mothballing of capacities over the next two years**
Trend of mothballed capacities globally




*Source: Company data, Factiva, Goldman Sachs Research estimates*

In addition to this, we believe **about 2.4 mn b/d of refining capacity** in the western hemisphere remains under strategic review. The shut-down capacities represent about **two years of normalised oil demand growth globally**. We believe this is likely to play a meaningful role in the recovery of the refining cycle from 2H12E onwards

**Exhibit 10: 2.1 mn b/d of additional OECD refining capacities remain under strategic review and these should mostly shut down in the absence of buyers**
Global refining capacity closures('000 b/d)

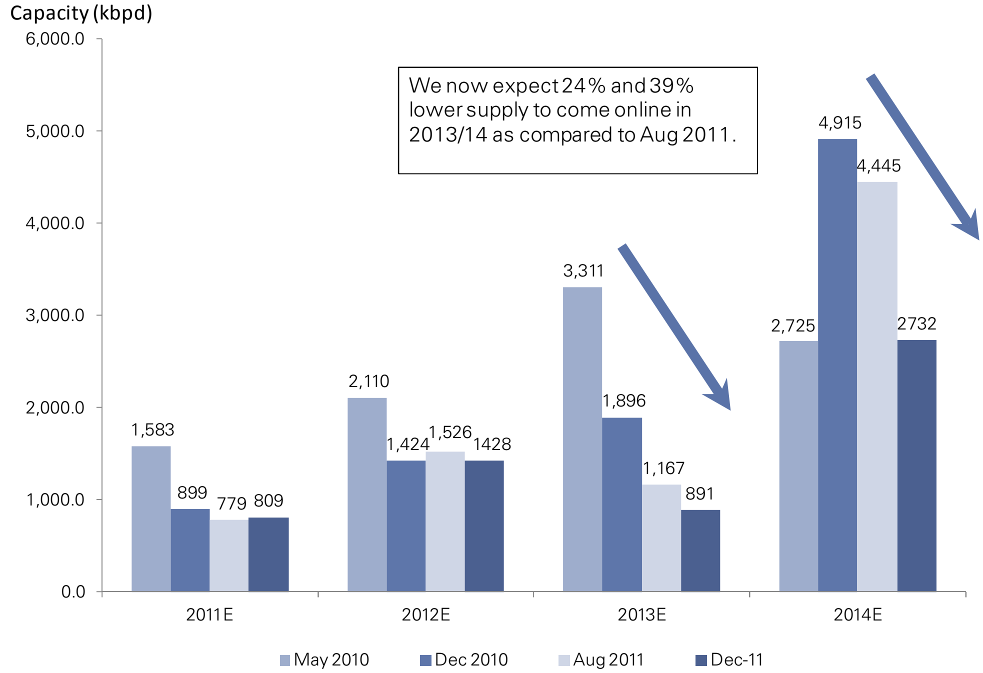



*Source: Company data, Goldman Sachs Research*

## Delay in capacity to support the refining cycle at least till 2013E

We believe delays in new projects have become a central theme in the refining sector driven by **delays in logistics, delays in acquiring land, obtaining clearances/permits and some tightness in the engineering chain**. This is effectively pushing the current cycle to at least 2013E, in our view.

**Exhibit 11: We believe delays in new refining capacities are largely driven by weakness in demand along with logistics challenges across the globe**
Trend in global refining capacity expectations

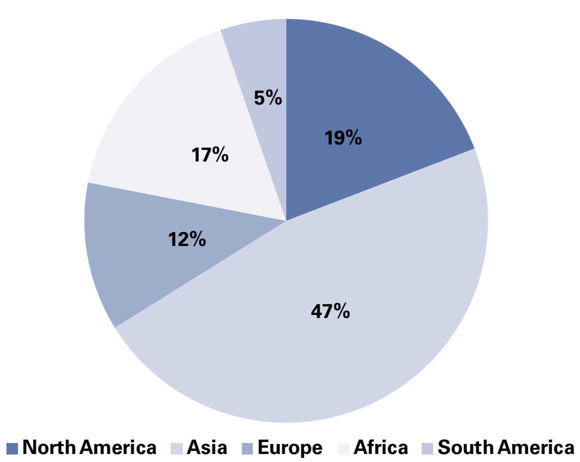



Note: Adding delays of about 0.8mn b/d carried over from 2011, we will get 1.5mn b/d of likely capacity delays for 2012E

*Source: Goldman Sachs Research estimates*

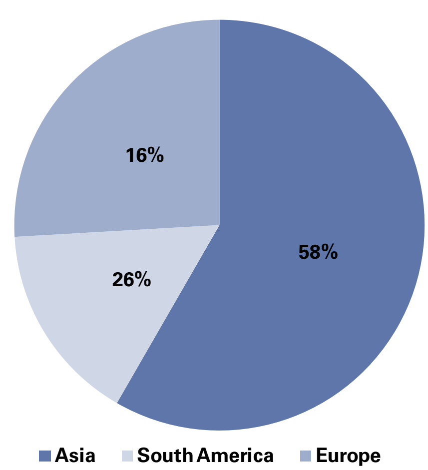
Additionally, we find more than half of 1.5 mb/d of likely capacity delays for 2012E are in Asia owing to logistics, delays in acquiring land, obtaining clearances/permits and some tightness in the engineering chain.

**Exhibit 12: Majority of delays in 2011 capacity additions came from Asia primarily in China and India…**
Capacity delay by region - 2011




*Source: Goldman Sachs Research estimates*

**Exhibit 13: …and that could possibly continue into 2012E**
Capacity delay by region – 2012E

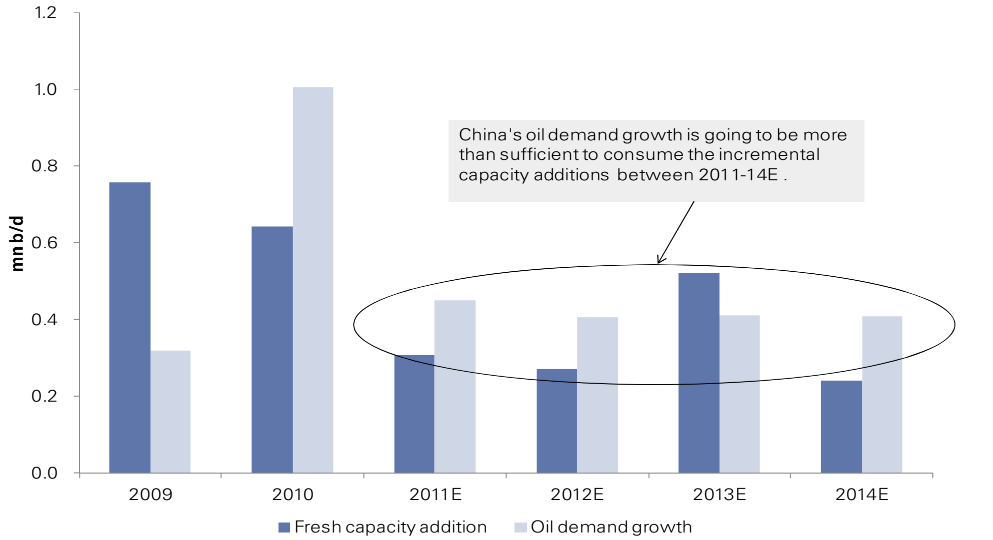



*Source: Goldman Sachs Research estimates*

# Chinese oil demand growth likely to remain strong and support distillate cracks in the medium term

We estimate that despite the regular refinery capacity additions in China, oil demand growth in the country will continue to outstrip incremental product supply growth, thereby keeping the domestic demand-supply balance on the edge, particularly for distillates.

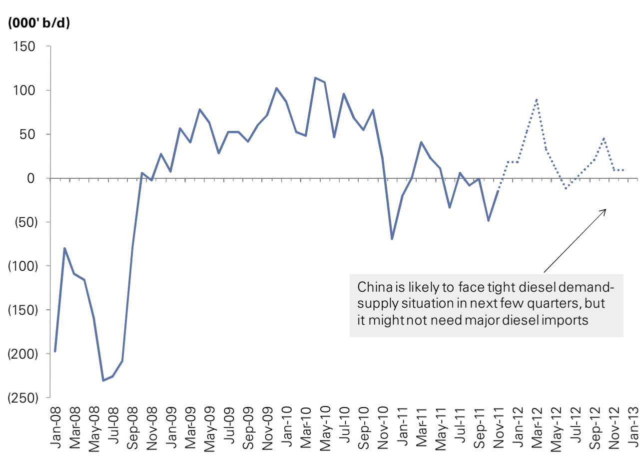
**Exhibit 14: Oil demand growth in China likely to be more than sufficient to meet refinery capacity additions over the medium term, in our view**




*Source: BP Statistical Review of World Energy, Goldman Sachs Research estimates*

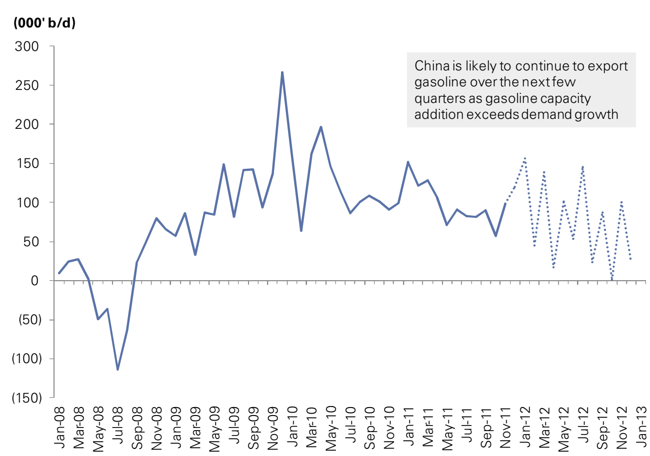
In fact, we estimate **China to be a net importer of diesel every once in a while, lending support to regional cracks**. However, the outlook for gasoline is less robust given that China will likely be an exporter of the product in the foreseeable future.

