

Industries Qatar

Overweight

Target price (QAR)	210.00
Share price (QAR)	161.30
Potential total return (%)	30.2

Dec	2006a	2007e	2008e
HSBC EPS	7.24	9.97	12.05
HSBC PE	22.3	16.2	13.4
Performance	1M	3M	12M
Absolute (%)	16.2	11.3	17.5
Relative ^a (%)	-8.1	-11.9	24.7

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Hassan Ahmed

Analyst

HSBC Securities (USA) Inc.

+1 212 525 5359

hassan.ahmed@us.hsbc.com

Sriharsha Pappu, CFA

Analyst

HSBC Securities (USA) Inc.

+1 212 525 7959

sriharsha.pappu@us.hsbc.com

View HSBC Global Research at:
<http://www.research.hsbc.com>

Issuer of report: HSBC Securities
(USA) Inc

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Holding firm through the cycle; initiating at Overweight

- **Each of IQ's operating segments face peak or near-peak operating conditions through 2008-2009, in our opinion**
- **The current share price offers an opportunity to invest in what we regard as an undervalued, best-in-class chemical company, even for foreign investors**
- **We are initiating coverage of Industries Qatar shares with a 12-month target price of QAR210 and an Overweight rating**

Industries Qatar (IQ) is essentially a holding company that consists of four separate business lines: fertilizers (39% of 2007 operating income), petrochemicals (32%), steel (24%), and fuels (5%). While the drivers of robust demand growth in each of these segments are different – ranging from strong demand in the biofuels end-market and grain shortages to domestic construction – we believe that each segment is facing peak or near-peak conditions through 2008-09.

Furthermore, while we see a cyclical dip over the next five years, continuing capacity expansions at IQ – 104% growth cumulatively in capacity across all its business lines from 2007-2012e – should compensate to a large extent for the cyclical dip. We forecast roughly flattish EBITDA for IQ for 2009-2012, as capacity additions and cost advantage should blunt the impact of cyclical dip. IQ's net income margins have averaged 46.8% over the last five years. This profitability profile is unmatched in most industries, let alone in the global chemical sector, where 10-12% margins are considered healthy. IQ's profitability profile is even superior to that of SABIC, which has a similar cost advantage.

While global chemical investors have interest in participating in the boom in cost-advantaged capacity taking place in the Middle East, investment access has always been an issue for a variety of reasons, be it government controls, lack of liquidity, or a ban on foreign participation. IQ is one of the few companies in the region that provides investment access to global investors, with foreigners allowed to invest in the stock, subject to a limit of 25% ownership of the company. The current IQ stock price offers an opportunity to invest in what we regard as an undervalued, best-in-class chemical company that has an unmatched global cost position and that is approaching a period of sustainable peak earnings across its business lines. We are initiating coverage of Industries Qatar shares with an Overweight rating and a 12-month target price of QAR210.

Index ^a	DSM 20 INDEX
Index level	10,062
RIC	IQCD.QA
Bloomberg	IQCD QD

Source: HSBC

Free float (%)	30
Market cap (USDm)	22,156
Market cap (QARm)	80,650

Source: HSBC

Chemical companies valuation summary (USD)

	APD	BRKM5*	CE	DD	DOW	GGC	HUN	IQCD**	MEOH	NCX	PX	SABIC***	WLK
Current Price (as of 2/25/2008)	96	15	41	47	39	6	24	161	27	31	84	186	17
Ratings: (V) = Volatile	N	O (V)	O	O	O	U (V)	U	O	O	N	O	O	U
Target price	105	23	48	55	55	4	15	210	35	30	100	260	14
Target price set on	12/10/07	9/17/07	11/5/07	11/27/06	3/20/07	1/18/07	11/20/06	2/27/08	10/15/07	1/18/07	12/10/07	1/18/07	1/18/07
Upside/(downside) to target price	10%	59%	16%	17%	41%	-38%	-38%	30%	28%	-3%	19%	40%	-18%
HSBC normal valuation													
Trend EPS	4.90	1.45	1.75	2.89	2.59	1.74	0.93	NA	2.41	2.25	4.25	NA	1.53
Trend relative PE	1.21	0.90	1.05	0.98	1.11	0.81	0.90	NA	0.81	0.81	1.31	NA	0.81
Normal S&P 500 PE	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8
Normal value	105	23	33	50	51	25	15	NA	35	32.44	99	NA	22
Upside/(downside)	10%	60%	-21%	7%	31%	292%	-38%	NA	27%	5%	18%	NA	30%
1 standard deviation	NA	41%	45%	17%	40%	50%	41%	NA	50%	50%	NA	NA	50%
Peak PE (1 year prior to 88 peak)	NA	NA	NA	8.4	7.1	4.1	4.8	NA	NA	4.1	NA	NA	4.1
Peak PE (1 year prior to 95 peak)	NA	NA	8.0	24.1	7.9	8.2	5.3	NA	5.9	8.2	NA	NA	8.2
HSBC floor valuation													
Floor valuation	NA	14	18	42	31	13	9	NA	17	16	NA	NA	11
Upside/(downside) to floor	NA	-5%	-56%	-11%	-21%	96%	-64%	NA	-36%	-47%	NA	NA	-35%
Recent low	NA	10.01	14	36	25	11	17	NA	1	16	NA	NA	15
Timing of recent low	NA	Jul-07	Apr-05	Sep-02	Sep-00	Oct-07	Jun-06	NA	Apr-00	Oct-01	NA	NA	Aug-04
HSBC peak valuation													
HSBC EPS 2008	4.95	1.60	3.75	3.50	3.30	(1.00)	1.40	12.05	2.80	2.60	4.25	11.65	1.40
Implied peak valuation - 87 PE	NA	NA	NA	29	23	NA	7	NA	NA	11	NA	NA	6
Implied peak valuation - 94 PE	NA	NA	30	84	26	NA	7	NA	17	21	NA	NA	11
Upside/(downside) to 88 peak valuation	NA	NA	NA	-37%	-40%	NA	-72%	NA	NA	-65%	NA	NA	-66%
Upside/(downside) to 95 peak valuation	NA	NA	-27%	79%	-33%	NA	-69%	NA	-39%	-31%	NA	NA	-32%
Consensus implied peak valuation													
Consensus EPS 2008	4.92	1.19	3.66	3.41	3.49	(0.81)	1.39	NA	2.62	3.15	4.17	7.92	1.60
Implied peak valuation - 87 PE	NA	NA	NA	29	25	NA	7	NA	NA	13	NA	NA	7
Implied peak valuation - 94 PE	NA	NA	29	82	28	NA	7	NA	15	26	NA	NA	13
Upside/(downside) to 88 peak valuation	NA	NA	NA	-39%	-36%	NA	-72%	NA	NA	-58%	NA	NA	-61%
Upside/(downside) to 95 peak valuation	NA	NA	-29%	75%	-29%	NA	-69%	NA	-43%	-16%	NA	NA	-23%
HSBC DCF valuation													
DCF	100	24	29	51	44	18	22	190	35	34	80	225	20
Upside/(downside)	4%	66%	-30%	8%	12%	175%	-9%	18%	26%	12%	-5%	21%	17%

* In BRL.

** In QAR.

*** In SAR.

Source: Company reports, FirstCall, HSBC

Contents

Investment thesis	4
Competitive landscape	10
IQ: Company profile	20
Fertilizers and QAFCO	25
Qatar Steel	38
Petrochemicals and QAPCO	45
Fuels and QAFAC	53
IQ's real estate venture	63
Valuation and sensitivity	66
Risks	71
Financial models	73
Glossary of terms	76
Disclosure appendix	84
Disclaimer	87

Investment thesis

Multiple business lines, concurrent peak conditions

Industries Qatar (IQ) is essentially a holding company that consists of four separate business lines: fertilizers, petrochemicals, steel, and fuels.

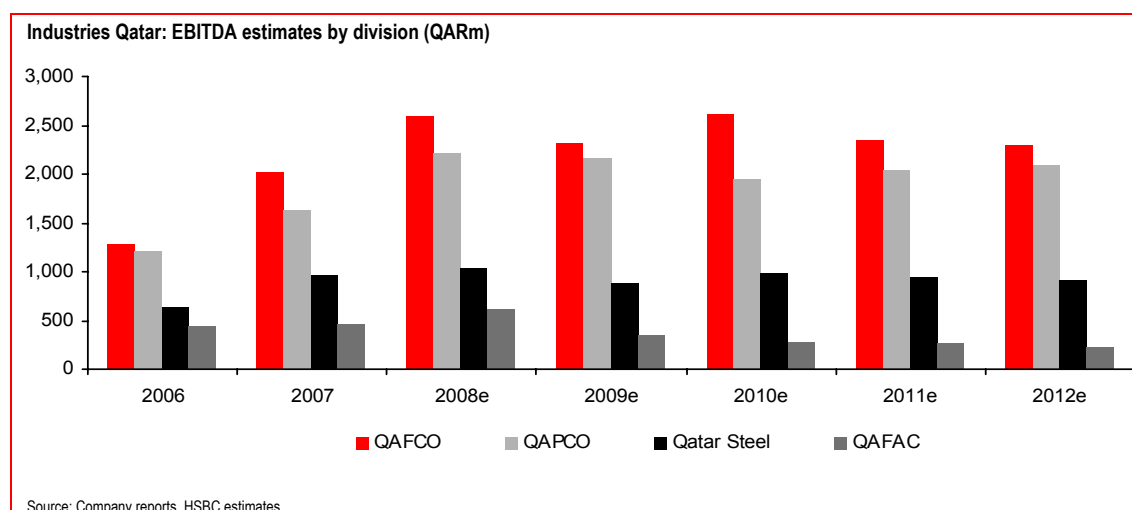
The businesses – Qatar Fertilizer Company, or QAFCO; Qatar Petroleum Company, or QAPCO; Qatar Steel; and Qatar Fuel Additives Co., or QAFAC – were set up with the objective of diversifying Qatar’s economic and industrial base, while exploiting the country’s hydrocarbon reserves, and with the exception of Qatar Steel, they have an exceptional cost position relative to their global peers.

While the drivers of robust demand growth in each of the segments is different – ranging from biofuels and grain shortages to domestic

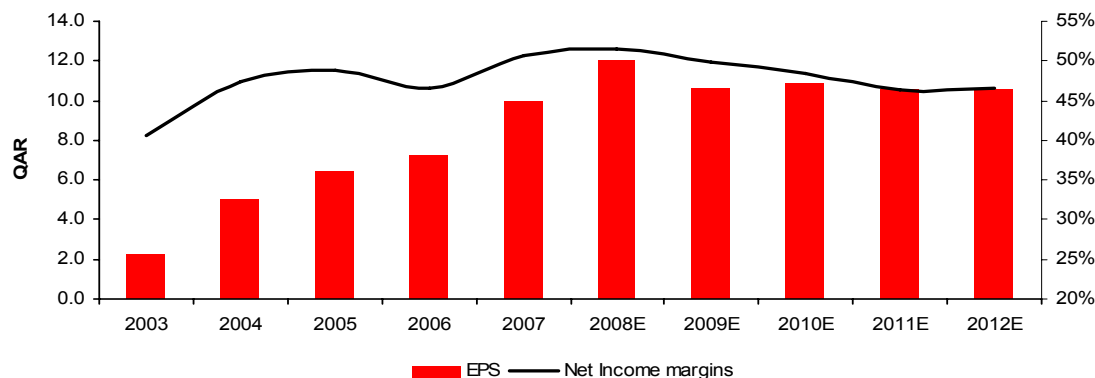
construction – we believe that each of the segments that IQ operates in is facing peak or near-peak conditions through 2008-09.

Furthermore, while we see a cyclical dip over the next five years, the continuing capacity expansions at IQ should compensate to a large extent for the cyclicality. As the chart at the bottom of this page shows, we are forecasting roughly flattish EBITDA for IQ for 2009-2012, as ongoing capacity additions and cost advantage should blunt the impact of cyclicality.

We view the current stock price as an opportunity to pick up what we regard as an undervalued, best-in-class chemical company with an unmatched global cost position approaching a period of sustainable peak earnings across its business lines.



Industries Qatar: Net income margins and EPS



Source: Company reports, HSBC estimates

Unmatched profitability profile driven by a sustainable cost advantage

IQ has averaged net income margins of 46.8% over the last five years. While some portion of this is undoubtedly due to the tax structure, the fact remains that this profitability profile is unmatched in most industries, let alone the chemical sector, where 10-12% margins are considered healthy. IQ's profitability profile is even superior to that of Saudi Basic Industries Corp. (SABIC) – a company with a similar cost advantage – the reason being that IQ is concentrated in cost-advantaged facilities in Qatar, while SABIC, being more diverse, has a mix of non-advantaged facilities in Europe and now the US, as well.

The driver of this solid profitability profile for IQ is undoubtedly in its cost-advantaged feedstock supply arrangements with Qatar Petroleum. The question that we are asked most by investors looking at Middle Eastern petrochemical companies pertains to the sustainability of this cost-advantaged feedstock supply going forward.

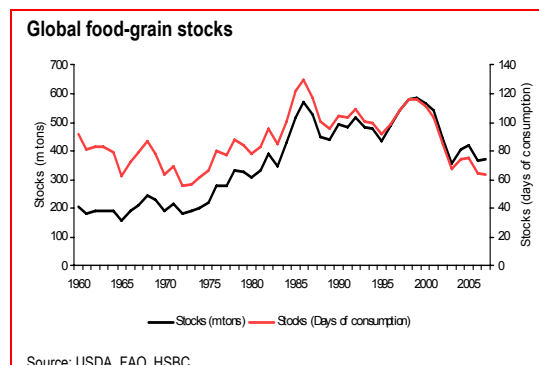
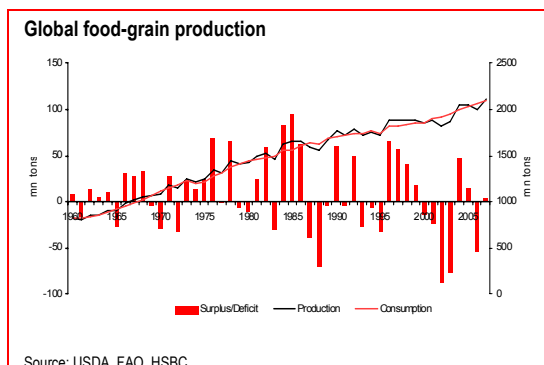
While there is little clarity available on the length of the contracts, we know that the QAFCO gas supply contract is valid until 2019, but we have little information on similar contracts for QAPCO

and QAFAC. We would argue that the basic premise for IQ's existence is to diversify the country's economic base, while exploiting its hydrocarbon resources. We would also argue that IQ remains a crucial element in Qatar's economic development plan. Since its establishment, IQ has been very effective in meeting the strategic goals set for it, and this record limits the risk of erosion in its industrial position, especially from internal sources.

Given that the Qatari government still owns 70% of the company through QP, and that all of IQ's subsidiaries are aggressively ramping up capacity over the next couple of years, we would be surprised if the cost-advantaged gas contracts were to change significantly at any time in the future. We expect the cost advantage relative to global producers to remain at historical levels and perhaps even expand if energy prices remain at current levels over a sustained period.

Strong global fertilizer outlook

Among all of IQ's varied businesses, we are most bullish on the medium- to longer-term demand outlook for nitrogenous fertilizers: ammonia and urea. QAFCO is already among the largest urea producers in the world, and with the start-up of its QAFCO – V plant in 2010, will have an estimated 5.3% share of global urea capacity at that time.



The global demand picture for food grains has never looked stronger, with the United Nations expecting demand to grow at 1.6% through 2020, on the back of a growing global population and increased urbanization. With the supply of arable land for cultivation expected to remain broadly fixed, the growth in demand needs to be met by increased agricultural productivity: better farming methods and enhanced use of agricultural inputs such as seeds, crop protection chemicals, and most important, fertilizers. While 2007 global food-grain production, at 2.1bn tons, was the third-highest volume ever recorded, it still only just equalled consumption and left food-grain stocks unchanged.

With food-grain deficits in six of the last eight years, grain stocks as a percentage of consumption are currently at their lowest levels in 30 years. The outlook for food grains is also influenced by strong consumption in rapidly developing countries, such as China and India, with steady increases in population and continued strong economic growth contributing to increased demand for food grains and a rapid increase in grain prices. The rule of thumb, according to the Earth Policy Institute, is that levels of grain stocks at less than 60 days of consumption are a signal for an increase in food-grain prices.

The combination of demographic-driven, strong global consumption demand, low food stocks, and constraints on arable land are likely to place

pressure on food resources and increase demand for yield-enhancing measures. The pressure that food-grain production constraints will place on prices should provide farmers incentives to increase their spending on better seeds and fertilizers.

We believe that global population growth demographics point toward a multiyear cyclical peak in terms of food-grain demand, which cannot be met by increasing cultivation alone, given the finite amount of arable land. With low levels of global food-grain stocks underpinning growth in food-grain prices, the use of fertilizers to supplement grain production is likely to see a sustained period of growth, in our opinion.

The surge in US ethanol demand is another factor driving global fertilizer demand. The effects of corn's being diverted to ethanol production in the US are not limited to that country alone, with the ripple effects influencing grain consumption and trade patterns across the world. The US is the largest producer of corn in the world – it accounts for about 45% of global production and more than 70% of global exports – and a diversion in the corn crop toward ethanol affects planting patterns and grain prices and consequently fertilizer demand globally.

Given the backdrop of strong demand growth underpinned by low grain stocks, food demand, and biofuels, we believe that low-cost producers such as QAFCO will continue to generate very

strong earnings over the next few years. We believe that the strongest period for QAFCO in terms of earnings is 2008-2010. We estimate that QAFCO will continue to be the largest contributor to IQ's earnings for the forecast period, and that the strength in the fertilizer business should offset some of the cyclical weakness in other segments such as petrochemicals and steel.

Robust near-term outlook for petrochemicals and steel

In the petrochemicals segment, we expect global ethylene capacity to grow at an annual average rate of 5.6% over the next five years, versus our expectation of global demand growth of 3.9%. This should result in a decline in ethylene operating rates from 92% in 2007 to 86% in 2011. In line with our ethylene operating rate forecast, we expect to see ethylene margins decline slightly in 2008 on a year-on-year basis and to march toward a trough thereafter, with trough margins being attained by 2010-2011.

In this environment, we would expect the low-cost Middle Eastern producers, such as SABIC and IQ, to continue to generate healthy margins, albeit with a slight declining trend. As long as energy prices remain high, the price-setters will continue to be the marginal producers in North America and Western Europe, we expect.

As far as the steel segment is concerned, Qatar has had a construction boom much like that in the rest of the Middle East, with several large and small projects throughout the country. The main factors driving this boom are a windfall from the elevated energy-price environment, high population growth, and rapid industrial expansion in both energy and non-energy sectors.

The Qatari government estimates that gross output for the building and construction market grew at an average annual rate of 30% between 2000 and 2005, and while this data is at least two years old,

anecdotal evidence suggests few signs of any slowdown in construction. The construction boom has also been helped by a very high level of public expenditure, as the government of Qatar has decided to use strong oil revenues to revamp infrastructure throughout the country. Steel demand in the region is dominated by long products, which are primarily used in the construction industry.

While we expect to see a sharp decline in steel pricing in 2009-10, we believe that domestic demand for steel in Qatar is likely to remain strong, and that the capacity being added by QASCO through 2010 will be absorbed by the domestic market for the most part. We expect to see increased capacity and higher sales volumes offset margin and pricing declines in steel to a large extent for QASCO, and we are forecasting that EBITDA will remain fairly stable in the QAR900m-1bn range through 2012.

Investment access a key advantage

While several global chemical investors have interest in participating in the boom in cost-advantaged capacity taking place in the Middle East, investment access has always been an issue for a variety of reasons, be it government controls, lack of liquidity, or a ban on foreign participation. IQ is one of the few companies in the region that provides investment access to global investors with foreigners being able to invest in the stock, subject to a limit of 25% ownership of the company.

Given its distinctive position in terms of investment access complementing its cost advantage and capacity growth, we believe that IQ will emerge as the focal point for global investors looking to play the basic chemicals and fertilizers cycle. IQ is also unusual in that unlike other chemical investment opportunities, we

believe it has a sustainable cost advantage, which allows it to damp the cyclicalities of the industries that it serves. Given its advantaged investment access vis-à-vis SABIC, we would consider IQ to be a core holding in a global basic chemical portfolio.

Valuation

Replacement value analysis

For IQ, we base our target price on a replacement value approach, supplemented by a sum-of-the-parts analysis, given that IQ is essentially a holding company with diverse business interests. For our replacement value analysis, we define replacement value as the cost associated with setting up a greenfield, world-scale facility to produce a particular chemical product. Using production capacities and our estimate of costs associated with building greenfield facilities for the various products in IQ's portfolio, we arrive at a replacement value for the company.

We arrive at IQ's target price via a two-step process. First, on a bottom-up basis, we evaluate the replacement value for each product within IQ's portfolio, which totals QAR60.2bn or QAR120 per share. This analysis, however, is incomplete without layering on the value of IQ's feedstock advantage. In the second step of our replacement value analysis, we carry out a DCF analysis around IQ's feedstock advantage.

Using these data on cost-advantaged raw-material consumption and price, and comparing them to the costs of feedstock for marginal producers, we can come up with a value for the feedstock advantage in a given year, and performing a discounted cash flow analysis around this advantage helps us arrive at a valuation for this cost advantage. We estimate that this advantage is valued at QAR43.1bn or QAR87 per share.

Adding the replacement value to the feedstock advantage value gives us our base-case replacement valuation for IQ, which is QAR207 per share. Our replacement value methodology is described in more detail in the valuation section of this report.

Sum-of-the-parts analysis

Given IQ's holding company structure, there are established global peers with trading histories and consensus estimates for business lines that one can use to derive a sum-of-the-parts (SOTP) analysis for IQ. For the purposes of our SOTP analysis, we identify peer groups for each industry segment and apply a premium to the forward trading multiple for that group to account for the higher profitability profile of IQ's business units.

For QAPCO, we believe that the true comparisons are those companies using ethane gas as their primary feedstock, and among these, the Middle Eastern producers such as SABIC, Sahara, and Saudi International Petrochemicals (SIPCHEM) represent the most direct peer group.

Industries Qatar: Sum-of-the-parts valuation

Division	IQ's stake	Peer group forward PE	Premium	Applied multiple	2008e net income
QAFCO	75%	17.8	30%	23.2	3,003
QASCO	100%	13.5	0%	13.5	844
QAPCO	80%	10.9	25%	13.6	2,700
QAFAC	50%	11.9	15%	13.7	1,085
Consolidated peer group 1-year forward PE		17.4			
No. of shares		500	m		
HSBC 2008e EPS		12.05	QAR		
Implied SOTP IQ valuation		209	QAR per share		

Source: Company reports, HSBC estimates

However, we do not have consensus estimates for Sahara and SIPCHEM, and we are forced to use North American ethane-based producers such as Nova and Westlake to arrive at a median forward multiple.

For QAFCO, we have used a peer group of global fertilizer majors, keeping in mind that none of them has a cost advantage or profitability profile that compares to QAFCO. For QAFAC, we use Methanex, SIPCHEM, and China Blue as peers. For QASCO, we believe that the peer-group companies should be of a similar size in terms of steel capacity and should not be integrated into iron ore.

Applying a fairly conservative premium to the median multiples, given the vast gulf in profitability between IQ and its various peer group companies, we arrive at a sum-of-the-parts valuation of about QAR209 per share. We use the replacement value and SOTP to arrive at our target price for the stock of QAR210 per share, which implies an Overweight rating based on our research model. (For a full discussion, please see the Valuation section later in this report.)

It is worth keeping in mind that an SOTP analysis that gave a zero premium to any of IQ's businesses over its peer group would yield a valuation of QAR170 per share, still above the stock's current trading level. The implication is that IQ, despite its cost advantage and profitability profile, trades at a discount to its global peer group, which is clearly not justified, in our opinion.

We view the current stock price as an opportunity to pick up an undervalued, best-in-class chemical company with an unmatched global cost position approaching a period of sustainable peak earnings across its business lines. We are initiating coverage of IQ shares with an Overweight rating and a 12-month target price of QAR210.

Risks

The downside risks that we see include an energy price correction, cyclicalities, gas supply for further expansion, increased domestic competition, longevity of supply contracts and tariffs, and operating risks. (For a full discussion of these, please see the Risks section later in this report.)

Competitive landscape

Qatar profile

Qatar is one of the smallest of the Middle Eastern states, occupying an area of about 11,500 square kilometers bordering Saudi Arabia and the Persian Gulf. Qatar attained independence in 1971, after having been a British protectorate from 1916, and is currently ruled by Emir Hamad bin Khalifa Al-Thani. Qatar also has one of the smallest populations in the Middle East, with roughly 750,000 inhabitants, a fraction of Saudi Arabia's population base of 24m or of Iran's population base of 68m. Of Qatar's population of 0.75m, an estimated 75% is made up of expatriates, largely foreign workers and their families.

Qatar, similar to the other Gulf nations, has an economy that is primarily dependent on its hydrocarbon reserves. Qatar has a relatively small oil reserve base relative to the rest of the Middle East, at an estimated 15.2bn bbls of proved crude oil reserves, which places it sixth among Middle Eastern countries and ninth on the OPEC list. However, the key to Qatar's hydrocarbon wealth lies in its natural gas reserves, which are estimated at 910trn standard cubic feet (scf), placing it third

globally in terms of natural gas reserves behind Russia and Saudi Arabia. If one were to include both crude oil and natural gas equivalents, in terms of hydrocarbon reserves Qatar ranks third globally behind Saudi Arabia and Iran and is far and away the wealthiest nation in terms of per capita hydrocarbon wealth.

The Qatar economy has been booming over the last few years on the back of strength in global oil prices, with nominal GDP growth averaging 23% and real GDP growth about 8.2% since 2001 (see the table at the bottom of this page). The oil and gas sector accounts for an estimated 65% share of Qatar's GDP, underlining the importance of the sector to the country's economy.

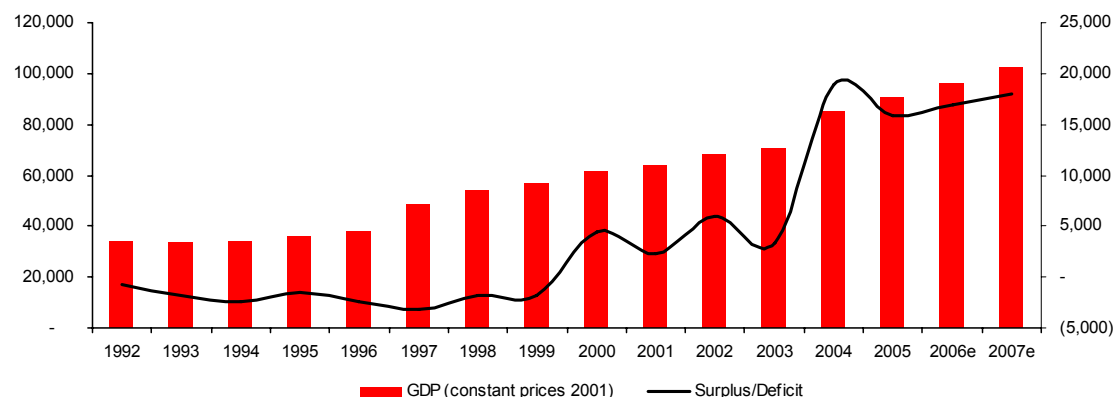
Qatar maintains a currency peg to the US dollar at 3.64 QAR per USD. This practice has come under increased scrutiny recently because of very strong inflationary trends in the country. Given rising inflation on the back of increased liquidity and investments, the Central Bank of Qatar is finding it increasingly difficult to cut interest rates in line with the policies of the US Federal Reserve – necessary to maintain the currency peg.

Qatar: Economic indicators

	2001	2002	2003	2004	2005	2006	2007
GDP (USDbn) at current prices	17.5	19.4	23.5	31.7	42.5	52.7	60.6
Real growth (%)	3.3	7.1	3.5	20.8	6.1	6.2	6.4
Inflation (%)	1.4	1	2.3	6.8	8.8	11.9	12.5
Gross fiscal balance (% GDP)	5.1	10.10	8.5	16	14.4	12.5	12.3
Current account (USDbn)	4.2	3.80	5.80	7.6	7.1	9.3	9.9
% GDP	23.7	19.7	24.4	23.8	16.6	17.7	16.4
Exchange rate (USD)	3.64	3.64	3.64	3.64	3.64	3.64	3.64

Source: QCB, IMF, HSBC estimates

Qatar: GDP and budget surplus/deficit (QARm)



Source: Qatar General Secretariat for Development Planning, HSBC

Hydrocarbon assets: The North Gas field

State-owned Qatar Petroleum (QP) is responsible for all oil and gas activities in the country. Qatar's hydrocarbon assets primarily consist of the onshore Dukhan Field, two offshore oil fields – Bul Hanine and Maydan Mahzam – and the North Gas field (also known as the North Dome). Oil production in the country is estimated at 835,000 barrels per day (bpd) and is expected to reach 1.1m bpd by 2009. At the forecast rate of production, this places the life of the oil reserves at about 40 years.

The main source of hydrocarbon reserves, as mentioned earlier in this report, lies in Qatar's natural gas deposits, which are concentrated in the North Gas field. This field was discovered in 1971

off the northeast coast of Qatar. However, given the focus on the search for crude oil and the undeveloped markets for natural gas, the significance of the discovery was not evident at that time. It was only after several appraisal wells had been drilled by the mid-1980s that it became clear that the North Gas field was one of the largest non-associated natural-gas deposits in the world.