**Exhibit 15: China will face tight diesel demand-supply situation leading to occasional diesel imports**
China's net import and export of diesel




*Source: Company data, Factiva, Goldman Sachs Research estimates*

**Exhibit 16: China will continue to export gasoline in the foreseeable future despite demand growth**
China's net import and export of gasoline

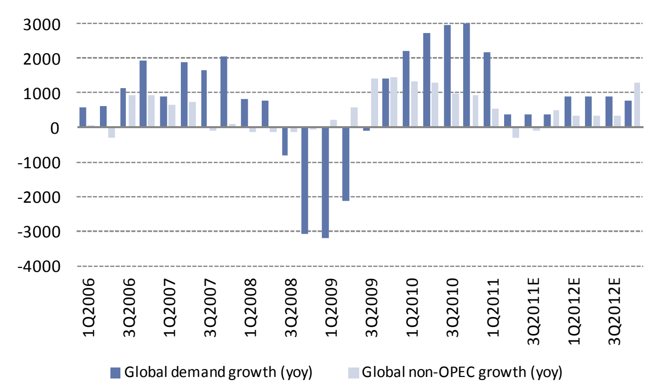



*Source: Company data, Factiva, Goldman Sachs Research estimates*

# Key risks: Demand slowdown from weak macro, oil price spike from low spare capacity in 2013E, supply crunch from Iran conflict

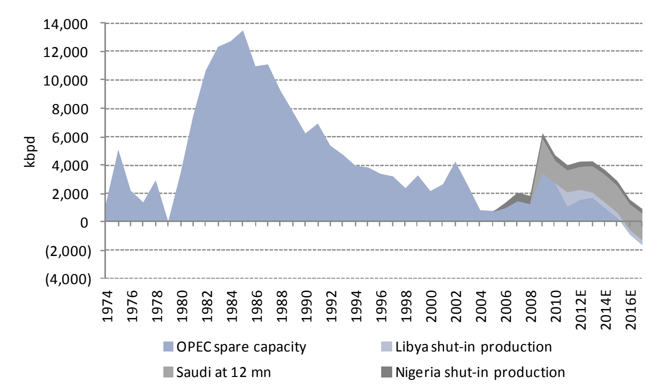
We believe continued disappointment in non-OPEC oil supply growth and robust oil demand growth could pose a risk of earlier than expected deterioration of OPEC spare capacity in 2013E, leading to a spike in crude oil prices. **An oil price spike above the "demand rationing" range of US$135+/bbl** would likely result in destruction of refined products demand and hence put pressure on refining margin, in our view.

**Exhibit 17: Continued delays in non-OPEC supply could further increase S-D gap …**
Global oil demand and non-OPEC supply growth (kbls/d)]




*Source: Goldman Sachs Research estimates*

**Exhibit 18: … resulting in earlier than expected deterioration of OPEC spare capacity in 2013-14**
Trend in OPEC spare capacity




*Source: Goldman Sachs Research estimates*

Additionally, global macro uncertainties in OECD pose a risk to lower than expected growth in global GDP resulting in lower than expected oil demand growth in 2012/13E.

**Exhibit 19: Our sensitivity analysis of global GDP and oil demand indicates negative incremental demand below global GDP growth of 2.5%**
Global oil demand sensitivity to GDP growth

2012E global oil demand growth scenarios (in thousands of b/d)

| | | Global GDP growth | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 0.0% | 0.5% | 1.0% | 1.5% | 2.0% | 2.5% | 3.0% | 3.5% | 4.0% |
| Efficiency gains (% improvement in bbls/GDP) | 1.0% | (891) | (450) | (9) | 432 | 873 | 1,314 | 1,755 | 2,196 | 2,637 |
| | 1.5% | (1,336) | (897) | (459) | (20) | 419 | 857 | 1,296 | 1,735 | 2,174 |
| | 2.0% | (1,782) | (1,345) | (909) | (472) | (36) | 401 | 837 | 1,274 | 1,710 |
| | 2.5% | (2,227) | (1,793) | (1,358) | (924) | (490) | (56) | 379 | 813 | 1,247 |
| | 3.0% | (2,672) | (2,240) | (1,808) | (1,376) | (944) | (512) | (80) | 352 | 784 |
| | 3.5% | (3,118) | (2,688) | (2,258) | (1,828) | (1,399) | (969) | (539) | (109) | 321 |

| Key assumptions | |
|---|---|
| Current GS base -case 2012E global oil demand growth (thou. b/d) | 862 |
| Base-case 2012E non-OPEC oil + OPEC NGLs supply growth (thou. b/d) | 872 |
| | |
| Current GS base-case global GDP growth (2012E % yoy) | 3.2% |
| Current GS base-case efficiency gain (2012E % yoy) | 2.2% |

*Source: Goldman Sachs Research estimates*

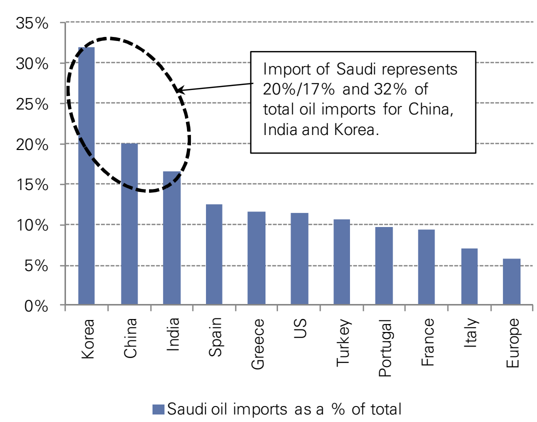
In addition to the fundamental demand-supply scenarios in the oil market, we see **risks around escalation of the tension between Iran and western powers**. While a European ban on Iran oil imports could be positive for some Asian refiners in the near term, a rise in cost of Saudi oil from higher demand would offset the benefit in our view. However if the tension escalates and Iran block the Strait of Hormuz , this would result in large oil supply tightness and a sharp rise in oil prices beyond demand destruction range posing a risk to refining margins across the globe. Note that, according to the US DOE, almost 17 million b/d of oil passed though the strait in 2011, roughly 35% of all seaborne crude. 75% of all the oil shipments through the Strait of Hormuz go to Asian markets.

**Exhibit 20: Loss of 450 kb/d EU imports would result in higher flows of cheaper Iran crude into Asia**
Average imports of Iranian crude, January – June 2011

| | % of Iran's exports | Total volume of crude imported from Iran, thousand b/d | Iran as % of total crude imported |
|---|---|---|---|
| European Union | 18 | 450 | |
| - Italy | 7 | 183 | 13 |
| - Spain | 6 | 137 | 13 |
| - France | 2 | 49 | 4 |
| - Greece | 1 | 20 | 14 |
| - Germany | 1 | 17 | 1 |
| - UK | 0 | 11 | 1 |
| - Netherlands | 1 | 33 | 2 |
| Japan | 14 | 341 | 10 |
| India | 13 | 328 | 11 |
| South Korea | 10 | 244 | 10 |
| Turkey | 7 | 182 | 51 |
| South Africa | 4 | 98 | 25 |
| Sri Lanka | 2 | 39 | 100 |
| Taiwan | 1 | 33 | 4 |
| China | 22 | 543 | 11 |
| **Total** | **91** | **2258** | |

*Source: Global Trade Atlas, APEX, EIA, Goldman Sachs Global ECS Research*

**Exhibit 21: However higher demand/cost for Saudi crude would offset the benefit to a large extent**
Saudi crude oil import as a % of total

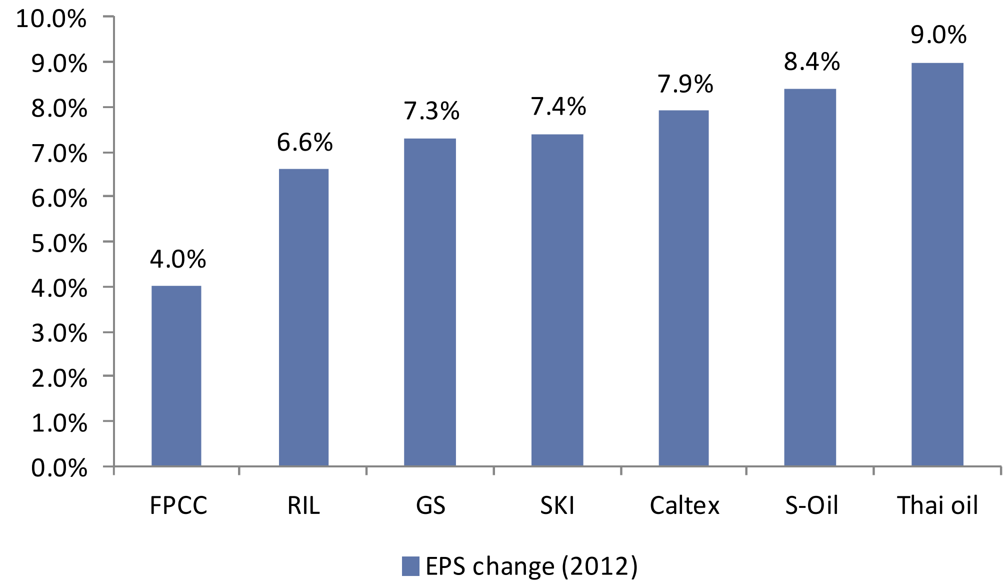



*Source: IEA, Infraline, Reuters and Goldman Sachs research estimates*

## Key changes in our view: Upgrade S-Oil to Buy (add to CL), raise RIL, Thai Oil, GS Holdings to Buy and Caltex Australia to Neutral

Given our positive medium term outlook for the refining cycle, we believe that investors can take advantage of investment opportunities within the Asian refining sector based on: **(1)** earnings leverage to refining margins or **(2)** quality of the asset in terms of cost efficiency and exposure to light-heavy oil price differential or **(3)** any capacity expansion coming on stream in an environment of robust refining margins.

**Exhibit 22: Earnings sensitivity to GRM remains high for Thai oil and Korean refiners**
Earnings sensitivity to 10% GRM change




*Source: Goldman Sachs Research estimates*

Along with **higher than consensus earnings** for the refiners, we believe possible **extension of the cycle into 2014E could also likely lead to higher 2012E multiples** for the stocks.

**Exhibit 23: Our estimates are 8-19% above consensus for 2012-13 for Asian refiners**
Summary of GS vs. Consensus estimates

| | | Net income (New) | | | Net income (Consensus) | | | GS vs. Consensus | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Companies (reporting curr. mn)** | **Ticker** | **2011E** | **2012E** | **2013E** | **2011E** | **2012E** | **2013E** | **2011E** | **2012E** | **2013E** |
| **Asia Refiners with E&P** | | | | | | | | | | |
| Reliance Industries (Rs) (a) | RELI.BO | 213,929 | 248,826 | 287,734 | 212,193 | 225,684 | 244,896 | 1% | 10% | 17% |
| **Asia Refiners** | | | | | | | | | | |
| S-Oil (W) | 010950.KS | 1,212,067 | 1,687,091 | 1,881,933 | 1,274,559 | 1,501,712 | 1,529,056 | -5% | 12% | 23% |
| SK Innovation (W) | 096770.KS | 3,308,818 | 2,281,350 | 2,776,331 | 3,359,720 | 2,212,857 | 2,457,956 | -2% | 3% | 13% |
| GS Holdings (W) | 078930.KS | 966,295 | 976,062 | 1,148,824 | 916,214 | 921,694 | 971,213 | 5% | 6% | 18% |
| Thai Oil (Bt) | TOP.BK | 16,951 | 14,383 | 18,316 | 15,299 | 14,430 | 15,056 | 11% | 0% | 22% |
| Formosa Petrochemical (NT$) | 6505.TW | 21,835 | 42,909 | 52,372 | 29,847 | 37,238 | 44,016 | -27% | 15% | 19% |
| Caltex Australia (A$) | CTX.AX | 267 | 331 | 460 | 259 | 311 | 373 | 3% | 6% | 23% |
| **Average (ex Indian OMC)** | | | | | | | | **-2%** | **8%** | **19%** |

(a) For fiscal year ending following March (i.e., FY2012E appears as 2011E).