With estimated recoverable reserves of more than 900trn scf, the field contains roughly 14% of the world's known reserves of natural gas. The North Gas field represents approximately 10% of the world's known reserves. It is contiguous with and geologically the same as the South Pars field, which is located in Iranian waters and is the major source of Iran's gas reserves.

Qatar: Oil and gas reserves

Crude oil	Billion bbls	Natural gas	Trillion scf
Saudi Arabia	264.3	Russia	1680.0
Iran	137.5	Iran	974.0
Iraq	115.0	Qatar	910.5
Kuwait	101.5	Saudi Arabia	239.5
United Arab Emirates	97.8	United States	204.4
Qatar	15.2	UAE	198.5
Other Middle East	11.5	Nigeria	181.9
Total Middle East	742.7	Total global	6405.5

Source: BP World Statistical Handbook, EIA, Oil and Gas Journal, HSBC

Qatar: Gas development strategy

When we assess the competitive landscape for Industries Qatar (IQ), we believe that while one must necessarily address the competitive dynamic for the various product classes – fertilizers, petrochemicals, and fuels – both globally and in the Middle East, it is also appropriate to examine the competing pulls for access to Qatar's hydrocarbon reserves from various investment alternatives.

Typically, a range of investments is available to companies looking to monetize stranded gas reserves with petrochemical industry development through ethylene crackers and downstream units, liquefied natural gas (LNG) facilities focused on export markets, and the rapidly developing gas-to-liquids (GTL) technology being the most prevalent. Not all of these strategies are mutually exclusive, though, as ethane and higher natural gas liquids, which are feedstocks for producing ethylene, can be stripped from natural gas before the gas is used as LNG or as an input into GTL.

The choice of whether to go with LNG or GTL investments or petrochemical projects is as much a question of strategy as it is economics. The rates of return on LNG and GTL projects are highly

sensitive to product off-take assumptions and need to build in the significantly higher capital intensity of these kinds of projects. Ethylene plants, on the other hand, are far less capital-intensive than LNG and GTL facilities, and crackers coming on stream in the Middle East are among the lowest-cost producers in the world and would be competitive over a range of energy costs.

However, ethylene crackers are more suited to associated gas finds, with non-associated gas better exploited by heavier volume uses such as LNG. This is because roughly 80% of natural gas consists of methane, which, unlike ethane, is not used as a petrochemical feedstock. Given the sheer volume of gas reserves that Qatar possesses, the thrust of the country's natural gas development has been focused on LNG – with Qatar expected to be the largest exporter of LNG globally by 2010, accounting for more than 30% of global LNG trade. The table at the bottom of this page lists Qatar's existing and planned LNG projects.

In general, while butane and propane are extracted from the LNG facilities in Qatar, ethane is not. This is because, while butane and propane both have liquid global markets, the extraction of

Qatar: LNG projects

Company - Train	Ownership	LNG (m tons/year)	Gas requirement (Bcf/yr)	Export destination
QatarGas 1 - Train 1	QP (65%) ExxonMobil (10%), Total (10%), Mitsui (7.5%) Marubeni (7.5%)	3.20	160	Japan and Spain
QatarGas 1 - Train 2	QP (65%) ExxonMobil (10%), Total (10%), Mitsui (7.5%) Marubeni (7.5%)	3.20	160	Japan and Spain
QatarGas 1 - Train 3	QP (65%) ExxonMobil (10%), Total (10%), Mitsui (7.5%) Marubeni (7.5%)	3.20	160	Japan and Spain
QatarGas 2 - Train 4	QP (70%), ExxonMobil (30%)	7.80	380	United Kingdom
QatarGas 2 - Train 5	QP (65%), ExxonMobil (18.3%), Total (16.7%)	7.80	380	United Kingdom
QatarGas 3 - Train 6	QP (68.5%), ConocoPhillips (30%), Mitsui (1.5%)	7.80	380	US
QatarGas 4 - Train 7	QP (70%), Shell (30%)	7.80	380	US and Europe
RasGas - Train 1, 2	QP (70%), ExxonMobil (30%)	6.60	320	Korea
RasGas - Train 3	QP (70%), ExxonMobil (30%)	4.70	230	India
RasGas - Train 4	QP (70%), ExxonMobil (30%)	4.70	230	Europe
RasGas - Train 5	QP (70%), ExxonMobil (30%)	4.70	230	Europe and Asia
RasGas - Train 6	QP (70%), ExxonMobil (30%)	7.80	380	Asia and US
RasGas - Train 7	QP (70%), ExxonMobil (30%)	7.80	380	Asia and US
Total LNG capacity		77.10	3,770	

Source: QP, QatarGas, RasGas, Company reports, HSBC estimates

Ethane extraction: Gas requirements

Ethane requirement for a 1.2m tpa ethylene cracker

Ethylene	1.2	m tons
Ethane	1.6	m tons
Ethane	123	mmscfd
Average ethane composition in non-associated gas		5% to 7%
Required rich gas throughput	2451	mmscfd
Required rich gas throughput	895	bcf/yr

Gas requirement by project

Plant	Capacity (000 tons)	Gas requirement mmscfd
Ammonia	1,000	50
LNG	4,000	250
Methanol	1,600	150
GTL*	35,000	350

* bbl/day

Source: Nexant, HSBC

ethane requires substantial downstream petrochemical investment before economic extraction can be justified. The table at the top of this page shows the rich gas throughput required before enough ethane can be extracted to run a single 1.2m ton ethane cracker.

With all planned additional ethylene capacity in Qatar – both the Qatar Petroleum Company (QAPCO) expansion and the Ras Laffan cracker – having already secured ethane supplies, there is no incentive for investing in ethane extraction at the moment without having a ready end-market for the product. Adding ethane extraction capability at a later stage remains technically feasible and could provide feedstock for petrochemical expansion in the medium term. However, newer ethylene plants may have to pay more for ethane feedstock, as the removal of ethane would drop the heating value of LNG, which would need to be compensated through the addition of propane.

Qatar's GTL projects have not quite kept pace with the development of the LNG industry. Of the three projects, only the Oryx project has come onstream so far, and the Peral project has seen costs more than triple from the initial estimates of USD5bn to more than USD18bn by current estimates. ExxonMobil announced in 2007 that it was canceling its proposed GTL project in Qatar

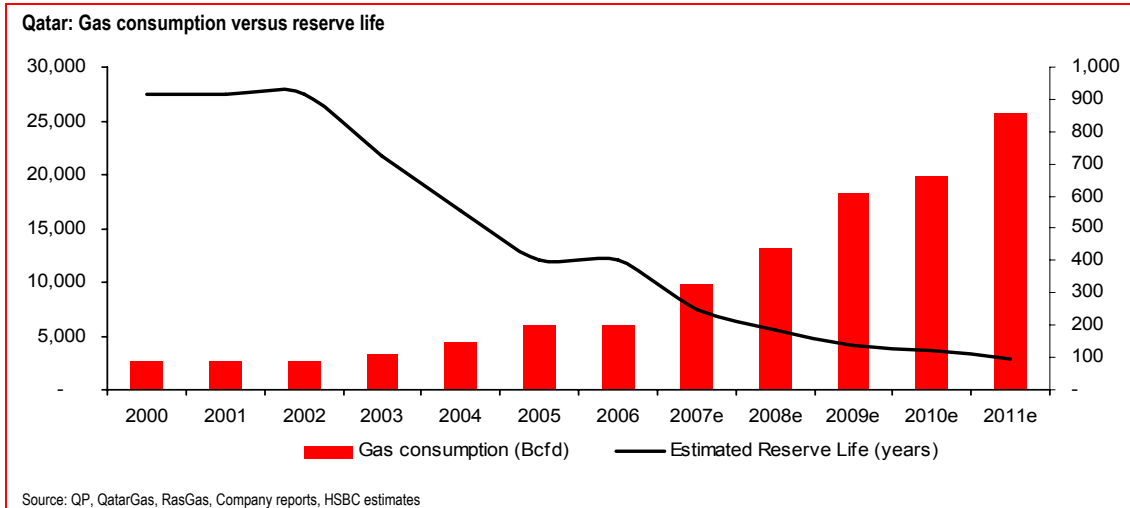
due to spiraling costs that made the project uneconomical.

While LNG projects have lower technological risks and offer higher project netbacks due to contract pricing, the Qatar government had decided to allocate a portion of North Gas field supply to GTL to have some diversification away from LNG. However, given escalating project costs and cancellations, it appears that the diversification strategy has not worked out to plan, and that the bulk of Qatar's gas development will be focused on LNG projects.

Moratorium on new projects

In 2005, the government of Qatar announced a three-year moratorium on new gas-based projects in the country to ensure the longer-term viability of the North field's gas basin. The government has gone on record several times stating that it wanted to develop the North field into an asset that would remain in production for more than 100 years. The rapid buildup of LNG capacity, as well as planned GTL facilities and ammonia plants, based on 2011 consumption estimates, would have dropped the reserve life of the North field to about 100 years (see the chart at the top of the next page).

Given the ramp-up in capacity, and planned consumption having reached the margin in terms



of reserve life, the government of Qatar decided to explore the field further to get a more accurate estimate of the gas reserves. This reserve study was initially expected to take three years to complete, but now might extend into 2010-11. While the study is being conducted, QP has announced that no new projects will be undertaken and that projects under discussion have been placed on hold. However, projects that had received their gas allocations, such as Qatar Fertilizer Company's (QAFCO) ammonia and urea expansion and the LNG projects, are continuing as planned.

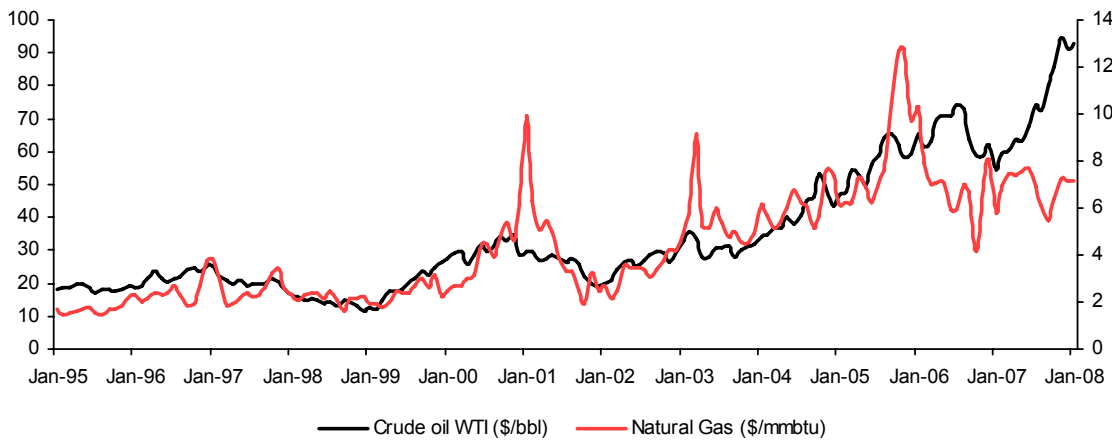
Given the moratorium on new gas allocations in Qatar, we expect no new project expansions – apart from the ones already committed to by IQ – in the fertilizer and methanol sectors through 2012 at the very least. Given that once the moratorium is lifted, project approval, financing, and construction cycles could add 4-5 years to the onstream date, we believe that the current expansion plans represent the last tranche of organic capacity growth for IQ's gas-based assets in the medium term.

Role of the Middle East in basic chemicals

While petrochemical investments have garnered the most attention and column inches as far as the role of the Middle East with respect to commodity chemicals goes, the region has been at the forefront of capacity expansions, not just in commodity thermoplastic resins, but also in a variety of other gas-based chemicals such as fertilizers and methanol. The emergence of the Middle East as a major player in the chemical industry can be traced back to a confluence of events: the sharp rise in US natural gas prices after 2000, the more recent rise in global crude oil prices on the back of strong demand, and the continued desire of Middle Eastern states to diversify their economies away from dependence on oil and to monetize their stranded gas reserves.

The scale of influence that the Middle East has come to have on the global commodity chemical industry would not have been the same without the drastic change in the energy price environment, which started with the rise in US natural gas prices in 2000-01. While the Middle Eastern states have had access to cheap stranded gas reserves for several decades, the rapid development of their industry was held back by the fact that the US prior to 2000-01 also had

Energy prices: Crude oil versus US natural gas



Source: CMAI, HSBC

cheap gas. When coupled with access to scale economies, technology, and proximity to the local market, this made the US Gulf Coast one of the most competitive chemical manufacturing locations in the world and limited capacity growth in the Middle East.

However, this scenario changed once US natural gas prices skyrocketed in 2000-01 as a wave of gas-based power plants started to come onstream, providing an alternative use for the gas and bidding up prices. Gas prices in the US have remained stubbornly high ever since, and it is widely acknowledged that a gas price regime in the USD6-8 per mmbtu range is here to stay – a far cry from historical levels of USD1-2 per mmbtu.

In light of this new gas pricing regime in the US, several chemical industries that were large consumers of natural gas – namely, ammonia and methanol producers – became uncompetitive and started to shut down their US operations, leading to a wide-scale shift in production capacity away from the US and to regions with more competitively priced natural gas, leading to a wave of capacity expansion plans for these products in the Middle East.

The petrochemical industry did not experience the same level of shutdowns because of higher natural gas prices, as increasing demand from emerging economies and elevated crude oil prices allowed for higher costs to be passed on to consumers. However, while large-scale petrochemical capacity shutdowns in the US were averted, it became apparent that the US did not have a feedstock position that allowed for new capacity to be built. A similar pattern has been visible in Europe, as well, with existing producers showing an ability to pass higher costs on to consumers in a strong demand environment, but recognizing that they would not be competitive as far as adding new capacity was concerned.

Reinvestment economics for chemical projects in the current environment dictate that one must have either a rapidly growing end-market for product off-take or a guaranteed supply of low-cost feedstock, neither of which is available to producers in the US and Europe. This effectively limits chemical expansion to the Middle East, which has a cost position that has only gotten stronger as energy prices continue to rise, and to China, which has a large captive market.

Given the background just outlined here, the Middle East has emerged as the most important

Role of the Middle East in basic chemicals

Product	Middle East share of global capacity		Share of capacity growth 2007-2012e
	2007	2012e	
Ethylene	11.5%	21.2%	56.4%
LLDPE	13.2%	18.3%	33.5%
LDPE	6.2%	17.3%	73.8%
HDPE	12.0%	22.0%	49.8%
Propylene	4.5%	11.1%	34.6%
Polypropylene	6.1%	12.9%	30.4%
Ammonia	7.3%	9.6%	22.8%
Urea	9.4%	12.3%	29.1%
Methanol	19.0%	25.0%	35.6%

Source: CMAI, SRI, HSBC estimates

region for chemical investments globally, with very competitive feedstock positions and opportunities to export to growth markets in Asia. The region is expected to account for well more than 40% of basic chemical capacity additions globally over the next five years (see the table at the top of this page, with strong export positions in each of the product areas shown).

Qatar's role in Middle East chemicals

Despite basing most of its strategy for developing its gas resources on LNG, Qatar still ranks third in the Middle East, behind Saudi Arabia and Iran, in terms of capacity for basic chemicals. The charts at the bottom of this page outline the region's current and forecast ethylene capacity by country. While Qatar is increasing its ethylene capacity, both Saudi Arabia and Iran are also in the midst of their own expansions, leading to a largely

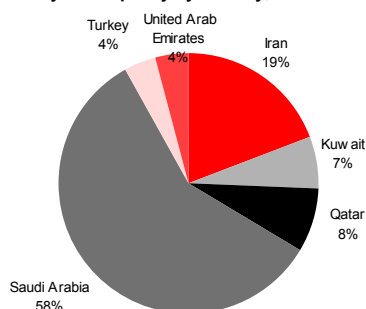
unchanged supply position on a country basis.

The same is true for other basic chemicals such as ammonia, urea, methanol, and MTBE, with Qatar occupying third place behind Saudi Arabia and Iran in terms of capacity for these products.

While the scale of the capacity builds in Saudi Arabia and Iran is larger than those in Qatar, the rationale for adding capacity – namely, low-cost feedstock position – remains the same. We estimate that natural gas is made available to companies in Saudi Arabia and Iran at USD0.75 per mmbtu, while in Qatar, we believe that number to be about USD1.25 per mmbtu.

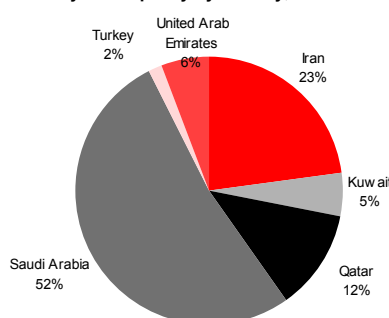
This difference in feedstock costs needs to be analyzed from the perspective of a world in which crude oil prices range from USD60-80 per barrel and natural gas prices range from USD6-8 per mmbtu. While companies in Qatar might pay marginally more for their gas allocations than

Middle East ethylene capacity by country, 2007



Source: CMAI, HSBC

Middle East ethylene capacity by country, 2012e



Source: CMAI, HSBC

those in other parts of the Middle East, this has little to no impact on their competitive position vis-à-vis the rest of the world, in our opinion. Companies producing basic chemicals in the region are not really competing among themselves for export opportunities, but are benefiting from an environment in which the marginal cost of production is significantly above their cost structure, providing them with a strong pricing umbrella for their products.

Industries Qatar: Competitive position

While trying to analyze the competitive position for Industries Qatar, it is important to keep in mind that all of the products that IQ produces through its holding companies are global commodities, with pricing determined by global supply/demand balances and marginal cost structures.

Furthermore, while the dynamics for each industry group are quite different, the common thread underlying all of them – with the exception of steel – from IQ's perspective is the low cost of natural gas and the resulting global low-cost position. Though IQ's various business segments are at different stages of their respective commodity cycles, the company remains very well-positioned from a cost perspective globally, in our view.

Fertilizers: Ammonia and urea

Global demand for fertilizers has been extremely strong over the last few years, driven by strong global consumption demand, low food stocks, and demand for biofuels, all of which are placing pressure on food resources and increasing demand for yield-enhancing measures, ranging from biotech seeds to increased use of fertilizers.

Added to this strong demand backdrop, we have a situation in which the marginal cost of ammonia and urea production is being driven by global

crude oil prices. While the bulk of global urea production is based on natural gas, most producers in Europe and Asia have their costs linked to a formula based on the price of crude oil-derived products.

This linkage to crude, in the current energy price environment, translates to a huge advantage for a fixed-cost, gas-based producer such as QAFCO. We estimate that as the HSBC energy team's long-term average crude oil price forecast of USD60 per bbl translates roughly into marginal urea production costs of about USD350 per ton, compared to QAFCO's production costs of about USD100 per ton, this places QAFCO firmly in the bottom quartile of the cost curve and bodes well for margins in the medium term.

Petrochemicals: Ethylene and polyethylene

The scenario in basic petrochemicals – ethylene and polyethylene – is not too different, from a cost structure perspective, from that for fertilizers, as far as IQ is concerned. The demand environment for basic plastics is considerably less robust than that for global food grains, given that plastics are essentially geared to global economic growth, which appears to be slowing.

However, despite the slower demand growth rates, the current energy price environment means that the marginal cost of ethylene production is unlikely to fall below USD800 per ton, even during a cyclical trough in 2011e-12e, as per our estimates. Given that the production costs for QAPCO are in the range of USD250-300 per ton, we believe that QAPCO will continue to have robust petrochemical margins even in a cyclical trough.

Fuels: Methanol and MTBE

While Qatar Fuel Additives Co. (QAFAC) receives natural gas for methanol production at a low fixed rate, giving the company a highly

competitive methanol cost position, we estimate that QAFAC receives butane for MTBE production at only a slight discount to international market rates. The fact that butane is supplied at market rates accounts for the sharply lower profit margins at QAFAC in relation to the margins at QAFCO and QAPCO, in our opinion.

We estimate QAFAC's cost advantage in methanol will remain strong in the medium term, with production costs averaging USD110 per ton, compared to marginal producers' averaging USD250 per ton. However, that cost advantage does not translate to quite the same extent in MTBE terms, given that QAFAC essentially pays market prices for butane. We estimate that QAFAC's MTBE margins will average 20% in the medium term, well below the profitability of the other chemical divisions.

Steel

The steel segment is the one division of IQ that does not have any competitive advantage in terms of cost structure. QASCO meets all of its iron ore requirements from imports, sourced mainly from Brazil and Sweden. The segment mainly serves domestic steel consumption and makes long steel products that have a ready market, owing to the construction boom in the country. QASCO is protected from imports through a 20% import tariff duty imposed by the government. The company's margins would be adversely impacted in the event that this tariff were to be removed; however, we believe that the tariff regime will be fairly stable, at least in the medium term. We expect strong domestic demand to continue to buoy pricing, and we believe that the company should achieve EBITDA margin levels in the mid-20% area.

The inevitable comparison: SABIC versus IQ

The similarities between Saudi Basic Industries Corp. (SABIC), and IQ are obvious, such as their similar cost-advantaged positions that are pretty much unmatched in the industry, and their complementary product portfolios ranging from fertilizers to steel to petrochemicals and methanol. From an investment perspective, the Saudi and Qatari governments have large stakes in SABIC and IQ, respectively, and the companies each account for more than one-quarter of their respective local market indices. Furthermore, sell-side analyst coverage of both companies is rather limited, with only a handful of local brokers covering the stocks. However, just as similarities between the two companies abound, there are several important differences in both scale and scope.

First, IQ is a more diversified company in terms of its earnings and revenue profile than SABIC. While SABIC has higher steel, fertilizer, and methanol capacities than IQ, its share of revenue from these businesses is lower than that for IQ, given that SABIC's ethylene capacity dwarfs IQ's at 10.6m tons versus 1.1m tons, as per our 2010 estimates. SABIC derives roughly 9% of its revenues from metals, compared to 35% for IQ.

While IQ is a more diversified play in terms of its balance of steel versus chemical revenues, within the chemical segment, SABIC has a significantly broader slate of chemical production, ranging from commodity chemicals such as fertilizers, ethylene, and polyethylene to the more specialty chemical products such as polycarbonates. Even within commodity chemical products, SABIC's product range is significantly broader than that of IQ, with capacities for ethylene glycol/polyester, chlor-alkali chains, styrenics, and a variety of other chains to which IQ does not have access.

Furthermore, SABIC has a truly global reach, both in terms of its production assets and its distribution and logistics networks. SABIC, through a series of acquisitions – from DSM to GE Plastics – has acquired production facilities and marketing networks in the largest chemical markets across the globe. The company also has set up its own channels and entered into joint ventures in China, showcasing its ambitions of being a truly global chemical company.

IQ, on the other hand, is far more focused on Qatar and does not have the global base or reach of SABIC. IQ also differs from SABIC in the manner in which its products are marketed. IQ has off-take agreements with joint-venture partners Total and Yara of its subsidiaries for a large proportion of its production volumes, thereby not requiring the establishment of large distribution networks.

While SABIC's product diversity allows the company a buffer from a downturn in any single product, IQ, because of its more focused portfolio, can benefit significantly from an upturn in a single product or market – such as urea – and is more of a product-specific play than SABIC.

Furthermore, from the perspective of a non-Gulf Cooperation Council (GCC) investor, the key variable in IQ's favor is that of market access. SABIC remains closed for direct investment to non-GCC investors, and such investors require the use of indexed or derivative instruments to invest in SABIC. IQ, on the other hand, is open to and accessible for foreign investment, subject to a 25% cap on foreign holdings in the stock.

While comparisons between the two companies are inevitable, given that they originate from the same region and have similar product portfolios, we believe that slotting both companies onto the same framework does neither company justice. SABIC is a truly global chemical giant, with a broad spread of assets and geographies, and has ambitious plans to extend its global reach and expand its specialty chemical business. IQ, by contrast, has a diverse revenue base and is focused on a handful of products for which it has a solid cost position. The company is focused on adding to its existing capacity base in Qatar and maintaining as large a cost advantage as possible in the commodity chains in which it operates.

IQ: Company profile

Company history

Industries Qatar (IQ) is one of the largest integrated industrial holding companies in Qatar, as well as in the broader Middle Eastern market, and is representative of the efforts over the last few decades by the government of Qatar to diversify its economy away from dependence on oil and gas while building an industrial production base.

The first phase of Qatar's industrial diversification plan dates back to the establishment of the Qatar Fertilizer Company (QAFCO) in 1969. QAFCO was established as a joint venture by the government of Qatar, Norsk Hydro, Davy Power of the US, and Hambros Bank of the UK with the objective of using Qatar's natural gas resources to produce ammonia and urea. The company brought onstream its first facility at a site in Mesaieed, Qatar, in 1973 and has since started up three more facilities, with the last one coming onstream in 2004. With annual capacity of more than 2m tons each of ammonia and urea, Mesaieed now is one of the world's single largest sites for fertilizer production.

Following the establishment of the first QAFCO facility, Qatar continued its industrial diversification plan with the incorporation of Qatar Petroleum Company (QAPCO) and Qatar Steel in 1974.

Qatar Steel was established as a joint venture between the government of Qatar and two Japanese steel companies, Kobe Steel and Tokyo

Boeki. The company started production and commercial operations in 1978. In 1997, the joint-venture partners sold their interests in the company to the government of Qatar, making Qatar Steel a wholly owned government subsidiary.

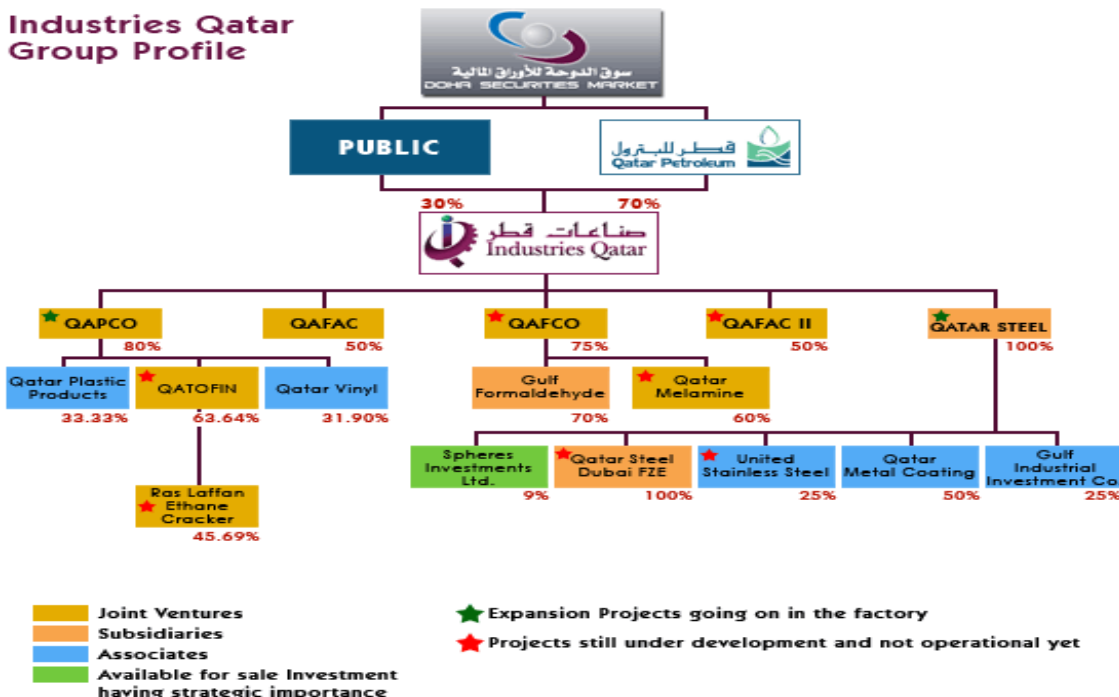
QAPCO was incorporated in 1974 as a joint venture, between the government of Qatar and Total Petrochemicals of France, which currently has a 20% stake in the venture. The company started commercial operations in 1981 after bringing onstream its ethane-based ethylene cracker and low-density polyethylene (LDPE) unit.

Qatar Fuel Additives Co. (QAFAC) is the fourth of the companies that make up IQ, and was incorporated in 1991 with the intention of using inexpensive gas reserves to manufacture methanol and methyl tertiary butyl ether (MTBE). QAFAC, on lines similar to earlier industrial companies that relied on foreign technology and expertise to start initial operations, was incorporated as a joint venture of the government of Qatar; Overseas Petroleum & Investment Corporation (OPIC), which is owned by the Chinese Petroleum Corporation (CPS); International Octane Limited of Dubai, and LCY Investments Corp. of Taiwan. The government of Qatar holds a 50% stake in the venture. QAFAC started commercial production in 1999.

Prior to 2003, all four of the IQ companies were controlled through direct government stakes – as was the case with Qatar Steel – or through indirect

Industries Qatar: Group profile

Industries Qatar Group Profile



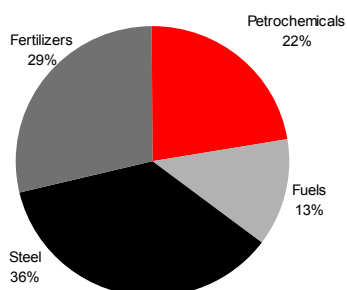
Source: Company reports

government stakes via Qatar Petroleum, the state-owned oil and gas giant. In 2003, the government reorganized the holding structure of its industrial investments, and Qatar Petroleum gained control of Qatar Steel and transferred all of its interests in the four industrial companies into a holding company named Industries Qatar. Subsequently, IQ undertook an initial public offering on the Doha Stock Exchange of 30% of its capital, reducing the shareholding of Qatar Petroleum in

the company to 70%.