*Source: Datastream, Bloomberg Consensus, Goldman Sachs Research estimates*

We upgrade S-Oil to Buy (on Conviction List) from Neutral, RIL and GS Holdings to **Buy from Neutral and Thai Oil to Buy from Sell.** We raise **Caltex Australia to Neutral from Sell and** retain our Buy rating on SK Innovation**.**

**Exhibit 24: Summary of our ratings and 12-month price targets for refinery stocks under our Asian coverage**
As of February 01, 2012

| | Ticker | 1-Feb-12 price | Rating (Previous) | Rating | TP (Previous) | Target Price (New) | Potential upside % | Valuation Methodology | Target Price Change |
|---|---|---|---|---|---|---|---|---|---|
| **Asia Refiners with E&P** | | | | | | | | | |
| Reliance Industries (Rs) (a) | RELI.BO | 830.30 | Neutral | **Buy** | 960.00 | **970.00** | **17%** | SOTP | 1.0% |
| **Asia Refiners** | | | | | | | | | |
| S-Oil (W) | 010950.KS | 120,500.00 | Neutral | **Buy*** | 140,000.00 | **170,000.00** | **41%** | SOTP | 21.4% |
| SK Innovation (W) | 096770.KS | 172,000.00 | Buy | **Buy** | 220,000.00 | **220,000.00** | **28%** | SOTP | 0.0% |
| GS Holdings (W) | 078930.KS | 64,300.00 | Neutral | **Buy** | 73,000.00 | **78,000.00** | **21%** | SOTP | 6.8% |
| Thai Oil (Bt) | TOP.BK | 64.00 | Sell | **Buy** | 47.00 | **79.00** | **23%** | EV/EBITDA | 68.1% |
| Caltex Australia (A$) | CTX.AX | 12.88 | Sell | **Neutral** | 11.25 | **12.85** | **0%** | P/E multiple | 14.2% |
| Formosa Petrochemical (NT$) | 6505.TW | 89.90 | Neutral | **Neutral** | 87.00 | **85.00** | **-5%** | P/B and ROE | (2.3%) |
| **Average** | | | | | | | **18%** | | **15.6%** |

*Source: Datastream, Goldman Sachs Research estimates*

**Exhibit 25: We raise our EPS estimates by 7-8% for 2012-13 based on our higher Singapore refining margin forecast**
Summary of old vs. new EPS estimates

| | | EPS (New) | | | EPS (Previous) | | | Estimate changes | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Companies (reporting curr. mn)** | **Ticker** | **2011E** | **2012E** | **2013E** | **2011E** | **2012E** | **2013E** | **2011E** | **2012E** | **2013E** |
| **Asia Refiners with E&P** | | | | | | | | | | |
| Reliance Industries (Rs) (a) | RELI.BO | 65.41 | 76.09 | 87.98 | 70.08 | 69.68 | 77.92 | -7% | 9% | 13% |
| **Asia Refiners** | | | | | | | | | | |
| S-Oil (W) | 010950.KS | 10,766.01 | 14,985.34 | 16,716.00 | 13,186.58 | 13,628.34 | 14,959.32 | -18% | 10% | 12% |
| SK Innovation (W) | 096770.KS | 35,784.33 | 24,672.43 | 30,025.57 | 38,643.94 | 25,209.84 | 31,650.23 | -7% | -2% | -5% |
| GS Holdings (W) | 078930.KS | 10,399.73 | 10,504.84 | 12,364.20 | 9,612.46 | 9,806.58 | 10,752.72 | 8% | 7% | 15% |
| Thai Oil (Bt) | TOP.BK | 8.31 | 7.05 | 8.98 | 8.30 | 5.27 | 7.24 | 0% | 34% | 24% |
| Formosa Petrochemical (NT$) | 6505.TW | 2.29 | 4.50 | 5.50 | 4.00 | 5.56 | 6.17 | -43% | -19% | -11% |
| Caltex Australia (A$) | CTX.AX | 0.99 | 1.23 | 1.71 | 0.99 | 1.13 | 1.57 | 0% | 9% | 9% |
| **Average** | | | | | | | | **-10%** | **7%** | **8%** |

(a) For fiscal year ending following March (i.e., FY2012E appears as 2011E).

*Source: Datastream, Goldman Sachs Research estimates*

## Top ideas: We prefer S-Oil, GS Holdings, RIL and Thai Oil; upgrade Caltex Australia to Neutral

### S-Oil (010950.KS, Buy (add to Conviction list, 12-month price target W170,000)

**Investment View:** We upgrade S-Oil to Buy and add it to the Conviction list with revised 12-m SOTP target price of W170,000 (41% upside). We also revise our 11E/12E/13E EPS estimates by -18%/10%/12% to reflect our upwardly revised Asian refining margins for these years as well as the regional chemical margins deck. We like S-Oil based on the following: a) strong earnings momentum of 35% yoy in 2012E on sector outlook, noting S-Oil is one of the key beneficiaries of refining margin strength, b) outlook on P-X to remain relatively solid among regional chemical products, c) strongest dividend play in the Korea energy, chemicals space, with interim dividend likely to pay out at end-2Q, d) least exposure to potential risks relating to pending oil embargo, and local government risk on domestic prices given small domestic gasoline market share exposure. Furthermore, shares are currently trading at attractive levels, at 2.3X 2012E P/B vs. ROE of 32% and 2012E EV/EBITDA of 6X.

**Valuation:** We revise our 12-month SOTP target price to W170,000 (from W140,000, implying 41% upside) reflecting our revised refining margin outlook as well as relevant chemical products prices.

**Key Risks:** Global oil demand, downside to product spreads and potential cash misuse.

Please refer to *S-Oil Corp. (010950.KS) Buy: Beneficiary of refining margin strength, upgrade to Buy (CL)*, *Feb 06, 2011.*

### Reliance Industries (RELI.BO, Buy, 12-month price target Rs 970)

**Investment view:** We upgrade Reliance Industries (RIL) to Buy from Neutral as we believe that an upcycle in refining will lift margins and is likely to drive an earnings surprise for RIL over the medium term, by offsetting lackluster E&P performance. We now forecast the refining cycle to be robust over 2HCY12E-CY13E driven by significant closures in US/Europe, delays in new projects and recovering oil demand. While D-6 ramp-up is unlikely till FY15E, we believe there could be positive updates from RIL's shale and broadband ventures in FY13E. Moreover, any update on value-accretive inorganic growth in existing lines of business could re-rate RIL stock, in our view.

**Valuation:** We revise our 12-m, SOTP based, TP to Rs 970 (from Rs 960) implying an upside of 17%. We raise FY13E-14E EPS by 9-13% to reflect higher margins and weaker INR-USD.

**Key risks:** 1) Low refining margin; 2) weak petchem margin; 3) expensive acquisitions.

Please refer to *Reliance Industries (RELI.BO) Buy: Refining upcycle to beat weak E&P, optionality of cash; raise to Buy*, *Feb 06, 2011.*

### Thai Oil (TOP.BK, Buy, 12-month price target Bt 79)

**Investment view:** We have turned more positive on the outlook for refining margins, and Thai Oil is a prime beneficiary. We estimate every 10% increase in Singapore complex GRM could boost 2012E earnings by 23% (10% increase in achieved margins would boost earnings by 9%). Since Feb 2011, Thai Oil has benefitted from a partial float of LPG prices. If LPG is fully deregulated, we estimate a further 10% increase to 2012E earnings.

**Valuation:** Given the more positive outlook for refining (a multi-year upcycle), we are also raising our target EV/EBITDA multiple to 7X (mid-way between mid-cycle and peak) from prior 5.5X (midcycle), which we believe is appropriate given the stronger 2013E outlook (27% earnings growth). Our new 12-month target price is Bt 79 (prior Bt47), which implies 2013E EV/EBITDA of 6X, in line with mid-cycle. We upgrade to Buy (prior Sell).

**Key risks:** Lower than expected GRMs.

Please refer to *Thai Oil (TOP.BK) Buy: Highly leveraged to rising GRMs; raising EPS/TP, upgrade to Buy*, *Feb 06, 2011.*

### SK Innovation (096770.KS, Buy, 12-month price target W220,000)

**Investment View:** We maintain our Buy rating on SK Innovation and our 12-m SOTP based target price of W220,000 implying upside potential of 28% from the current level. We also revise our EPS estimates by -7%/-2%/-5% or 11E/12E/13E after reflecting the latest Asian refining margin outlook as well as changes in key chemical products (ethylene, para-xylene etc). Our key investment thesis remains the following: a) favorable positioning with diversified earnings portfolio: a) TAC film/FCCL likely to start commercialization during 1H12, b) more progress on investments in E&P asset portfolio from use of last year's disposal proceeds, c) ongoing developments on the automobile rechargeable battery front, d) SK Innovation, with its ongoing investments in the E&P portfolio, also benefits from the higher oil price environment, which our GS ECS team expects to further tighten going into 2012E with $120/bbl (average), and e) one of the beneficiaries of our upgraded outlook on the regional Asia refining margins.

**Valuation:** We maintain our 12-m SOTP based target price of W220,000 (28% upside)

**Key Risks:** Global oil demand, downside to product spreads and potential cash misuse.

**Formosa Petrochemical (6505.TW, Neutral, 12-month price target NT$85)**

**Investment View:** We expect 97% yoy earnings growth for FPCC in 2012 due to 1) Capacity fully resumed at both its refineries and cracking units versus the major shut down in 2011, 2) The significant loss in 2H11 (NT$5bn) offers a low base for 2012, 3) Refinery sector which accounts for 70% of FPCC's 2012E revenue should see robust margin growth through 2012-2014 on further project delays. Our regional refining team expects Singapore complex refining margin to increase sequentially to US$15/bbl in 2014 from US$11.2/bbl in 2011, 4) Petrochemical sector which accounts for 25% of FPCC's 2012E revenues might see some headwinds giving the lackluster demand outlook and weak product margins.

Despite strong earnings growth, we think FPCC's valuation is not compelling versus regional refiners. FPCC's now trading at 3.4X 2012E P/B versus Asia refinery peers on 1.2X 2012E P/B.

**Valuation:** We maintain our Neutral rating on FPCC and revise down our 2011E/2012E/2013E EPS forecasts by 43%/19%/11% on the back of disappointing 4Q11 results and our cautious view on FPCC's cracking outlook. On the back of this, we also trim our 12-month P/B-ROE-based target price to NT$85 from NT$87 (-2%).

**Key Risks:** Upside risk: Better-than-expected petrochemical product demand; Downside risk: 1) Slower–than-anticipated expected capacity resumptions, and 2) Further industrial accidents at its plants.

# Caltex Australia (CTX.AX, Neutral):

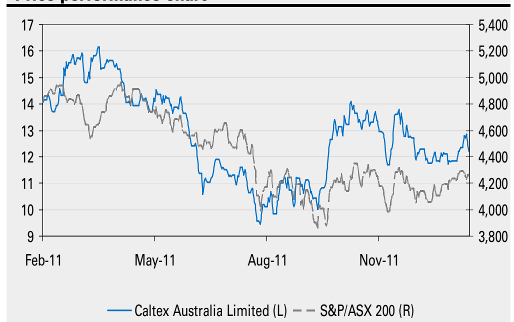
## What happened

We remove Caltex Australia from the Sell list, and upgrade our 12-month price target (based on forward 10.5x PE) by 14% to A$12.85 (from A$11.25), reflecting our stronger '12E/'13E refining margin outlook. Since we added CTX to the Sell list on Jan 16 the shares are up 0.7% (on an improving US economic and regional refining margin outlook), compared with ASX200 down 6.2% (CTX has underperformed our Australian Energy coverage by 5.2% in this time). (Over 12 months -13.7%, vs. index -12.6%). Our new price target implies a total return of 6.5% (including dividends). We revise EPS estimates by +0.2%/+8.6%/+8.9% for 11E/12E/13E (refining margin upgrades, partially offset by wider light-heavy oil spreads).

| Key data | | | | Current |
|---|---|---|---|---|
| Price (A$) | | | | 12.21 |
| 12 month price target (A$) | | | | 12.85 |
| Market cap (A$ mn) | | | | 3,296.7 |

| | 12/10 | 12/11E | 12/12E | 12/13E |
|---|---|---|---|---|
| NPAT preNRIs (A$ mn) | 317.6 | 267.0 | 331.0 | 460.4 |
| **EPS adj (A¢) New** | **117.6** | **98.9** | **122.6** | **170.5** |
| EPS revision (%) | 0.0 | 0.2 | 8.6 | 8.9 |
| EPS growth (%) | (2.1) | (15.9) | 23.9 | 39.1 |
| PER (X) | 10.4 | 12.3 | 10.0 | 7.2 |
| DPS (A¢) | 60.0 | 39.0 | 45.0 | 72.0 |
| Dividend yield (%) | 4.9 | 3.2 | 3.7 | 5.9 |
| Frank/Imput (%) | 100.0 | 100.0 | 100.0 | 100.0 |
| P/FCFPS (X) | 44.1 | 16.8 | 11.5 | 7.7 |
| EV/EBITDA (X) | 5.4 | 5.8 | 4.8 | 3.6 |
| P/BV (X) | 1.1 | 1.0 | 0.9 | 0.8 |
| Debt/equity (%) | 17.7 | 14.4 | 8.5 | 0.7 |

**Price performance chart**




| Share price performance (%) | 3 month | 6 month | 12 month |
|---|---|---|---|
| Absolute | (6.4) | 18.5 | (13.2) |
| Rel. to S&P/ASX 200 | (8.2) | 20.8 | (1.6) |

*Source: Company data, Goldman Sachs Research estimates, FactSet. Price as of 2/03/2012 close.*

## Current view

We retain our cautious fundamental view on Caltex Australia– we continue to believe its refineries are high cost and lack the flexibility to compete with large, complex Asian mega-refineries in the medium term (even given Australia's import dependence), and that while Caltex's marketing business is strong, there are major fundamental inter-dependencies between the two businesses (ie. marketing profitability would deteriorate without local Australian refining operations in our view).

However, with refining margins cyclically strengthening following the global industry's accelerated supply response to depressed margins in recent months, we now forecast earnings 6% above Bloomberg consensus for Caltex in 2012E. We also expect in the event of short term strength, the urgency around Caltex's refinery review may ease and outlook comments could become more upbeat. If so, investors may find a better level to reduce exposure to the stock in the coming quarters. Recent additional strength in the AUD/USD rate is notable, and does pose a major headwind to Caltex's refining earnings (even in the event of stronger US$ refining margins).

## Key Risks

Upside (1) Strengthening of Asian refining cracks - particularly leading into the US driving season in 2Q, (2) Lower AUD/USD rate; (3) Improved economic growth & oil demand outlook, (4) Success in achieving long-term production distribution agreement with Chevron or another Asian refiner (which would allow for Caltex to begin to reduce refining exposure). Downside: Lower refining margins, lower oil demand, higher AUD/USD rate.

# Caltex Australia: Summary Financials

| Profit & Loss (A$ mn) | | 12/10 | 12/11E | 12/12E | 12/13E |
|---|---|---|---|---|---|
| **Net Sales** | | 13,780.5 | 18,154.2 | 20,580.3 | 23,741.0 |
| **Operating EBITDA** | | **708.9** | **651.4** | **743.9** | **920.6** |
| D & A (excl. G/Will) | | 208.9 | 219.4 | 226.7 | 232.5 |
| **Operating EBITA** | | **500.0** | **432.0** | **517.2** | **688.1** |
| GW/Contract Intangible Amortisation | | 0.0 | 0.0 | 0.0 | 0.0 |
| Other (Non Operating Inc.) | | 0.0 | 0.0 | 0.0 | 0.0 |
| EBIT | | 500.0 | 432.0 | 517.2 | 688.1 |
| Net Interest Exp./(Rev) | | 57.4 | 52.6 | 46.4 | 32.5 |
| **PreTax Profit (pre NRI's)** | | **442.6** | **379.4** | **470.7** | **655.6** |
| Tax Expense (pre NRI's) | | 134.4 | 142.7 | 142.3 | 197.7 |
| Assoc./ JV NPAT | | 3.5 | 3.5 | 3.5 | 3.5 |
| Minorities (after Tax) | | 1.0 | 1.0 | 1.0 | 1.0 |
| Pref. Dividends | | 0.0 | 0.0 | 0.0 | 0.0 |
| Other Adj | | 6.3 | 111.2 | 5.0 | 110.8 |
| **Reported NPAT (Pre NRI)** [1] | | **317.0** | **350.3** | **336.0** | **571.1** |
| Non Recurring Items (after Tax) | | (0.7) | 83.3 | 5.0 | 110.8 |
| Reported NPAT (post NRI's) | | 316.3 | 350.3 | 341.0 | 681.9 |
| Reported EPS | | 117.4 | 129.8 | 124.4 | 211.5 |
| **GS Adjustments:** | | | | | |
| Reported NPAT (Pre NRI's) | | 310.7 | 239.2 | 331.0 | 460.4 |
| Gain/loss on crude inventory | | 22.0 | 211.9 | 7.2 | 158.3 |
| **RCOP after tax** [2] | | **317.6** | **267.0** | **331.0** | **460.4** |
| RCOP after tax EPS | | 117.6 | 98.9 | 122.6 | 170.5 |
| Sales Growth | (%) | 6.0% | 31.7% | 13.4% | 15.4% |
| Op. EBITDA Growth | (%) | 3.4% | -8.1% | 14.2% | 23.8% |
| NPAT (Adj.) Growth | (%) | -2.0% | -15.9% | 23.9% | 39.1% |
| **EPS (Adj.) Growth** | **(%)** | -2.1% | -15.9% | 23.9% | 39.1% |
| Op. EBITDA Margin | (%) | 5.1% | 3.6% | 3.6% | 3.9% |
| Op. EBITA Margin | (%) | 3.6% | 2.4% | 2.5% | 2.9% |
| D&A / Sales | (%) | 1.5% | 1.2% | 1.1% | 1.0% |
| **Interest Cover - EBIT** | **(X)** | **8.7** | **8.2** | **11.1** | **21.2** |
| Interest Cover - GCF | (X) | 8.9 | 10.5 | 17.6 | 25.7 |
| Tax Rate (pre Amort.) | (%) | 30.4% | 37.6% | 30.2% | 30.2% |
| **Return on Equity** [3] | **(%)** | **10.3%** | **10.6%** | **9.6%** | **14.5%** |

| Cash Flow Analysis (A$ mn) | | 12/10 | 12/11E | 12/12E | 12/13E |
|---|---|---|---|---|---|
| Operating EBITDA | | 708.9 | 651.4 | 743.9 | 920.6 |
| Change in Working Cap. [5] | | -199.0 | -100.9 | 73.3 | -84.2 |
| **Gross Cash Flow** | | **509.9** | **550.4** | **817.2** | **836.4** |
| Net Interest Paid | | -57.4 | -52.6 | -46.4 | -32.5 |
| Tax Paid (inc. abs) | | -60.5 | -178.4 | -144.4 | -245.2 |
| Other | | 36.4 | 215.4 | 10.7 | 161.8 |
| **Operating Cash Flow** | | **428.5** | **534.8** | **637.0** | **720.5** |
| Maint. Capex | | -353.7 | -338.7 | -349.9 | -291.7 |
| **FREE CASH FLOW (Pre Div's)** | | **74.7** | **196.0** | **287.1** | **428.8** |
| Dividends Paid | | -148.5 | -126.9 | -113.4 | -153.9 |
| Expan. Capex | | 0.0 | 0.0 | 0.0 | 0.0 |
| Acquisitions | | 0.0 | 0.0 | 0.0 | 0.0 |
| Asset Sales | | 18.6 | 0.0 | 0.0 | 0.0 |
| Dividends Received | | 0.0 | 0.0 | 0.0 | 0.0 |
| Share Issues/Repurchases | | 0.0 | 0.0 | 0.0 | 0.0 |
| Other (FX Adj, etc.) | | 51.2 | -30.0 | -50.0 | -190.0 |
| **Inc. in Net Cash / (Debt)** | | **-4.0** | **39.1** | **123.7** | **84.9** |
| Gross CF / Op. EBITDA | (X) | 0.72 | 0.85 | 1.10 | 0.91 |
| Maint. Capex / Sales | (%) | 2.6% | 1.9% | 1.7% | 1.2% |
| Total Capex / Sales | (%) | 2.6% | 1.9% | 1.7% | 1.2% |
| Maint. Capex / D&A | (X) | 1.69 | 1.54 | 1.54 | 1.25 |
| Total Capex / D&A | (X) | 1.69 | 1.54 | 1.54 | 1.25 |
| Maint. Capex / GCF | (%) | 69.4% | 61.5% | 42.8% | 34.9% |
| Growth Spend [4] | (A$ mn) | 0.0 | 0.0 | 0.0 | 0.0 |

| Margin Assumptions | 12/10 | 12/11E | 12/12E | 12/13E |
|---|---|---|---|---|
| Caltex Refiner Margin (CRM, US$/bbl)) | 8.39 | 7.04 | 7.70 | 9.10 |
| Integrated Margin (Acpl) | 9.27 | 8.34 | 9.00 | 10.24 |

| Transport Fuels Prod. & Sales | | 12/10 | 12/11E | 12/12E | 12/13E |
|---|---|---|---|---|---|
| Production | bL | 9.9 | 10.1 | 10.2 | 10.4 |
| Sales | bL | 15.0 | 15.6 | 15.9 | 16.2 |

| Profit Reconciliation* | 12/10 | 12/11E | 12/12E | 12/13E |
|---|---|---|---|---|
| **RCOP NPAT (GS Adj)** | **317.6** | **267.0** | **331.0** | **460.4** |
| Gain/Loss on Inventory (after tax) | 15.4 | 148.3 | 5.0 | 110.8 |
| Other | | | | |
| **Reported NPAT (Hist. Cost)** | **333.0** | **415.3** | **336.0** | **571.1** |
| (Pre NRI's) | | | | |