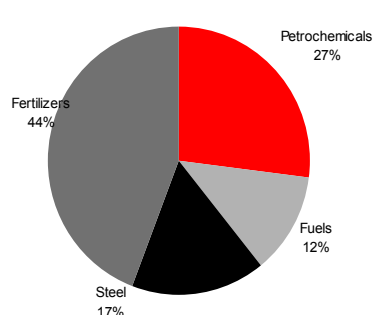
The chart at the top of this page highlights the current structure of Industries Qatar, along with the company's various joint ventures and subsidiaries. As can be seen in the chart above, IQ is essentially a holding company for Qatar Petroleum's non-oil and gas ventures and is an investment vehicle providing shareholders with exposure to the petrochemical, steel, fertilizer, and fuel-additives industries.

Industries Qatar: Sales by division, 2006



Source: Company reports, HSBC

Industries Qatar: Net profit by division, 2006



Source: Company reports, HSBC

Industries Qatar: Principal subsidiaries

	Joint venture with:	Description	Stake (%)
Company			
Qatar Petrochemical Co. (QAPCO)	Total	Ethylene and LDPE producer	80.0
Qatar Fertilizer Co. (QAFCO)	Yara, Fertilizer Holdings AS	Ammonia and urea	75.0
Qatar Steel Co. (Qatar Steel)	-	Steel	100.0
Qatar Fuel Additives Co. (QAFAC)	OPIC, International Octane, LCY	MTBE and methanol	50.0
QAPCO subsidiaries			
Company			
Qatar Plastic Products Co.	QIMCO, FEBO Spa	Heavy duty plastic bags	33.3
Qatar Vinyl Co.	Norsk Hydro, Arkema	VCM, EDC and caustic soda	31.9
QATOFIN	Q-Chem (QP and CPChem)	Ras Laffan ethylene cracker	63.6
QAFCO subsidiaries			
Company			
Gulf Formaldehyde Co. (GFC)	QIMCO, UDC	Urea formaldehyde	70.0
Qatar Melamine	QIMCO	Melamine	60.0
Qatar Steel subsidiaries			
Company			
Qatar Metals Coating Co. (Q-COAT)	QIMCO	Metallic coatings	50.0
United Stainless Steel Co.	GIC Kuwait, Al Rashid Group, NIG Kuwait, UGI Bahrain	Stainless steel	25.0
Gulf Industrial Investment Co. (GIIC)	GIC Kuwait	Financial	25.0
Spheres Investment Ltd.	SABIC, Acorn Capital	Financial	9.0

Source: Company reports, HSBC

The common thread running through IQ's varied businesses is the use of Qatar's abundant natural gas resources to build a highly cost-competitive production base – evident in the establishment of industries that are dependent on feedstock pricing as a source of competitive advantage, such as fertilizers, petrochemicals, and fuel additives.

Of the various divisions, Qatar Steel is the only one that does not have a competitive advantage in terms of feedstock costs – evident from the charts at the bottom of the previous page, which show a lower share of IQ's net income being derived from steel, despite a higher share of revenues. While Qatar Steel lacks a cost advantage, the

rationale for setting up a domestic steel production base in Qatar was to establish an industry of “national importance,” while moving away from imported product and generating employment at the same time. The table at the top of this page lists the joint ventures and subsidiaries for each of the four principal businesses of IQ.

Capacity expansion plans: 'Vision 2010'

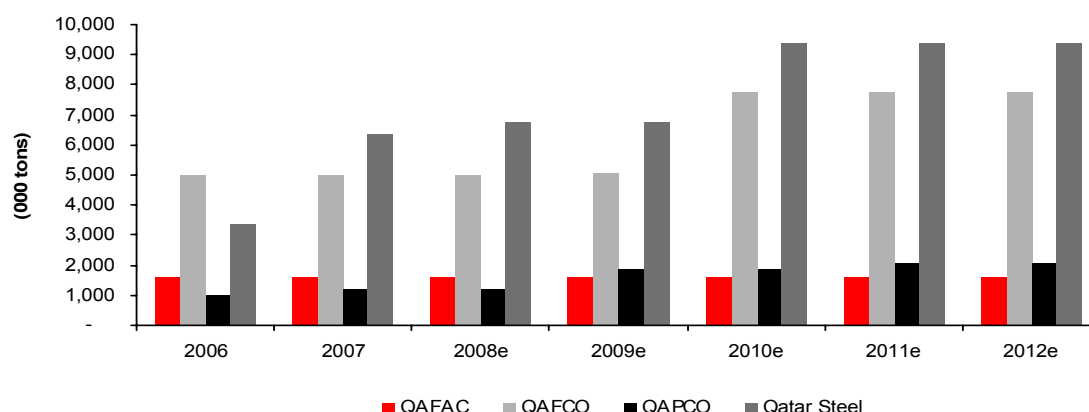
IQ has embarked on an ambitious capacity expansion program called 'Vision 2010' that is essentially aimed at doubling the combined

Industries Qatar: Capacity expansion plans

Group company	Project	IQ share	Total cost (QARbn)	IQ share of cost (QARbn)	Estimated completion date
Qatar Steel	Expansion - Phase I	100%	2.09	2.09	Q3, 2007
QAPCO	Ethylene expansion II	80%	0.84	0.67	Q3, 2007
QAPCO	Qatofin	51%	4.53	2.31	Q4, 2008
IQ	IQ Tower	100%	0.7	0.7	2009
QAFCO	QAFCO 5	75%	3.65	2.74	Q1, 2010
Qatar Steel	SMS/RM - Phase II	100%	2.62	2.62	Q2, 2010
Qatar Steel	Expansion - Phase II	100%	6.85	6.85	2010
Qatar Steel	PC strands	100%	0.11	0.11	Q1, 2009
Qatar Steel	Iron ore mining & pelletization	12%	5.48	0.66	2010
QAPCO	LDPE 3 plant	80%	0.91	0.73	Q4, 2010
Total expenditure			27.78	19.48	

Source: Company reports, HSBC

Industries Qatar: Capacity expansion



Source: Company reports, HSBC estimates

production capacity of its subsidiaries over the next four years.

The principal areas of capacity expansion are in steel, petrochemicals, and fertilizers. Qatar Steel has plans to more than triple its capacity for steel bars, billets, and wire rod coil from the current combined 1.7m tons to more than 5.7m tons by 2012. This expansion is slated to come about in two phases, with the first to begin commercial production in early 2008. The second phase of capacity expansion at Qatar Steel is slated for 2010. The estimated capital expenditure for the steel expansion stands at QAR12.3bn, which accounts for more than 60% of IQ's total capital spending outlay planned for the next four years.

The other major capacity expansion planned by IQ is in the area of fertilizers, with QAFCO – V expected to begin commercial production by early

2010. The QAFCO – V expansion is linked to the completion of a natural gas pipeline from the Ras Laffan North gas fields to Mesaieed in 2009, which is to provide the main feedstock to the plant. Following completion of the expansion, QAFCO is expected to increase production capacity to 3.2m tons of ammonia and 4.2m tons of urea from the existing 2m tons and 3m tons, respectively. This increase in capacity is aimed at serving the rapidly growing export markets for nitrogenous fertilizers, with QAFCO already having entered into an off-take agreement for the product with Yara, a Norway-based fertilizer company. The total cost of the expansion is estimated at QAR2.7bn, with QAFCO expected to become the world's largest producer of urea with a capacity share of 5.3% once the project is completed.

QAPCO expansion : Ownership structures

Ras Laffan ethylene cracker	1,300	000 tons
Mesaieed LLDPE plant	450	000 tons
Ownership structure		
Ras Laffan ethylene cracker	Q Chem II (54%)	Qatofin (46%)
QAFCO ownership of Qatofin	63.6%	
QAFCO ownership of Ras Laffan cracker	29%	
QAFCO share of ethylene capacity	380	000 tons
Ownership structure		
Mesaieed LLDPE plant	Qatofin (100%)	
QAFCO ownership of Mesaieed LLDPE plant	63.6%	
QAFCO share of LLDPE capacity	286	000 tons

Source: Company reports, HSBC estimates

The petrochemicals expansion is a two-part project, with a 1.3m ton cracker in Ras Laffan and a 450kt LLDPE plant that will use ethylene from the Ras Laffan cracker. The Ras Laffan cracker is jointly owned by Q-Chem II, a joint venture between Chevron Phillips and Qatar Petroleum, and Qatofin, a joint venture between Atofina and QAPCO. The table at the bottom of the previous page details the ownership structures of the planned ventures. Both the plants are expected to start operations in Q42008, with commercial quantities being produced by early 2009.

QAFAC has no large capacity expansions planned within our forecast period, through 2012. The company in 2004 obtained approval for a 2.3m ton methanol plant at its Mesaieed complex, which would have more than doubled the company's methanol capacity from the current 830kt. This expansion project was placed on hold in 2005 in light of the steep rise in engineering, procurement, and construction costs in the region and competing capital requirements from IQ's other expansion ventures.

QAFAC revived this expansion plan in late 2007 in a scaled-down format, with a planned capacity increase of 1m tons, down from the initial 2.3m ton plan. However, we do not expect this project to come onstream before 2012 at the earliest. The cost pressures and construction delays in the region continue to persist, as per our analysis, making completion of a project of this magnitude within four years unlikely.

Furthermore, accessing feedstock for this project also would be a challenge in light of the moratorium on further development of the giant North gas field, imposed by the Qatari government in 2005.

In early 2005, the government of Qatar imposed a moratorium on additional development projects at the North field (also known as North Dome), pending a study of the reservoirs. While this moratorium does not impact projects that were already signed or announced, we believe that new expansions and feedstock allocations are unlikely before 2010 at the earliest.

We expect the announced capacity expansions to come onstream in the stated time frame, and we estimate that IQ will roughly double its combined installed capacity base from the current 11.4m tons to more than 22m tons by 2012. This substantial bump up in capacity and the feedstock competitiveness of the majority of its product groups should result in secular earnings growth over the period, despite an expected cyclical decline across its portfolio, in our opinion.

In the next few sections of this report, we profile each of IQ's constituent companies individually and take a look at the cost-competitiveness of each company, along with the demand drivers and supply/demand outlook for various product groups. We also outline our operating rate forecasts for the various sectors and detail our product pricing and margin assumptions for each company.

Fertilizers and QAFCO

A primer on fertilizers

Fertilizers are primarily used to replenish soil nutrients and enhance production yields. While a number of nutrients are directly available in soil, as crops grow they absorb these nutrients, resulting in their depletion. While nutrients over time are reabsorbed in the form of organic matter and plant residue, the replenishment rate is not rapid enough to cope with the demands placed by farming today.

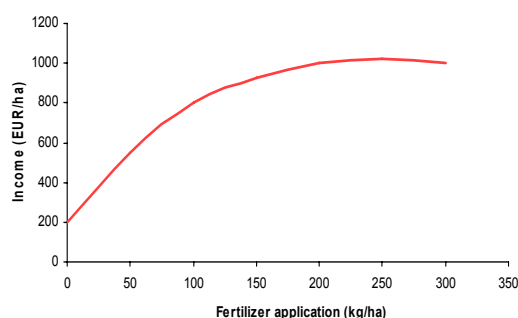
Mineral fertilizers are used to replenish these lost nutrients, while providing an optimal nutrient balance, enabling the farmer to obtain higher yields. Appropriate fertilizer use has a significant impact on average crop profitability, with the increased revenue from higher yields more than offsetting the costs of the fertilizer (see the chart at the bottom of this page for a sample fertilizer profitability profile). The incentive to use fertilizers to boost yields is further enhanced by the fact that fertilizer costs typically account for a

small proportion of total grain production costs. Given the benefits and this relatively low share of production costs, farmers are in general not highly price-sensitive to fertilizer prices.

The primary fertilizer categories are based on the most commonly required and applied nutrients: nitrogen (N), phosphorus (P), and potassium (K). Nitrogen is the main constituent of proteins, and is considered essential for growth and development in plants. Supply of nitrogen determines a plant's growth and yield. Nitrogen is the most easily depleted nutrient. Phosphorus plays a vital part in root development and aids in drought resistance. Potassium is responsible for the translocation of the resulting products from photosynthesis, and aids in increasing yields and improving crop resistance to diseases.

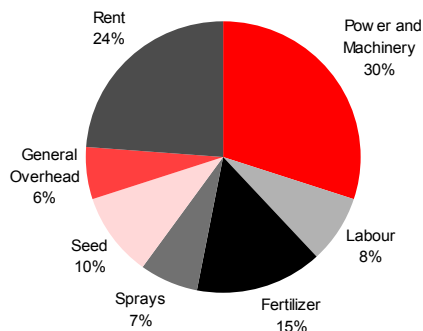
Among the three major nutrients, nitrogen is far and away the most important factor as far as higher crop yields are concerned. It accounts for roughly a 60% share of total global fertilizer

Fertilizer profitability profile



Source: Yara, winter wheat yield data: Long-term trial, Broadbalk, Rothamsted

Breakdown of sample grain production costs



Source: Yara, USDA

Primary fertilizer characteristics

Nutrients and share	Benefit	Recommended application	Industry structure
Nitrogen: N (60%)	Primary constituent of proteins, essential for growth	Annual	Fragmented
Phosphorus: P (23%)	Required for root development, increases crop size	Not required annually	Fragmented, under consolidation
Potassium: K (17%)	Improves crop resistance to disease and drought	Not required annually	Consolidated, production discipline

Source: Yara, Company reports, HSBC

consumption, and is generally applied annually to maintain yields (see the table at the top of this page). Phosphorus and potassium fertilizers, on the other hand, have far lower shares of global fertilizer consumption, compared to nitrogen, and are not always required to be applied annually. While each of the major nutrients has a primary fertilizer that is rich in that particular nutrient, several multinutrient fertilizers offer a combination of all three nutrients (see the table at the bottom of this page).

Ammonia is the primary basis for all nitrogenous fertilizers because of its high nitrogen content. While ammonia can be used directly as a fertilizer, it is more commonly processed into urea or ammonium nitrates before application. Urea is by far the largest nitrogenous fertilizer, accounting for a 52% share of total consumption.

Potash fertilizers are mainly derived from geological deposits, with the salt deposits mined for the mineral. These unrefined deposits are then refined to a concentrated form before application.

The most commonly used potash-based fertilizer is potassium chloride, also known as muriate of potash (MOP), which accounts for 71% of total potash fertilizer demand.