**RCOP Adjusted to Stat Profit*

| Balance Sheet (A$ mn) | | 12/10 | 12/11E | 12/12E | 12/13E |
|---|---|---|---|---|---|
| **ASSETS:** | | | | | |
| Cash | | 18.4 | 57.5 | 181.2 | 266.1 |
| Trade Debtors | | 839.7 | 1,010.9 | 1,069.6 | 1,233.8 |
| Inventory | | 1,385.3 | 1,597.2 | 1,604.4 | 1,762.6 |
| Prop., Plant & Equip. (net) | | 2,895.5 | 3,014.9 | 3,138.1 | 3,197.3 |
| Intangibles | | 79.9 | 79.9 | 79.9 | 79.9 |
| Investments | | 23.4 | 23.4 | 23.4 | 23.4 |
| Other | | 48.6 | 48.6 | 48.6 | 48.6 |
| TOTAL ASSETS | | 5,290.7 | 5,832.3 | 6,145.0 | 6,611.7 |
| Debt | | 562.6 | 532.6 | 482.6 | 292.6 |
| Trade Creditors | | 1,229.8 | 1,512.0 | 1,651.1 | 1,889.5 |
| Provisions | | 331.1 | 481.7 | 482.8 | 483.8 |
| Other | | 84.7 | 0.0 | 0.0 | 0.0 |
| TOTAL LIABILITIES | | 2,208.1 | 2,526.2 | 2,616.4 | 2,665.8 |
| **EQUITY:** | | | | | |
| Equity Reserves | | 537.6 | 537.6 | 537.6 | 537.6 |
| Retained Profits | | 2,533.3 | 2,756.7 | 2,979.3 | 3,396.5 |
| Minorities | | 11.8 | 11.8 | 11.8 | 11.8 |
| Preference Capital | | 0.0 | 0.0 | 0.0 | 0.0 |
| TOTAL EQUITY | | **3,082.6** | **3,306.0** | **3,528.6** | **3,945.8** |
| Capital Employed | | 3,626.8 | 3,781.1 | 3,829.9 | 3,972.3 |
| Net Debt / (Net Cash) | (A$ mn) | 544.2 | 475.0 | 301.3 | 26.4 |
| **Net Debt / Equity** | **(%)** | **17.7%** | **14.4%** | **8.5%** | **0.7%** |
| Net Debt / (D+E) | (%) | 15.0% | 12.6% | 7.9% | 0.7% |
| Avg. Working Capital | (A$ mn) | 995.2 | 1,096.1 | 1,022.8 | 1,107.0 |
| Avg. Work. Cap./ Sales | (%) | 7.2% | 6.0% | 5.0% | 4.7% |
| D&A / PPE (net) | (%) | 7.2% | 7.3% | 7.2% | 7.3% |
| Debtors Turnover | (days) | 22.2 | 20.3 | 19.0 | 19.0 |
| Inventory Turnover | (X) | 9.9 | 11.4 | 12.8 | 13.5 |
| Creditors Turnover | (days) | 32.6 | 30.4 | 29.3 | 29.0 |

| DCF Valuation | (A$ mn) | ($ps) | | |
|---|---|---|---|---|
| PV of Cash Flows | 3,456 | $12.80 | RF: | 6.5% |
| Mkt Value of Inv. | 0 | $0.00 | MRP: | 6.0% |
| (Debt) / Cash | 544 | $2.02 | KE: | 14.0% |
| Equity Value (Pre Imp.) | 2,912 | $10.78 | KD: | 4.6% |
| Value of Imp. Credits | | $2.07 | Beta: | 1.25 |
| **DCF Value:** | | **$12.85** | WACC: | **12.1%** |
| Shares on Issue (m) | 270.0 | | | |

| ROCE Analysis | | 12/10 | 12/11E | 12/12E | 12/13E |
|---|---|---|---|---|---|
| Adjusted NOPAT | (A$ mn) | 379.2 | 453.2 | 369.5 | 594.9 |
| Avg. Capital Employed | (A$ mn) | 3519.5 | 3703.9 | 3805.5 | 3901.1 |
| **ROCE** | **(%)** | **10.8%** | **12.2%** | **9.7%** | **15.3%** |
| WACC | (%) | 12.1% | 12.1% | 12.1% | 12.1% |
| **ROCE Spread** | **(abs.)** | **-1.3%** | **0.1%** | **-2.4%** | **3.1%** |
| Change in ROCE | (abs.) | -19.8% | 13.6% | -20.6% | 57.1% |

(1) Reported NPAT (pre NRI's) is before abnormal & non recurring items
(2) RCOP stands for Replacement Cost of Sales Operating Profit
(3) ROE excludes Pref. Capital
(4) Growth Spend represents Expansionary Capex & Acquisitions
(5) Change in Working Capital includes Contract Receivables

*Source: Company data, IRESS, Goldman Sachs Research estimates*

# GS Holdings (078930.KS, Buy): Upgrade to Buy on robust refining

## Source of opportunity

We upgrade GS Holdings from Neutral to Buy with a revised 12-m SOTP based target price of W78,000 (21% upside, previous: W73,000).

## Catalyst

a) Riding out the stronger refining cycle via refining subsidiary (50% stake owned) GS Caltex: We believe that GS Holdings will be able to enjoy greater earnings momentum as such.

b) Following our sector outlook change to a robust refining margin cycle throughout 2014E, we revise 11E/12E/13E EPS estimates by 8%/7%/15%, driven by stronger earnings momentum at the subsidiary refining arm, GS Caltex.

c) Also we expect a company specific catalyst of commercialization of the new VGO FCC by early 2013E and completing mechanical completion of the facility by end year end.

## Valuation

Our newly revised 12-m SOTP based target price is W78,000 (from previous W73,000) to reflect the stronger earnings momentum in refining, implying 1.1X 2012E P/B vs 15% ROE.

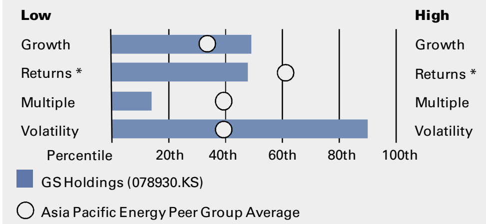
## Key risks

Weaker than expected oil demand is a key risk to our price target.

**INVESTMENT LIST MEMBERSHIP**
Asia Pacific Buy list

**Coverage View: Neutral**

**Investment Profile**

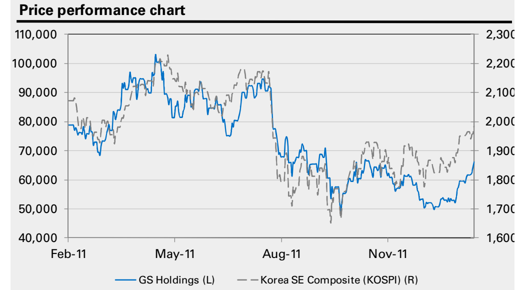



* Returns = Return on Capital For a complete description of the investment profile measures please refer to the disclosure section of this document.

| Key data | Current |
|---|---|
| Price (W) | 66,100 |
| 12 month price target (W) | 78,000 |
| Market cap (W bn / US$ mn) | 6,141.7 / 5,491.2 |
| Foreign ownership (%) | 19.1 |

| | 12/10 | 12/11E | 12/12E | 12/13E |
|---|---|---|---|---|
| EPS (W) | 3,634 | 10,400 | 10,505 | 12,364 |
| EPS growth (%) | (31.7) | 186.2 | 1.0 | 17.7 |
| EPS (diluted) (W) | 3,634 | 10,400 | 10,505 | 12,364 |
| EPS (basic pre-ex) (W) | 3,634 | 10,400 | 10,505 | 12,364 |
| P/E (X) | 18.2 | 6.4 | 6.3 | 5.3 |
| P/B (X) | 1.1 | 1.0 | 0.9 | 0.8 |
| EV/EBITDA (X) | 2.3 | 5.8 | 5.1 | 4.1 |
| Dividend yield (%) | 1.9 | 2.7 | 3.3 | 3.6 |
| ROE (%) | 7.2 | 16.8 | 14.9 | 15.5 |

**Price performance chart**




| Share price performance (%) | 3 month | 6 month | 12 month |
|---|---|---|---|
| Absolute | 5.8 | (28.0) | (16.1) |
| Rel. to Korea SE Composite (KOSPI) | 1.2 | (23.0) | (12.4) |

*Source: Company data, Goldman Sachs Research estimates, FactSet. Price as of 2/02/2012 close.*