Similar to potash, the raw material for the production of phosphate fertilizers, rock phosphate, also is mined from ores in geological deposits. The extracted ore is then processed into phosphate-based fertilizers such as mono- and diammonium phosphates (MAP and DAP), which together account for more than 46% of all phosphate-based fertilizer demand.

Fertilizer use by crop

According to the International Fertilizer Industry Association (IFA), cereals represent roughly 52% of global fertilizer use, followed by fruits and vegetables at 15%, and oilseeds at 11%. Among food grains, wheat, rice, and corn represent more than 90% of global fertilizer use with roughly equivalent shares of fertilizer consumption (see the charts at the top of the next page).

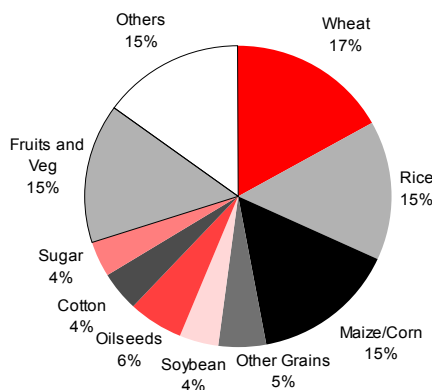
Primary fertilizer categories

Nitrogen		Potash		Phosphate	
Urea	52%	MOP	71%	DAP/MAP	46%
UAN	5%	NPK	24%	NPK	22%
CAN	9%	Others	5%	SSP	18%
NPK	9%			TSP	6%
DAP	6%			Others	8%
Ammonia	4%				
Others	15%				

Primary nutrient composition	% N	% P2O5	% K2O
NPK fertilizers	5 to 25	5 to 24	5 to 24
NP fertilizers	20 to 26	6 to 34	-
Ammonium phosphates DAP	16 to 18	42 to 48	-
MAP	11	52	-
NK fertilizers	13 to 26	-	15 to 46
PK fertilizers	-	5 to 30	5 to 30

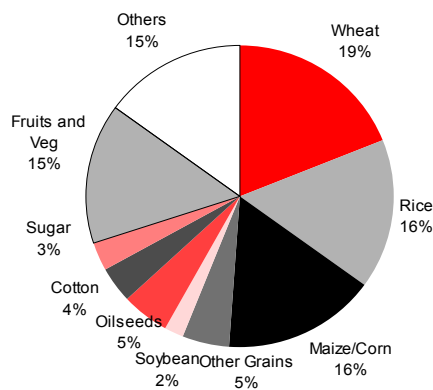
Source: EFMA, IFA

Total global fertilizer consumption by crop, 2007



Source: IFA, HSBC

Nitrogenous fertilizer consumption by crop, 2007



Source: IFA, HSBC

The share of food grains among nitrogenous fertilizers is higher, with cereals accounting for 56% of total nitrogenous fertilizer consumption worldwide. Wheat is the primary crop at 19%, while rice and corn account for roughly 16% each. The share of food grains among phosphate-based fertilizers is lower, at 48%, with a higher proportion of wheat, at 18%, compared to corn and rice, which each represent roughly 13% of demand.

Potash-based fertilizers rely the least on food grains for their demand, with cereals making up only 39% of their consumption. Relative to N- and P-based fertilizers, potash-based fertilizers have a far greater reliance on oilseeds, sugar cane, and fruits and vegetables, with these categories

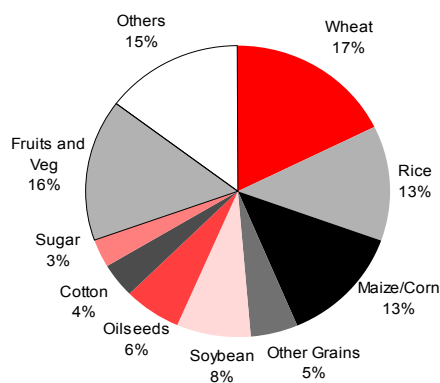
accounting for more than 45% of demand (see the charts at the bottom of this page).

Fertilizer demand by region

Apart from variances in fertilizer demand based on crops, there are also significant variances in demand across regions. Regional and local factors often result in significantly different fertilizer consumption patterns for the same kind of crop in two separate regions.

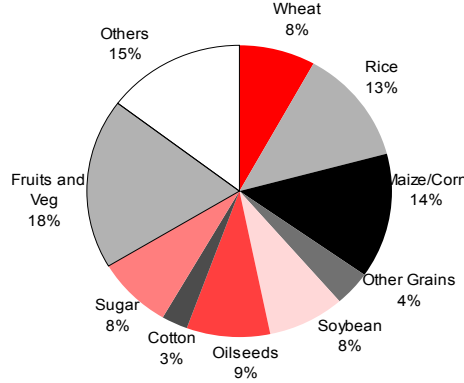
The table at the top of the next page details the differences in fertilizer consumption by region. As can be seen from the table, urea is typically more popular in countries with warmer climates, while UAN is mainly used in North America. The US is one of the few countries where ammonia is used

Phosphate fertilizer consumption by crop, 2007



Source: IFA, HSBC

Potash fertilizer consumption by crop, 2007



Source: IFA, HSBC

Fertilizer consumption by region, 2007

	Urea	Nitrates	NPK	UAN	Others
US	19%	4%	14%	25%	38%
Western Europe	16%	45%	15%	11%	13%
Brazil	50%	8%	9%	0%	33%
China	62%	1%	6%	0%	31%
India	81%	0%	4%	0%	15%

NPK = Nitrogen, phosphorous, and potassium.
Source: IFA, HSBC

as a direct source of nitrogen in autumn application, while nitrates are popular in Western Europe. China is the only country that uses ammonium bicarbonate (ABC), which has a 25% market share.

Both China and India are very large users of urea. In India in particular, urea is price-controlled, with the government subsidizing producers and offering a guaranteed minimum return, while bearing almost all of the feedstock volatility. This guaranteed price mechanism has made urea into the dominant fertilizer in the country, with an 80% share of the market. Brazil consumes a large proportion of urea, but also has a substantial demand for P and K fertilizers because of its large soybean crop.

The table at the bottom of this page overlays fertilizer consumption by region onto consumption patterns by type of crop. The most instructive piece of information from this analysis is the combined contribution of China and India on the demand for nitrogenous fertilizers, as well as on fertilizer demand for wheat and rice. China and India combined account for 67% of all fertilizers used in the cultivation of rice globally and 41% of fertilizers used in wheat cultivation.

As per our earlier analysis, both wheat and rice crops tend to favor nitrogenous fertilizers; hence, it comes as no surprise to find that China and India combined account for well more than 45% of global nitrogenous fertilizer consumption.

With Qatar Fertilizer Co. (QAFCO) levered to ammonia and urea – both nitrogenous fertilizers – and China and India being the main consumption centers for these fertilizers, demand for QAFCO's products is linked to secular demand trends for food grains globally, with specific reference to the trend in China and India.

Urea demand drivers

Grain demand underpinning growth

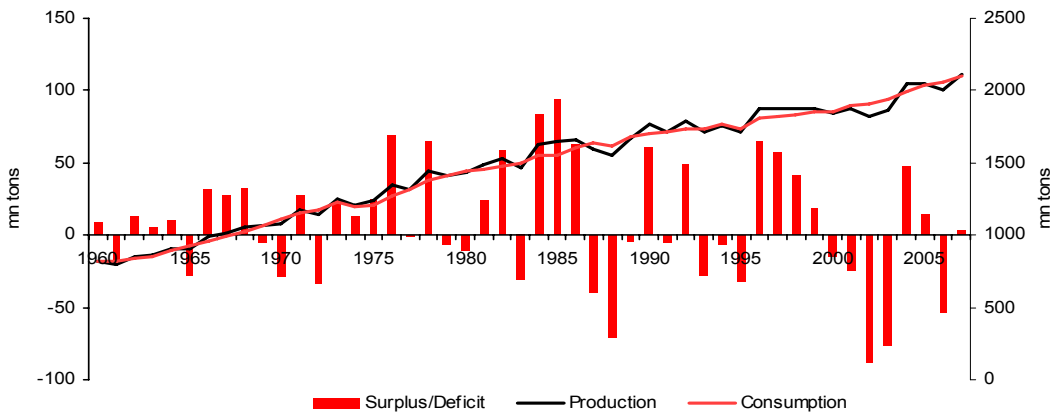
Global demand for food grains, as estimated by the United Nations, is expected to grow at a 1.6% annual rate through 2020, on the back of a growing global population and increased urbanization. With the supply of arable land for cultivation expected to remain broadly fixed, the growth in demand needs to be met by increased agricultural productivity – better farming methods and enhanced use of agricultural inputs such as seeds, crop protection chemicals, and most important, fertilizers.

Fertilizer use matrix: Region, type, crop as a percentage of global demand in 2007

	Nitrogenous	Phosphate	Potash	Wheat	Rice	Corn	Oilseeds
China	31.7%	30.1%	22.5%	24.5%	37.7%	24.8%	19.1%
India	14.4%	14.6%	8.6%	16.5%	28.9%	2.2%	9.4%
US	12.0%	11.2%	17.2%	9.5%	1.1%	39.0%	9.5%
European Union-15	8.6%	6.5%	10.6%	11.3%	0.3%	6.1%	6.5%
Rest of the world	33.3%	37.6%	41.1%	38.2%	32.0%	28.0%	55.5%

Source: IFA, HSBC estimates

Global food grain production



Source: FAO, USDA, HSBC

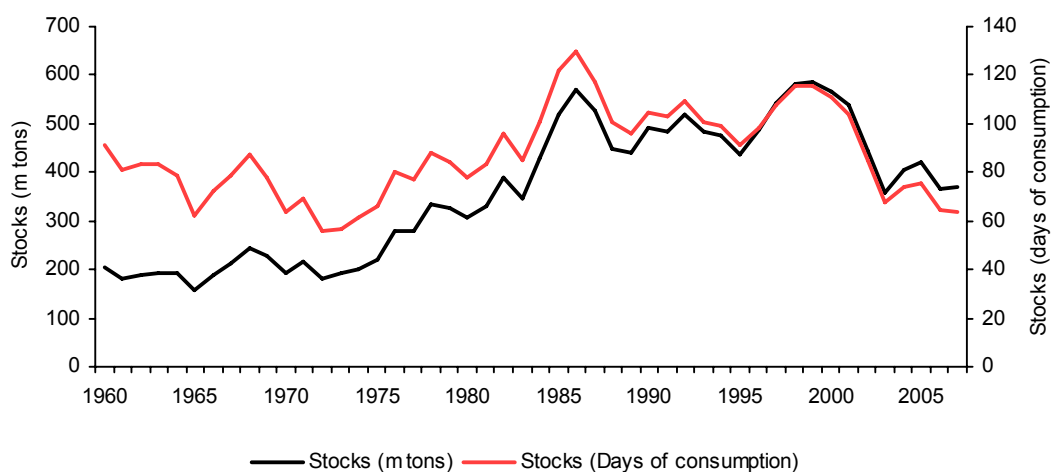
The US Department of Agriculture (USDA) estimates that global food grain production in 2007 amounted to 2.1bn tons, the third-highest production volume ever recorded. However, in light of rising demand, this level of production just about equaled global food-grain consumption and left food-grain stocks unchanged.

With food-grain deficits in six of the last eight years, grain stocks as a percentage of consumption are currently at their lowest levels in 30 years. The outlook for food-grains is also influenced by strong consumption from rapidly

developing countries such as China and India, with steady increases in population and continued strong economic growth contributing to increased demand for food grains and a rapid increase in grain prices. The rule of thumb, according to the Earth Policy Institute, is that levels of grain stocks of less than 60 days of consumption are a signal for an increase in food grain prices.

The combination of demographic-driven, strong global consumption demand, low food stocks, and constraints on arable land is likely to place pressure on food resources and increase demand

Global food-grain stocks



Source: FAO, USDA, HSBC

for yield-enhancing measures, ranging from biotech seeds to increased use of fertilizers. The pressure that food-grain production constraints will place on prices is another factor to consider when considering demand for agricultural inputs such as fertilizers, as rising prices will provide incentives to farmers to increase their spending on better seeds and fertilizers.

We believe that global population-growth demographics point toward a multiyear cyclical peak in terms of food grain demand, which cannot be met by increasing cultivation alone, given the finite amount of arable land. With low levels of global food-grain stocks underpinning growth in food-grain prices, the use of fertilizers to supplement grain production is likely to see a sustained period of growth, in our opinion.

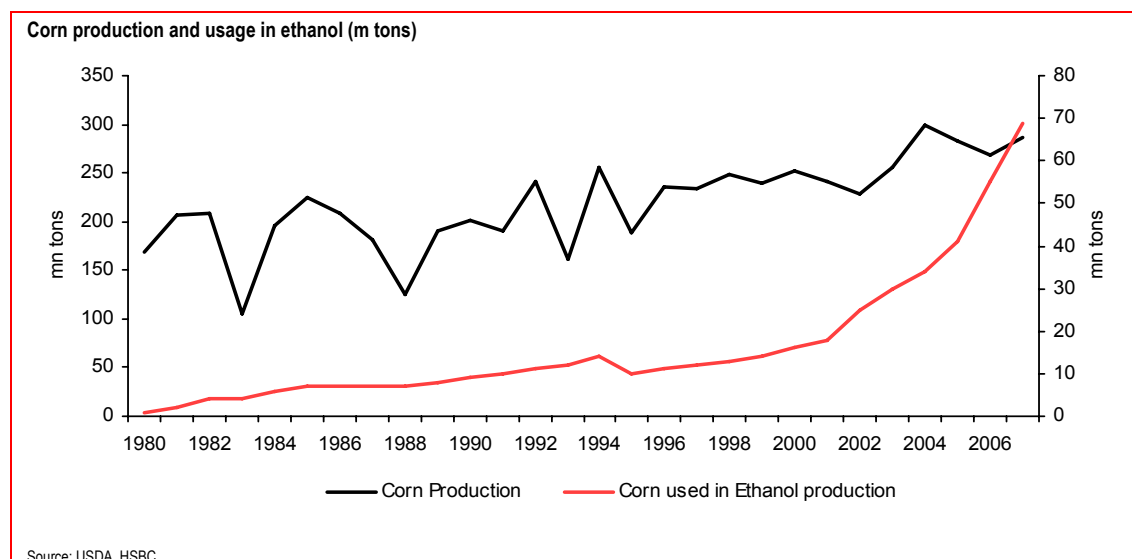
Increasing biofuel demand an additional growth catalyst

The heightened global energy-price environment has fueled investments in alternative fuels, with particular interest being shown in the use of biofuels either directly as transportation fuels or through blending with gasoline. Biofuels are essentially transportation fuels, such as ethanol and biodiesel, which are made from plant or

animal organic matter (biomass). These fuels are usually blended with petroleum fuels, gasoline and diesel fuel, but they can also be used on their own. Ethanol is an alcohol fuel made from sugars found in grains, such as corn, sorghum, and wheat, with the bulk of production in the US involving distillation from corn.