# GS Holdings: Summary financials

| Profit model (W bn) | 12/10 | 12/11E | 12/12E | 12/13E |
|---|---|---|---|---|
| **Total revenue** | **42,269.9** | **7,922.1** | **8,346.6** | **9,082.9** |
| Cost of goods sold | (38,352.9) | (6,009.1) | (6,267.8) | (6,720.8) |
| SG&A | (2,260.9) | (815.6) | (859.3) | (935.1) |
| R&D | -- | -- | -- | -- |
| Other operating profit/(expense) | 0.0 | 0.0 | 0.0 | 0.0 |
| **EBITDA** | **2,278.5** | **1,217.3** | **1,357.4** | **1,583.4** |
| Depreciation & amortization | (622.4) | (119.9) | (137.9) | (156.4) |
| **EBIT** | **1,656.1** | **1,097.4** | **1,219.5** | **1,427.0** |
| Interest income | 127.2 | 15.5 | 20.6 | 31.0 |
| Interest expense | (341.9) | (11.0) | (12.5) | (11.0) |
| Income/(loss) from uncons. subs. | 0.0 | 0.0 | 0.0 | 0.0 |
| Others | (124.1) | 35.0 | 40.0 | 45.0 |
| **Pretax profits** | **1,317.2** | **1,136.8** | **1,267.6** | **1,492.0** |
| Income tax | (288.7) | (136.4) | (253.5) | (298.4) |
| Minorities | (690.9) | (34.1) | (38.0) | (44.8) |
| **Net income pre-preferred dividends** | **337.7** | **966.3** | **976.1** | **1,148.8** |
| Preferred dividends | 0.0 | 0.0 | 0.0 | 0.0 |
| **Net income (pre-exceptionals)** | **337.7** | **966.3** | **976.1** | **1,148.8** |
| Post-tax exceptionals | 0.0 | 0.0 | 0.0 | 0.0 |
| **Net income** | **337.7** | **966.3** | **976.1** | **1,148.8** |
| EPS (basic, pre-except) (W) | 3,634 | 10,400 | 10,505 | 12,364 |
| EPS (basic, post-except) (W) | 3,634 | 10,400 | 10,505 | 12,364 |
| EPS (diluted, post-except) (W) | 3,634 | 10,400 | 10,505 | 12,364 |
| DPS (W) | 1,250 | 1,800 | 2,200 | 2,400 |
| Dividend payout ratio (%) | 34.4 | 17.3 | 20.9 | 19.4 |
| Free cash flow yield (%) | (21.5) | 0.9 | 5.5 | 7.5 |

| Growth & margins (%) | 12/10 | 12/11E | 12/12E | 12/13E |
|---|---|---|---|---|
| Sales growth | NM | (81.3) | 5.4 | 8.8 |
| EBITDA growth | 350.0 | (46.6) | 11.5 | 16.6 |
| EBIT growth | 232.2 | (33.7) | 11.1 | 17.0 |
| Net income growth | (31.7) | 186.2 | 1.0 | 17.7 |
| EPS growth | (31.7) | 186.2 | 1.0 | 17.7 |
| Gross margin | 9.3 | 24.1 | 24.9 | 26.0 |
| EBITDA margin | 5.4 | 15.4 | 16.3 | 17.4 |
| EBIT margin | 3.9 | 13.9 | 14.6 | 15.7 |

| Cash flow statement (W bn) | 12/10 | 12/11E | 12/12E | 12/13E |
|---|---|---|---|---|
| Net income pre-preferred dividends | 337.7 | 966.3 | 976.1 | 1,148.8 |
| D&A add-back | 622.4 | 119.9 | 137.9 | 156.4 |
| Minorities interests add-back | 690.9 | 34.1 | 38.0 | 44.8 |
| Net (inc)/dec working capital | 789.5 | (659.6) | (75.9) | (131.7) |
| Other operating cash flow | (2,104.9) | 0.0 | 0.0 | 0.0 |
| **Cash flow from operations** | **335.6** | **460.7** | **1,076.0** | **1,218.3** |
| Capital expenditures | (1,406.5) | (400.0) | (700.0) | (700.0) |
| Acquisitions | (121.5) | 0.0 | 0.0 | 0.0 |
| Divestitures | 0.0 | 0.0 | 0.0 | 0.0 |
| Others | 513.8 | 0.0 | 0.0 | 0.0 |
| **Cash flow from investments** | **(1,014.2)** | **(400.0)** | **(700.0)** | **(700.0)** |
| Dividends paid (common & pref) | (94.8) | (118.4) | (170.5) | (208.4) |
| Inc/(dec) in debt | 636.0 | 150.0 | 0.0 | (100.0) |
| Common stock issuance (repurchase) | 0.0 | 0.0 | 0.0 | 0.0 |
| Other financing cash flows | (169.4) | 0.0 | 0.0 | 0.0 |
| **Cash flow from financing** | **371.8** | **31.6** | **(170.5)** | **(308.4)** |
| **Total cash flow** | **(306.7)** | **92.2** | **205.5** | **209.9** |

| Balance sheet (W bn) | 12/10 | 12/11E | 12/12E | 12/13E |
|---|---|---|---|---|
| Cash & equivalents | 217.1 | 309.3 | 514.8 | 724.7 |
| Accounts receivable | 1,205.4 | 1,325.9 | 1,396.9 | 1,520.2 |
| Inventory | 191.9 | 211.1 | 222.4 | 242.1 |
| Other current assets | 183.1 | 183.1 | 183.1 | 183.1 |
| **Total current assets** | **1,797.4** | **2,029.4** | **2,317.2** | **2,669.9** |
| Net PP&E | 1,440.9 | 1,762.9 | 2,358.6 | 2,929.1 |
| Net intangibles | 187.7 | 145.8 | 112.2 | 85.4 |
| Total investments | 4,190.3 | 4,190.3 | 4,190.3 | 4,190.3 |
| Other long-term assets | 1,469.2 | 1,469.2 | 1,469.2 | 1,469.2 |
| **Total assets** | **9,085.6** | **9,597.6** | **10,447.6** | **11,344.0** |
| Accounts payable | 639.8 | 119.9 | 126.3 | 137.5 |
| Short-term debt | 1,021.5 | 1,021.5 | 1,021.5 | 971.5 |
| Other current liabilities | 132.3 | 284.3 | 322.2 | 341.1 |
| **Total current liabilities** | **1,793.5** | **1,425.7** | **1,470.0** | **1,450.1** |
| Long-term debt | 158.5 | 208.5 | 208.5 | 158.5 |
| Other long-term liabilities | 1,097.2 | 1,097.2 | 1,097.2 | 1,097.2 |
| Total long-term liabilities | 1,255.7 | 1,305.7 | 1,305.7 | 1,255.7 |
| **Total liabilities** | **3,049.2** | **2,731.4** | **2,775.7** | **2,705.8** |
| **Preferred shares** | **0.0** | **0.0** | **0.0** | **0.0** |
| **Total common equity** | **5,364.6** | **6,160.3** | **6,928.0** | **7,849.5** |
| Minority interest | 671.8 | 705.9 | 743.9 | 788.7 |
| **Total liabilities & equity** | **9,085.6** | **9,597.6** | **10,447.6** | **11,344.0** |
| **BVPS (W)** | **57,736** | **66,301** | **74,563** | **84,481** |

| Ratios | 12/10 | 12/11E | 12/12E | 12/13E |
|---|---|---|---|---|
| ROE (%) | 7.2 | 16.8 | 14.9 | 15.5 |
| ROA (%) | 4.7 | 10.3 | 9.7 | 10.5 |
| ROACE (%) | 20.9 | 13.5 | 12.4 | 13.5 |
| Inventory days | 0.9 | 12.2 | 12.6 | 12.6 |
| Receivables days | 5.2 | 58.3 | 59.5 | 58.6 |
| Payable days | 3.0 | 23.1 | 7.2 | 7.2 |
| Net debt/equity (%) | 16.0 | 13.4 | 9.3 | 4.7 |
| Interest cover - EBIT (X) | 7.7 | NM | NM | NM |

| Valuation | 12/10 | 12/11E | 12/12E | 12/13E |
|---|---|---|---|---|
| P/E (analyst) (X) | 18.2 | 6.4 | 6.3 | 5.3 |
| P/B (X) | 1.1 | 1.0 | 0.9 | 0.8 |
| EV/EBITDA (X) | 2.3 | 5.8 | 5.1 | 4.1 |
| Dividend yield (%) | 1.9 | 2.7 | 3.3 | 3.6 |

Note: Last actual year may include reported and estimated data.

*Source: Company data, Goldman Sachs Research estimates.*

Source: Company data, Goldman Sachs Research estiamtes

**Exhibit 26: Our SOTP analysis for GS Holdings**

| Equity investments | % stake | Base (W bn) | Multiple | Methodology | (W bn) | % to total value | Discount applied (%) | Implied value post discount | % to total value |
|---|---|---|---|---|---|---|---|---|---|
| GS Caltex Corporation | 50% | 2,914 | 7.0 | Based on 7X 2012E EV/EBITDA net of '12E net debt | 6,675 | 65% | 30% | 4,673 | 61% |
| GS Home Shopping | 30% | | | Based on GSE target price (W140,000) | 276 | 3% | 30% | 193 | 3% |
| GS Retail | 66% | | 1.1 | Based on GSE Retail 2012E book value | 1,096 | 11% | 30% | 767 | 10% |
| GS EPS | 70% | | | Based on GSE EPS 2012E book value | 426 | 4% | 30% | 298 | 4% |
| GS Global | 56% | | | Current Market Value | 130 | 1% | 30% | 91 | 1% |
| GS Sports | 100% | | | Based on GSE Sports 2012E book value | 15 | 0% | 10% | 13 | 0% |
| **Others** | | | | | | | | | |
| (+) Tangible Assets (incl. GS Kangnam Tower) | | | | Based on 2010 Book | 553 | 5% | 0% | 553 | 7% |
| (+) Brand Royalty (DCF) | | | | | 1,042 | 10% | 0% | 1,042 | 14% |
| (+) Treasury shares | | | | | | | 30% | 1 | 0% |
| **Sum-of-the-parts value** | | | | | **10,213** | | | **7,631** | |
| (-) Year-end 2012E parent net debt | | | | | **332** | | | **332** | |
| (-) Preferred shares | | | | | 36 | | | 36 | |
| **Net asset value** | | | | | **9,844** | | | **7,263** | |
| No. of common shares outstanding (mn) | | | | | 92.915 | | | 93 | |
| **GS Implied Value (W/sh)** | | | | | **100,000** | | | **78,000** | |

*Source: Company data, Goldman Sachs Research estimates*

**Exhibit 27: We expect global oil demand growth to be driven by non-OECD which should more than compensate for sluggish OECD demand outlook**

GS global oil demand supply model

| in million b/d, unless otherwise indicated | 2009 | 2010 | 2011E | 2012E | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Year | Year | Year | 1QE | 2QE | 3QE | 4QE | Year | 2013E | 2014E | 2015E | 2016E | 2017E |
| Demand: | | | | | | | | | | | | | |
| OECD | 44.5 | 45.0 | 44.6 | 44.5 | 42.6 | 44.0 | 44.4 | 43.9 | 43.4 | 43.3 | 43.2 | 43.0 | 42.9 |
| Non-OECD | 41.0 | 43.2 | 44.5 | 44.9 | 45.7 | 46.2 | 47.4 | 46.1 | 47.7 | 49.4 | 51.3 | 53.1 | 55.1 |
| Demand | 85.6 | 88.3 | 89.1 | 89.4 | 88.4 | 90.2 | 91.8 | 89.9 | 91.1 | 92.7 | 94.4 | 96.2 | 98.0 |
| *y-o-y growth* | *(1.0)* | *2.7* | *0.8* | *0.43* | *0.54* | *0.83* | *1.6* | *0.9* | *1.2* | *1.6* | *1.7* | *1.8* | *1.8* |
| *y-o-y growth (adjusted for balancing iten* | *(0.8)* | *3.0* | *1.5* | *0.7* | *1.2* | *0.8* | *1.6* | *1.1* | *1.2* | *1.6* | *1.7* | *1.8* | *1.8* |
| Supply: | | | | | | | | | | | | | |
| Non-OPEC | 51.5 | 52.6 | 52.8 | 53.2 | 52.7 | 53.1 | 54.3 | 53.3 | 54.0 | 54.4 | 54.8 | 55.1 | 55.8 |
| *y-o-y growth* | *(0.1)* | *1.1* | *0.2* | *0.5* | *0.5* | *0.6* | *0.6* | *0.6* | *0.7* | *0.4* | *0.4* | *0.3* | *0.7* |
| OPEC: | | | | | | | | | | | | | |
| Crude | 29.1 | 29.5 | 30.6 | 30.2 | 29.6 | 31.2 | 31.5 | 30.6 | 30.9 | 32.0 | 33.1 | 34.3 | 35.3 |
| NGLs | 4.9 | 5.4 | 5.7 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.2 | 6.3 | 6.5 | 6.7 | 6.9 |
| Total | 34.1 | 34.8 | 36.3 | 36.1 | 35.6 | 37.2 | 37.5 | 36.6 | 37.1 | 38.3 | 39.6 | 41.0 | 42.2 |
| Total | 85.6 | 87.5 | 89.1 | 89.4 | 88.4 | 90.2 | 91.8 | 89.9 | 91.1 | 92.7 | 94.4 | 96.2 | 98.0 |
| **Inventory build (draw):** | | | | | | | | | | | | | |
| **Implied stock change from S/D mode** | **0.0** | **(0.8)** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** |
| **Less:** | | | | | | | | | | | | | |
| **Net underestimation of demand/oth** | **(0.3)** | **(0.7)** | **(0.2)** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** |
| **Floating storage/oil in transit** | **0.3** | **(0.2)** | **(0.0)** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** |
| **Government inventory build (draw)** | **0.1** | **(0.0)** | **(0.1)** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** |
| **Total adjustments** | **0.1** | **(0.9)** | **(0.3)** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** |
| ***Reported OECD inventory build (draw*** | ***(0.1)*** | ***0.1*** | ***0.3*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** |
| Demand growth (y-o-y): | | | | | | | | | | | | | |
| OECD | -4.2% | 1.1% | -1.0% | -1.5% | -1.7% | -1.7% | -1.4% | -1.6% | -1.0% | -0.3% | -0.3% | -0.3% | -0.3% |
| Non-OECD | 2.4% | 5.4% | 2.9% | 2.5% | 2.8% | 3.6% | 5.0% | 3.5% | 3.5% | 3.7% | 3.7% | 3.7% | 3.7% |
| Total | -1.2% | 3.2% | 0.9% | 0.5% | 0.6% | 0.9% | 1.8% | 1.0% | 1.3% | 1.8% | 1.8% | 1.9% | 1.9% |
| Supply growth (y-o-y): | | | | | | | | | | | | | |
| Non-OPEC | -0.1% | 2.2% | 0.3% | 1.0% | 0.9% | 1.1% | 1.2% | 1.0% | 1.3% | 0.7% | 0.8% | 0.5% | 1.2% |
| OPEC | -3.0% | 2.2% | 4.2% | 1.1% | 1.2% | 4.0% | 2.7% | 0.9% | 1.3% | 3.4% | 3.3% | 3.7% | 2.8% |
| Total | -1.3% | 2.2% | 1.9% | 1.0% | 1.0% | 2.2% | 1.8% | 1.0% | 1.3% | 1.8% | 1.8% | 1.9% | 1.9% |
| OPEC crude oil capacity | 35.4 | 35.1 | 34.7 | 34.9 | 34.9 | 34.9 | 34.9 | 34.9 | 35.2 | 35.7 | 36.0 | 36.1 | 36.5 |
| ex-Nigeria shut ins | 33.1 | 33.6 | 33.1 | 33.3 | 33.3 | 33.3 | 33.3 | 33.3 | 33.4 | 33.8 | 34.1 | 34.3 | 34.6 |
| ex-Nigeria shut-ins, Saudi over 10 mn b/ | 32.6 | 33.2 | 32.7 | 32.9 | 32.9 | 32.9 | 32.9 | 32.9 | 33.0 | 33.4 | 33.8 | 33.9 | 34.3 |
| **OPEC spare capacity** | 6.3 | 5.6 | 4.0 | 4.7 | 5.2 | 3.7 | 3.3 | 4.3 | 4.3 | 3.7 | 2.9 | 1.7 | 1.2 |
| ex-Nigeria | 3.9 | 4.1 | 2.5 | 3.1 | 3.7 | 2.1 | 1.8 | 2.7 | 2.5 | 1.8 | 1.0 | (0.1) | (0.7) |
| **ex-Nigeria, Saudi over 10 mnb/d** | **3.5** | **3.7** | **2.1** | **2.8** | **3.3** | **1.8** | **1.4** | **2.3** | **2.1** | **1.4** | **0.7** | **(0.4)** | **(1.0)** |

*Source: IEA, BP Statistical Review of World Energy, Goldman Sachs Research estimates*

## Exhibit 28: Global refiners valuation comps table

As of February 01, 2012

| | Ticker | Rating | Price Feb 1 | Market cap (US$mn) | P/E (X) 2010 | P/E (X) 2011E | P/E (X) 2012E | EV/EBITDA (X) 2010 | EV/EBITDA (X) 2011E | EV/EBITDA (X) 2012E | ROE (%) 2010 | ROE (%) 2011E | ROE (%) 2012E | 2011E P/BV (X) | 2011E Dividend yield (%) | 2011E Net debt/ equity (%) | EV/Complexity Capacity (b) (US$'000/b/d) | EV/Capacity (b) (US$'000/b/d) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **India** (Rs) (a) | | | | | | | | | | | | | | | | | | |
| Bharat Petroleum | BPCL.BO | Neutral | 560.00 | 4,120 | 13.1 | 31.7 | 13.0 | 7.9 | 11.0 | 7.5 | 11.4 | 4.5 | 10.4 | 1.4 | 1.0 | 73.0 | 2.3 | 12.7 |
| Hindustan Petroleum | HPCL.BO | Buy* | 288.05 | 1,987 | 6.3 | 22.4 | 6.9 | 7.1 | 9.5 | 6.2 | 12.8 | 3.4 | 10.6 | 0.8 | 1.4 | 146.9 | 3.8 | 21.0 |
| Indian Oil Corporation | IOC.BO | Neutral | 271.50 | 13,414 | 8.4 | 13.2 | 7.2 | 7.7 | 9.5 | 6.2 | 13.8 | 8.2 | 14.1 | 1.1 | 2.9 | 76.3 | 3.1 | 18.6 |
| **Taiwan** (NT$) | | | | | | | | | | | | | | | | | | |
| Formosa Petrochemical | 6505.TW | Neutral | 89.90 | 28,966 | 20.9 | 39.2 | 20.0 | 14.9 | 20.9 | 14.6 | 17.2 | 8.9 | 17.0 | 3.4 | 2.0 | 71.4 | 10.1 | 68.6 |
| **Korea** (W) | | | | | | | | | | | | | | | | | | |
| GS Holdings (Parent) | 078930.KS | Buy | 64,300 | 5,317 | 17.7 | 6.2 | 6.1 | 3.1 | 5.7 | 5.0 | 6.7 | 15.0 | 13.4 | 1.0 | 2.8 | 13.4 | 1.1 | 8.5 |
| S-Oil | 010950.KS | Buy* | 120,500 | 12,074 | 19.2 | 10.5 | 7.8 | 15.2 | 8.0 | 5.6 | 16.6 | 26.7 | 31.4 | 2.7 | 5.5 | 36.5 | 3.4 | 24.9 |
| SK Innovation | 096770.KS | Buy | 172,000 | 14,155 | 14.1 | 4.8 | 7.0 | 8.1 | 6.1 | 5.7 | 11.6 | 25.7 | 14.7 | 1.1 | 1.3 | 44.8 | 3.2 | 17.8 |
| **Thailand** (Bt) | | | | | | | | | | | | | | | | | | |
| Thai Oil | TOP.BK | Buy | 64.00 | 4,220 | 23.0 | 7.7 | 9.1 | 10.6 | 5.2 | 5.5 | 7.6 | 20.6 | 15.6 | 1.6 | 5.2 | 25.2 | 3.8 | 21.9 |
| **Asian median** | | | | | **15.9** | **11.9** | **7.5** | **7.9** | **8.0** | **5.7** | **12.2** | **11.9** | **14.4** | **1.3** | **2.4** | **58.1** | **3.3** | **19.8** |
| **US** (US$) | | | | | | | | | | | | | | | | | | |
| Sunoco | SUN | Neutral | 38.40 | 4,099 | 21.5 | NM | 30.8 | 5.4 | 12.1 | 9.8 | 7.7 | (1.4) | 13.7 | 3.2 | 1.6 | 153.0 | 1.1 | 8.9 |
| Tesoro Corp. | TSO | Sell | 24.84 | 3,505 | NM | 6.0 | 9.2 | 9.3 | 2.6 | 3.3 | (1.5) | 17.1 | 9.8 | 0.9 | 0.0 | 14.1 | 0.8 | 6.1 |
| Valero Energy | VLO | Sell | 23.98 | 13,654 | 15.7 | 6.6 | 6.1 | 5.7 | 3.8 | 3.5 | 5.8 | 13.0 | 12.1 | 0.8 | 0.8 | 34.5 | 0.6 | 7.1 |
| CVR Energy | CVI | Buy | 25.58 | 2,211 | 229.8 | 6.6 | 6.1 | 6.7 | 3.6 | 2.1 | 1.4 | 39.2 | 30.8 | 1.4 | 0.0 | 40.2 | 1.6 | 20.7 |
| Western Refining | WNR | Buy* | 16.73 | 1,483 | NM | 5.4 | 5.4 | 7.8 | 2.7 | 1.9 | (1.2) | 43.1 | 34.7 | 1.4 | 0.0 | 149.4 | 1.9 | 12.3 |
| **US median** | | | | | **21.5** | **6.3** | **6.1** | **6.7** | **3.6** | **3.3** | **1.4** | **17.1** | **13.7** | **1.4** | **1.2** | **40.2** | **1.1** | **8.9** |
| **Europe** | | | | | | | | | | | | | | | | | | |
| ERG (EUR) | ERG.MI | Neutral | 8.58 | 1,696 | NM | NM | 17.8 | 7.1 | 7.6 | 5.3 | (1.0) | (1.0) | 3.6 | 0.7 | 4.7 | 36.6 | 0.7 | 5.2 |
| MOL (HuF) | MOLB.BU | Neutral | 19,100 | 7,661 | 9.4 | 8.5 | 8.9 | 4.3 | 3.9 | 3.4 | 9.4 | 9.6 | 8.3 | 1.0 | 3.0 | 32.7 | 2.9 | 31.9 |
| Neste Oil (EUR) | NES1V.HE | Sell | 8.88 | 2,996 | 17.2 | 23.9 | 9.5 | 8.4 | 9.5 | 6.3 | 5.7 | 3.9 | 9.5 | 0.9 | 2.1 | 87.2 | 1.3 | 14.2 |
| OMV (EUR) | OMVV.VI | Neutral | 25.65 | 10,650 | 6.9 | 7.9 | 6.0 | 3.2 | 3.5 | 3.0 | 10.5 | 8.4 | 10.2 | 0.8 | 3.9 | 36.9 | 2.3 | 18.6 |
| PKN (PLN) | PKNA.WA | Sell | 37.75 | 5,070 | 12.5 | 12.5 | 12.1 | 5.8 | 5.1 | 4.7 | 5.7 | 5.2 | 5.1 | 0.7 | 5.6 | 18.2 | 1.3 | 11.7 |
| Saras (EUR) | SRS.MI | Sell | 1.10 | 774 | NM | NM | 46.6 | 17.2 | 12.6 | 9.5 | (4.1) | (1.8) | 1.8 | 0.8 | 0.0 | 51.0 | 0.8 | 6.6 |
| Hellenic Petroleum (EUR) | HEPr.AT | Sell | 5.72 | 1,329 | 10.9 | 11.8 | 7.2 | 8.0 | 12.8 | 8.4 | 6.4 | 5.8 | 9.4 | 0.7 | 7.9 | 105.6 | 1.4 | 9.5 |
| Tupras (TL) | TUPRS.IS | Neutral | 42.20 | 18,540 | 17.6 | 9.6 | 10.1 | 7.6 | 7.7 | 7.7 | 14.3 | 24.6 | 22.0 | 2.3 | 7.9 | (15.8) | 4.8 | 35.3 |
| Motor Oil Hellas (EUR) | MORr.AT | Neutral | 5.88 | 495 | 8.2 | 5.0 | 5.2 | 7.6 | 6.0 | 5.5 | 20.5 | 26.5 | 20.6 | 1.2 | 9.6 | 206.5 | 0.8 | 10.1 |
| **Europe median** | | | | | **9.4** | **8.5** | **8.9** | **7.1** | **6.0** | **5.3** | **5.7** | **5.2** | **8.3** | **0.8** | **3.9** | **36.6** | **1.3** | **10.1** |