While ethanol has been used as fuel in the US since the early 1900s, it was only after the oil shocks of the 1970s that a concerted effort was made to reduce consumption of gasoline by blending it with ethanol. This mandate to increase domestic ethanol production has only gotten stronger with the Energy Independence and Security Act of 2007 expanding on the renewable fuels standard (RFS) by requiring 36bn gallons of renewable fuel to be used annually by 2022. Of particular note, the legislation specifically states that of that goal, 21bn gallons must come from advanced biofuels, including ethanol.

Such legislation has meant a sharp rise in ethanol production in the US and in the percentage of the corn crop dedicated to production of ethanol. Ethanol production in the US grew from 175m gallons in 1980 to more than 6bn gallons in 2005. This rapid growth in the market for fuel ethanol is



changing the dynamics in the US corn industry, with increasing amounts of corn being dedicated to ethanol production. As can be seen from the chart at the bottom of the previous page, the share of corn used for ethanol production rose from less than 5% in 1995 to more than 24% by 2007. We expect ethanol demand to grow further, from 6bn gallons in 2007 to around 9bn gallons by 2012, with ethanol capacity set to keep pace with growing demand.

The impact of increased ethanol demand is clearly visible in the price of corn. From averaging USD1.90 per bushel in 2005, corn prices shot up more than 70% to average USD3.20 per bushel in 2006 and gained a further 20% for an average price of USD3.92 per bushel in 2007. Despite increased supply, it appears unlikely that corn prices will recede to historical levels.

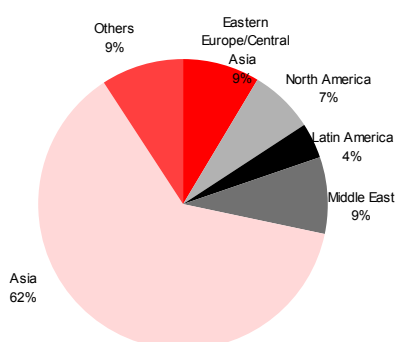
The impact of ethanol demand in the US and rising corn prices on global food-grain demand, grain consumption, and trade patterns is extensive, in our opinion. The US is the largest producer of corn in the world, accounting for about 45% of global production and more than 70% of global exports. Corn is also the largest planted field crop in the US by acreage, accounting for 79m acres in 2006, or 24% of the total 318m acres of field crops planted each year in the US.

While corn yields are slated to increase over the medium term as newer varieties of biotech seeds are introduced, satisfying the estimated 1.5bn bushels in additional corn demand will not come from yield increases alone. Increased corn demand should be met through increased corn acreage at the expense of soybeans or reduced corn exports, or more likely, a mix of both. In either case, this should cause ripple effects globally in terms of increased corn and soybean production.

The US is not just the largest producer of corn, but also is the largest exporter, accounting for more than 70% of global corn exports. Any drop in US exports to meet domestic ethanol demand will have to be offset through increased corn supply from other nations, particularly in Latin America.

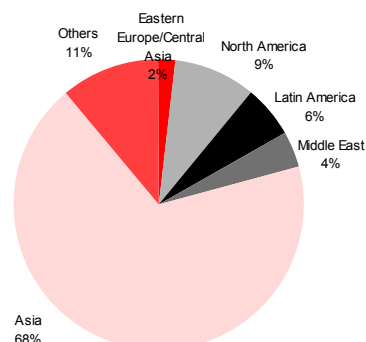
The surge in US ethanol demand, in our opinion, presents an opportunity for providers of agricultural inputs such as seeds, fertilizers, and crop protection chemicals across the world. In our opinion, it is worth repeating that the ripple effects from ethanol and biofuel demand are not just restricted to the US or to the market for genetically modified corn seeds, but extend to other classes of yield-enhancing input, other crops, and other regions.

Urea: Production by region, 2007



Source: SRI, HSBC

Urea: Consumption by region, 2007



Source: SRI, HSBC

We believe that given the current energy price environment, and with energy security always an emotive theme – particularly in the largest hydrocarbon-consuming nation in the world, the US – we are in the early stages of a sustained growth period for biofuels, leading to sharply higher grain prices and demand. This higher grain-price environment should feed through to significantly higher demand for crop inputs such as fertilizers, in our opinion.

Urea global supply/demand outlook

Urea is primarily used as a fertilizer, though industrial uses for the product also exist and account for a 10% share of global consumption. Urea, because of its high nitrogen content, is the most popular form of solid nitrogen fertilizer, particularly in developing regions of the world, and is one of the most widely traded fertilizers globally. The charts at the bottom of the previous page highlight regional production and consumption shares of urea.

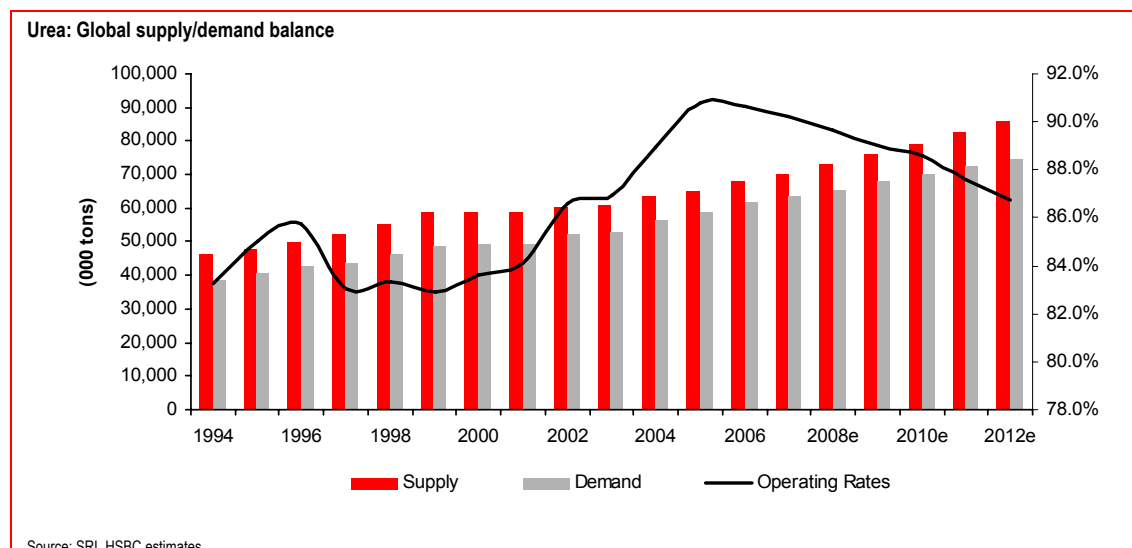
As can be seen, the region with the highest shares of urea production and consumption is the one with the highest population and demand for food grains: Asia. Urea demand has been growing at an

average annual rate of 3.5% over the last 10 years, capturing share from other nitrogenous fertilizers as the total market for nitrogen has grown only 1.9% over the same period.

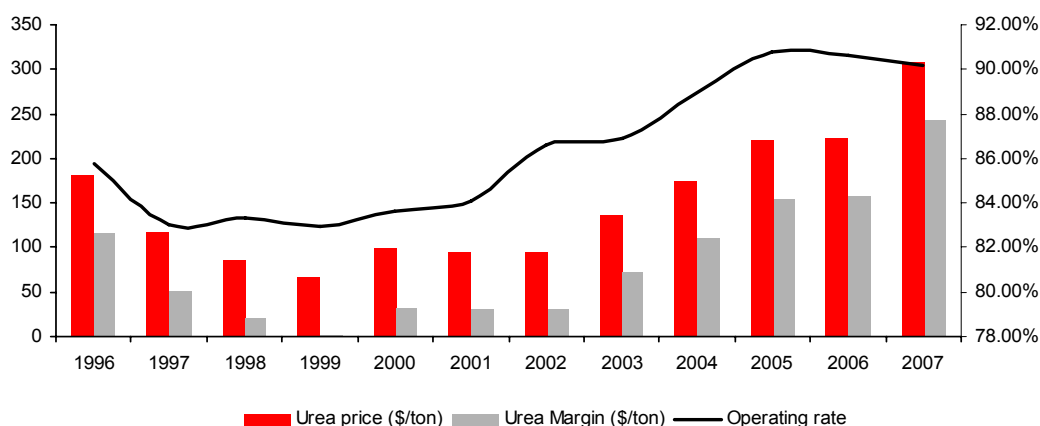
We expect this trend of share gain for urea to continue, as urea is the only price-controlled fertilizer in India and the Chinese government is considering imposing duties on fertilizer exports. We are forecasting average annual urea demand growth of 3% through 2012, underpinned by low grain stocks, surging demand for food, rising biofuels production, and record-high crop prices.

While demand is set to grow strongly, we expect supply growth over the next few years to be stronger still, growing at 4.1% annually through 2012 and placing pressure on operating rates. We estimate that urea operating rates peaked in 2005-06, and that they are set to decline steadily through 2012 as new capacity comes onstream, mostly in regions with lower-cost captive feedstock, such as the Middle East.

We expect to see significant amounts of urea capacity being added in the Middle East and Latin America, both regions that have access to stranded low-cost gas reserves. We estimate that the Middle East should account for about 40% of



Urea: Operating rates versus margins



Source: SRI, HSBC estimates

all new urea capacity through 2012, with large plants scheduled to come onstream in Oman and Iran, as well as QAFCO's own expansion in Qatar.

Explaining the operating rate-margin dichotomy

The chart at the top of this page depicts the relationship between urea operating rates and estimated margin, based on average historical prices for a fixed cost of natural gas-based, low-cost producer. The relationship between operating rates and estimated margins through 2004 is classic commodity chemical behavior, with margins rising and falling in cadence with operating rates as expected. However, the relationship changes after 2005, when despite slackening of supply/demand fundamentals, the margins accruing to fixed-cost producer increased by more than 60% between 2005 and 2007.

This change in the margin dynamics of stranded gas-based urea producers such as QAFCO is explained by the sharp increase in the cost structure of producers in Western Europe and in India over the last couple of years, which has moved the marginal pound of product away from the US and into Western Europe and Asia.

The marginal producer juggle

Fertilizers are easily transportable and commodities in the most basic sense, which means that net of transportation costs and tariffs, the price of urea is pretty much the same across the world. In such a scenario, the price is set by the cost structure of the marginal producer, which over the last few years has been the US industry because of the spike in natural gas prices there since the year 2000. Therefore, the price of urea in various markets effectively used to be the US cash cost of production – based off US Gulf Coast natural-gas prices – less the costs of transporting and importing the product into the US.

The table at the top of the next page is highly instructive, as we try to understand the mechanics of urea price-setting based on import costs into the US and the shift in marginal production away from the region. The table estimates the price of urea for a Middle Eastern producer, based on the US Gulf Coast price of natural gas and import costs into the US. As can be seen from the data, US production costs provided a fairly accurate representation of Middle Eastern prices until 2005, after which the picture changed significantly.

Urea: Shift in price-setting away from the US

	2003	2004	2005	2006	2007	2008e
US natural gas prices(USD/mmbtu)	5.4	6.1	8.2	7.0	6.8	7.1
Natural gas consumption per ton of urea (mmbtu)	26.0	26.0	26.0	26.0	26.0	26.0
Feedstock costs	140.4	159.0	214.2	182.3	176.8	183.6
Other cash costs	35.0	35.0	35.0	35.0	35.0	35.0
Total cash costs	175.4	194.0	249.2	217.3	211.8	218.6
Price equivalence in the Middle East less US terminaling costs	10	10	10	10	10	10
less US freight costs	30	30	40	40	40	40
Forecast ME price (USD/ton)	135	154	199	167	162	169
Average actual prices	138	165	220	223	308	380
Discrepancy between actual and forecast prices	3	11	21	56	146	211

Source: SRI, HSBC estimates

The ever-widening gap between estimated urea prices based off US natural-gas costs and actual urea prices, in the table above, clearly shows that the marginal pound of product is no longer produced in the US. Furthermore, it is also evidence enough to suggest that any urea pricing forecasts made with a historical backdrop of the US as the price-setting region will be incorrect.

The main driver of global urea prices over the last couple of years has not been natural gas but crude oil. While the bulk of global urea production is based on natural gas, very few producers other than those in the Middle East have access to stranded gas reserves that provide them with a fixed cost of gas. In the US, producers pay Henry Hub linked market prices, while in most of Western Europe urea producers pay gas prices that are linked to a formula based on the price of crude oil-derived products (see the following table).

Sample European producer gas-pricing formula

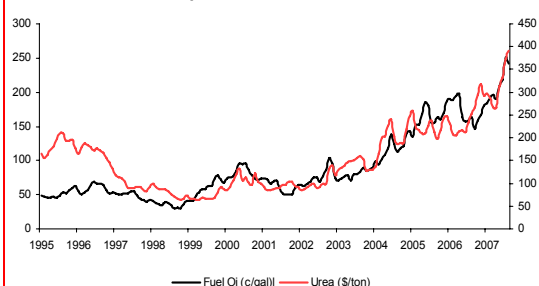
Low-sulfur fuel oil	50%
Gasoil 0.2%	20%
Heavy fuel oil	15%
Others	15%

Source: Company reports, HSBC estimates

This linkage of feedstock costs to crude oil prices – further illustrated in the charts at the bottom of this page – is the primary reason why the marginal ton of production has moved away from the US and to Western Europe and India. While average natural-gas prices have declined 15% since 2005, crude oil prices on the other hand have jumped more than 60% in the same period, significantly changing the picture in terms of production costs and driving urea prices higher in a bid to support the costs of production of the marginal producers.