** Conviction List*

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*Source: Company data, Goldman Sachs Research estimates*

## Exhibit 29: Global Integrated oil valuation comps table

As of February 01, 2012

| | Ticker | Rating | Price Feb 1 | Mkt cap (US$mn) | EV/DACF (X) 2010 | EV/DACF (X) 2011E | EV/DACF (X) 2012E | P/E (X) 2010 | P/E (X) 2011E | P/E (X) 2012E | CROCI (%) 2010 | CROCI (%) 2011E | CROCI (%) 2012E | Yield (%) | Net Debt/ Equity (%) | Reserves US$/boe | 2011E P/BV (X) | EV/PV-10 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **International majors** | | | | | | | | | | | | | | | | | | |
| BP plc (US$) | BP | Neutral | 45.55 | 143,756 | 10.5 | 6.5 | 5.9 | 7.0 | 6.9 | 6.6 | 6.3 | 10.5 | 10.7 | 3.7 | 33 | 15.4 | 1.3 | 2.4 |
| Chevron (US$) | CVX | Neutral | 102.79 | 204,523 | 6.3 | 5.0 | 4.7 | 11.0 | 7.8 | 7.1 | 15.5 | 17.3 | 16.2 | 3.0 | (7) | 17.4 | 1.7 | 2.7 |
| Exxon Mobil (US$) | XOM | Buy* | 83.97 | 389,075 | 9.0 | 6.8 | 6.3 | 13.5 | 9.8 | 8.8 | 13.6 | 15.8 | 15.2 | 2.2 | 6 | 17.7 | 2.5 | 3.4 |
| Royal Dutch Shell (US$) | RDSa | Buy* | 72.23 | 221,295 | 7.7 | 5.9 | 4.8 | 11.9 | 9.1 | 7.4 | 10.2 | 12.4 | 13.7 | 4.7 | 17 | 25.9 | 1.4 | 7.3 |
| Total SA (EUR) | TOTF.PA | Sell | 40.45 | 118,960 | 5.6 | 5.8 | 5.3 | 8.8 | 7.9 | 7.1 | 11.3 | 10.4 | 11.1 | 5.6 | 23 | 18.7 | 1.4 | 4.2 |
| **International majors median** | | | | | **7.7** | **5.9** | **5.3** | **11.0** | **7.9** | **7.1** | **11.3** | **12.4** | **13.7** | **3.7** | **17** | **17.7** | **1.4** | **3.4** |
| **Regional majors** | | | | | | | | | | | | | | | | | | |
| ConocoPhillips (US$) | COP | Neutral | 69.32 | 103,110 | 7.1 | 5.4 | 5.1 | 11.7 | 7.9 | 7.5 | 10.7 | 13.8 | 13.1 | 3.8 | 26 | 13.5 | 1.5 | 3.1 |
| ENI (EUR) | ENI.MI | Buy | 17.14 | 81,698 | 5.5 | 5.6 | 4.8 | 9.0 | 9.0 | 7.5 | 11.3 | 10.8 | 12.1 | 6.1 | 50 | 20.5 | 1.1 | 2.8 |
| Occidental (US$) | OXY | Buy | 99.30 | 81,698 | 9.2 | 7.0 | 5.5 | 17.4 | 11.8 | 9.9 | 15.9 | 18.5 | 20.2 | 1.8 | 4 | 25.5 | 2.1 | 3.3 |
| Marathon (US$) | MRO | Neutral | 31.58 | 19,677 | 4.8 | 4.1 | 4.1 | 8.7 | 8.9 | 7.7 | 10.7 | 14.2 | 14.5 | 2.5 | 30 | 18.2 | 1.2 | 4.6 |
| **Regional majors median** | | | | | **6.3** | **5.5** | **4.9** | **10.4** | **8.9** | **7.6** | **11.0** | **14.0** | **13.8** | **3.2** | **28** | **19.4** | **1.4** | **3.2** |
| **Russian/Lat Am oils** | | | | | | | | | | | | | | | | | | |
| Gazprom (US$) | GAZPq.L | Buy | 12.40 | 145,700 | 4.1 | 3.3 | 2.9 | 4.4 | 3.7 | 3.5 | 12.9 | 13.7 | 13.1 | 4.1 | 10 | 1.3 | 0.6 | NA |
| Rosneft (US$) | ROSN.RTS | Buy | 7.50 | 71,985 | 5.3 | 4.5 | 4.2 | 6.9 | 6.7 | 6.9 | 16.0 | 15.3 | 13.5 | 1.3 | 13 | 3.5 | 1.1 | NA |
| Surgutneftegaz (US$) | SNGS.RTS | Buy | 0.88 | 38,217 | 2.4 | 2.2 | 2.1 | 9.0 | 7.6 | 9.7 | 13.1 | 12.2 | 10.9 | 2.2 | (46) | 1.9 | 0.8 | NA |
| Gazprom Neft (US$) | SIBN.RTS | Neutral | 4.59 | 4,331 | 1.6 | 1.1 | 0.7 | 1.4 | 0.8 | 0.7 | 13.6 | 16.9 | 16.2 | 29.0 | 19 | 1.0 | 0.2 | NA |
| Petrobras (US$) | PBR | Buy | 31.16 | 136,700 | 5.0 | 6.9 | NA | 5.8 | 5.8 | 6.7 | 12.9 | 8.5 | 7.4 | 1.1 | 32 | 26.2 | 0.6 | 2.6 |
| **Russian median** | | | | | **4.1** | **3.3** | **2.5** | **5.8** | **5.8** | **6.7** | **13.1** | **13.7** | **13.1** | **2.2** | **17** | **17.7** | **0.6** | **NA** |
| **Asian oils** | | | | | | | | | | | | | | | | | | |
| CNOOC (HK$) | 0883.HK | Buy | 15.98 | 92,029 | 7.1 | 5.4 | 5.5 | 10.7 | 8.4 | 8.5 | 26.9 | 27.8 | 23.6 | 4.6 | (17) | 32.0 | 2.2 | 2.5 |
| ONGC (Rs) (a) | ONGC.BO | Buy* | 272 | 47,435 | 6.6 | 5.6 | 4.5 | 10.7 | 8.0 | 6.7 | 12.7 | 13.2 | 14.2 | 3.2 | (21) | 6.4 | 1.7 | NA |
| PetroChina 'H' share (HK$) | 0857.HK | Neutral | 11.40 | 269,063 | 6.8 | 7.8 | 6.2 | 12.1 | 12.1 | 9.3 | 15.2 | 12.1 | 13.5 | 3.7 | 25 | 14.8 | 1.7 | 1.5 |
| PTT (Bt) | PTT.BK | Neutral | 339 | 30,901 | 9.7 | 8.4 | 6.7 | 12.8 | 9.0 | 7.9 | 13.3 | 14.5 | 15.3 | 3.3 | 60 | 41.2 | 1.7 | NA |
| Sinopec 'H' share (HK$) | 0386.HK | Buy* | 9.44 | 106,872 | 4.4 | 6.0 | 5.1 | 9.2 | 8.4 | 6.8 | 20.5 | 13.3 | 14.0 | 2.9 | 43 | 37.0 | 1.4 | 2.6 |
| Reliance (Rs) (a) | RELI.BO | Buy | 831 | 55,318 | 10.5 | 7.9 | 7.3 | 13.6 | 12.7 | 10.9 | 11.0 | 11.7 | 11.7 | 1.0 | (5) | NA | 1.4 | NA |
| **Asian oils median** | | | | | **7.0** | **6.9** | **5.9** | **11.4** | **8.7** | **8.2** | **14.2** | **13.3** | **14.1** | **3.3** | **10** | **32.0** | **1.7** | **2.5** |
| PetroChina 'A' share (Rmb) | 601857.SS | Neutral | 10.18 | 295,384 | 7.4 | 8.4 | 6.7 | 13.3 | 13.3 | 10.2 | 15.2 | 12.1 | 13.5 | 3.4 | 25 | 16.0 | 1.8 | 1.9 |
| Sinopec 'A' share (Rmb) | 600028.SS | Buy | 7.79 | 108,423 | 4.4 | 6.1 | 5.1 | 9.3 | 8.6 | 6.9 | 20.5 | 13.3 | 14.0 | 2.9 | 43 | 37.4 | 1.4 | 3.0 |
| **Emerging market median** | | | | | **5.3** | **5.6** | **4.8** | **9.2** | **8.0** | **6.9** | **13.3** | **13.3** | **13.5** | **3.2** | **13** | **10.6** | **1.4** | **2.6** |

** Conviction List*

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*Source: Company data, Goldman Sachs Research estimates*

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We, Nilesh Banerjee, Arjun N. Murti, Henry Morris, Rosa Kim, Patrick Tiah, CFA, Mark Wiseman and Tommy Wong, hereby certify that all of the views expressed in this report accurately reflect our personal views about the subject company or companies and its or their securities. We also certify that no part of our compensation was, is or will be, directly or indirectly, related to the specific recommendations or views expressed in this report.

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