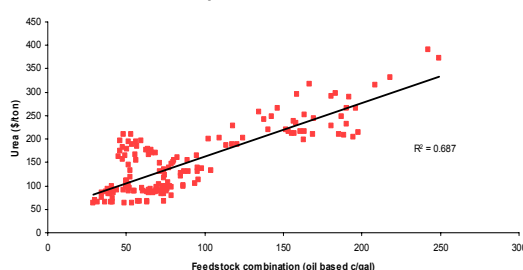
We expect this higher price environment to persist, despite the slackening supply/demand environment, as the outlook for energy prices, crude oil in particular, appears to us to be robust

Fuel oil versus urea prices



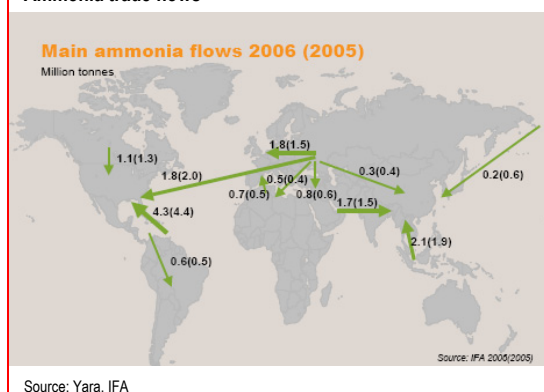
Source: EIA, HSBC

Correlation between oil prices and urea

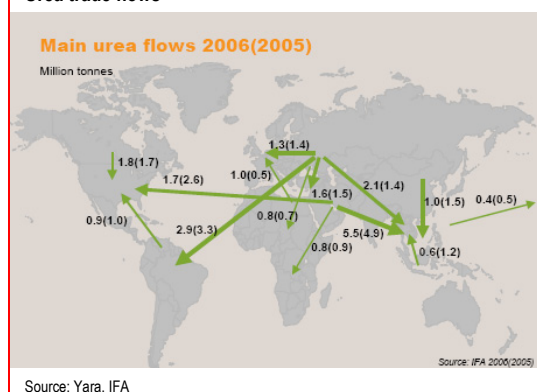


Source: EIA, HSBC

Ammonia trade flows



Urea trade flows



through 2012. The HSBC energy team's long-term average crude oil price forecast of USD60 per bbl translates roughly into urea production costs of about USD350 per ton, which should result in a very strong margin environment for producers such as QAFCO that pay a fixed price for their stranded gas.

This higher urea pricing environment is being exacerbated by developments in the states of the former Soviet Union and in India. Central and Eastern Europe is a significant ammonia and urea production bloc, accounting for roughly 10% of global capacity. The region is also the main trading hub for both ammonia and urea, with the most-liquid markets for them being the Black Sea port of Yuzhny in Ukraine. Most of the world's spot trade takes place at this trading hub, and prices are quoted as being off Yuzhny. Yuzhny FOB (free on board) prices set the benchmark for global urea and ammonia trade. Recently, there has been a sharp increase in the price of gas supplied to Ukraine and other Eastern European states by Russia, which has increased the cost of production in this region.

In Ukraine, the new price for natural gas supplied from Russia has been stated as USD180 per '000 cubic meters delivered, which translates into USD5.10 per mmbtu, elevating the floor pricing for urea to about USD200 per ton.

India, another large urea producer, is reliant on naphtha for more than half of its urea production. Naphtha prices are linked to crude, and averaged USD800 per ton in 2007, pushing up the costs of urea production in India to about USD400 per ton. Given that urea production in India is price-controlled and government-subsidized, the producers have little incentive to seek alternative feedstocks, thereby raising urea production costs across the board in the country.

What we are seeing in urea production is an elevation of production costs – not just in one of two regions with small capacity bases, but across the world, with Asia, Europe, and the US being hit by higher energy costs that translate into higher product prices. We believe that this higher pricing regime for urea is here to stay, despite some slackening in supply/demand fundamentals over the next few years, and we expect low cost producers such as QAFCO to benefit immensely from this trend.

Estimating QAFCO's feedstock and production costs

The first step to estimating QAFCO's margins in an elevated urea price environment is to get a better sense of the company's cost structure, in particular its natural gas contracts with Qatar Petroleum (QP). QAFCO receives all of its

QAFCO: Feedstock cost estimates

2004 raw material costs	246.9	QARm
2004 ammonia production	1,737,622	tons
Natural gas requirement per ton of ammonia	35	mmbtu
Estimated QAFCO 2005 natural gas requirement	60.8	million mmbtu
Estimated cost in QAR per mmbtu of natural gas	4.06	QAR/mmbtu
Estimated cost in USD per mmbtu of natural gas	1.11	USD/mmbtu
2005 raw material costs	376.2	QARm
2005 ammonia production	2,133,800	tons
Natural gas requirement per ton of ammonia	35	mmbtu
Estimated QAFCO 2006 natural gas requirement	74.7	million mmbtu
Estimated cost in QAR per mmbtu of natural gas	5.04	QAR/mmbtu
Estimated cost in USD per mmbtu of NATURAL Gas	1.38	USD/mmbtu
2006 raw material costs	370.8	QARm
2006 ammonia production	2,240,000	tons
Natural gas requirement per ton of ammonia	35	mmbtu
Estimated QAFCO 2006 natural gas requirement	78.4	million mmbtu
Estimated cost in QAR per mmbtu of natural gas	4.73	QAR/mmbtu
Estimated cost in USD per mmbtu of natural gas	1.30	USD/mmbtu

Source: Company reports, HSBC estimates

natural gas at a fixed low price from QP under a long-term agreement. However, the exact cost of the natural gas is not disclosed, with QAFCO in its annual report stating only that “the company receives natural gas from Qatar Petroleum at rates which are lower than the prevailing international rates under an agreement signed on 18 June 1994 for an initial period of 25 years.”

However, with the capacities of its ammonia and urea plants known, and the exact tonnage of production and spending on raw materials disclosed, one can come up with a fairly accurate estimate of the cost of natural gas to QAFCO, as shown in the table at the top of this page. While the estimates have minor variations between 2004 and 2006, it appears fair to assume that QAFCO is paying QP in the area of USD1.25 per mmbtu for its natural gas supplies.

As per our estimates, using a USD1.25 per mmbtu cost of natural gas, QAFCO’s delivered cost to the Asian markets for ammonia would be in the area of USD100 per ton and for urea about USD95 per ton. The detailed cost of production assumptions are broken out in the table at the bottom of this page.

QAFCO: Earnings model

Our earnings model for QAFCO is based on the company’s installed capacity, our forecasts of ammonia and urea pricing, and our production cost model for QAFCO, discussed earlier.

QAFCO is in the midst of a major expansion, QAFCO-V, which will add an estimated 1.5m tons of ammonia and 1.2m tons of urea capacity by the year 2010. This expansion would increase QAFCO’s total ammonia and urea capacities to 3.5m tons and 4.2m tons, respectively, giving it

QAFCO: Production cost estimates

Ammonia: Delivered cost to Asia			Urea: Delivered cost to Asia		
Gas cost (USD/mmbtu)	1.25		Ammonia cost	67.8	USD/ton
Gas consumption	35	mmbtu/ton	Ammonia consumption per ton of urea	0.6	tons
Cost of gas	43.8	USD/ton	Ammonia costs	39.0	USD/ton
Other cash costs	24	USD/ton	Energy costs	12	USD/ton
Total Cash costs	67.8	USD/ton	Conversion costs	15	USD/ton
Freight	30	USD/ton	Freight	30	
Total costs	97.8	USD/ton	Total costs	96.0	

Source: HSBC estimates

estimated 2% and 5.3% shares of these markets globally in 2010.

For our urea and ammonia pricing forecasts, we assume that the driver of nitrogenous fertilizer production costs remains crude oil, and that there is no radical downward shift in crude oil prices through 2010 or any change in the current marginal producer environment for ammonia and urea. We are assuming an average crude oil price of USD60 per barrel through 2012, and we believe that the major risk to this assumption is to the upside.

Furthermore, we are assuming that QAFCO will continue to procure natural gas at USD1.25 per mmbtu from Qatar Petroleum right through the forecast period. We point to the strong relationship between the two companies – QP owns 70% of IQ – and the fact that the primary reason for establishing these industries was the government move to diversify away from reliance on oil, as strong evidence of the stability of this

feedstock pricing regime. Our margin assumptions are derived from our pricing forecasts and production cost estimates. Our earnings model for QAFCO is detailed in the table at the bottom of this page.

Given the backdrop of strong demand growth, underpinned by the low grain stocks, food demand, and biofuels, as well as the drastic change in urea production costs across the world, we believe that low-cost producers such as QAFCO will continue to generate very strong earnings over the next few years. We believe that that the strongest period for QAFCO in terms of earnings will be in 2008-2010, despite the urea cycle's having peaked in terms of operating rates in 2005-06. We estimate that QAFCO will continue to be the largest contributor to IQ's earnings for the forecast period, and that the strength in the fertilizer business should offset some of the cyclical weakness in other segments, such as petrochemicals and steel.

QAFCO: HSBC earnings model (QARm)

	2003	2004	2005	2006	2007	2008e	2009e	2010e	2011e	2012e
QAFCO capacity (000 tons)										
Ammonia		1,667	2,000	2,000	2,000	2,000	2,000	3,500	3,500	3,500
Urea		2,249	2,800	3,000	3,000	3,000	3,000	4,200	4,200	4,200
Melamine		0	0	0	0	0	36	36	36	36
QAFCO sales volumes (000 tons)										
Ammonia	425	464	465	552	402	434	447	977	977	977
Urea	1,891	2,131	2,968	2,987	2,939	2,923	2,940	3,723	3,723	3,723
Melamine				0	0	0	30	36	36	36
Product pricing (USD/ton)										
Ammonia	175.0	241.8	254.4	268.0	290.0	347.4	310.1	270.5	252.0	248.6
Urea	147.2	184.3	233.0	229.2	320.0	383.4	342.2	298.5	278.1	274.3
Melamine							1,873.4	1,829.3	1,763.2	1,763.2
Sales (QAR MM)										
Ammonia	271	408	431	538	424	549	505	962	896	884
Urea	1,013	1,429	2,517	2,492	3,423	4,079	3,662	4,045	3,768	3,717
Melamine	0	0	0	0	0	0	205	240	231	231
Total QAFCO sales	1,284	1,838	2,948	3,031	3,848	4,628	4,371	5,247	4,896	4,832
Product margins (USD/ton)										
Ammonia				153.0	190.0	247.4	210.1	170.5	152.0	148.6
Urea				129.2	225.0	288.4	247.2	203.5	183.1	179.3
Melamine				0			936.7	914.7	881.6	881.6
EBITDA (QAR MM)										
Ammonia				307	278	391	342	606	541	528
Urea				1,405	2,407	3,068	2,645	2,758	2,481	2,430
Melamine				0	0	0	102	120	116	116
Total QAFCO EBITDA				1,712	2,685	3,459	3,089	3,484	3,137	3,074

Source: Company reports, HSBC estimates

Qatar Steel

QASCO profile

Qatar Steel Company (QASCO), established in 1974, was the first integrated steel-producing company in the region of the Gulf Cooperation Council (GCC) for the six Arab states of the Persian Gulf. The company was initially established as a joint venture between the government of Qatar and two Japanese steel companies, Kobe Steel and Tokyo Boeki, and started commercial operations in 1978. In 1997, the joint venture partners sold their interests in the company to the government of Qatar, making QASCO a wholly owned government subsidiary. After the establishment of IQ in 2003, the government's holding in QASCO was transferred to IQ, making QASCO a fully owned subsidiary of IQ.

QASCO is the only steel producer in Qatar, with its production facilities located in Mesaieed Industrial City. QASCO also has interests in two associated companies: Qatar Metals Coating Company (50%), which makes epoxy-coated steel bars, and United Stainless Steel Company in Bahrain (25%), which manufactures cold-rolled stainless steel. In August 2003, QASCO acquired a 100% interest in a wire rod and reinforced bars

(rebar) manufacturing company with facilities in Jebel Ali, Dubai, marking the company's first overseas acquisition. The acquired company was subsequently renamed QASCO Dubai Steel.

Qatar Steel has plans to more than triple its capacity for steel bars, billets, and wire rod coil from the current combined 1.7m tons to more than 5.7m tons by 2012. This expansion is slated to come about in two phases, with the first phase set to begin commercial production in early 2008.

In the first phase of the expansion plans, the company is building a new direct reduction plant with a capacity of 1.5m tons, which would increase total production of direct reduced iron (DRI) to 2.3m tons. The company also plans to expand molten steel production to more than 1.6m tons from 1.0m tons, while installing a new rolling mill that would expand production capacity for steel bars to more than 1.5m tons.

The second phase of capacity expansion at QASCO is slated for 2010 and is expected to expand the company's capacity for steel bars and coil to a combined total of more than 3.0m tons. The total estimated capital expenditure for the combined steel expansion stands at QAR12.3bn,

Qatar Steel: Capacity (000 tons)

	2006	2007e	2008e	2009e	2010e	2011e	2012e
Sponge iron	800	2,300	2,300	2,300	2,300	2,300	2,300
Molten steel	1,038	1,630	1,630	1,630	2,895	2,895	2,895
Billets	1,017	1,600	1,600	1,600	2,846	2,846	2,846
Bars	800	1,500	1,800	1,800	2,600	2,600	2,600
Wire rod coil	240	240	300	300	300	300	300

Source: Company reports, HSBC estimates

which accounts for roughly 60% of IQ's total capital spending outlay planned over the next four years.

QASCO production process

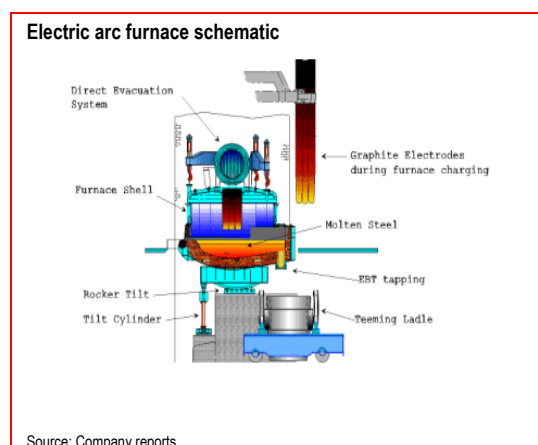
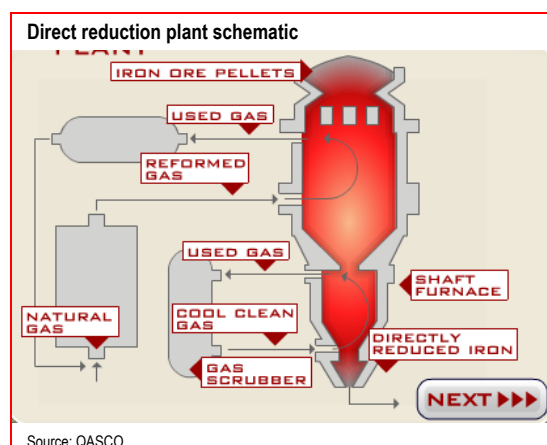
Manufacturers of steel can broadly be classified as either integrated mills or mini-mills. Mini-mills differ from integrated steel producers in that their primary input is scrap metal, whereas the integrated mills make steel by processing iron ore and other raw materials in blast furnaces. Mini-mills are generally considered to be more efficient and technologically advanced than integrated mills, with lower fixed costs and more-effective resource allocation than integrated mills, and are generally more cost-effective.

While mini-mills typically use scrap metal as their primary input, some mills, including QASCO's, use a combination of scrap and direct reduced iron (DRI) to help achieve certain desired properties in the steel produced. QASCO uses iron ore pellets imported from suppliers in Sweden, Brazil, and Bahrain to produce DRI in its direct reduction unit. However, given that its current DRI capacity is lower than its capacity for billets, the company also imports hot briquette iron (HBI) from suppliers in Malaysia, Russia, and Australia. HBI is basically the same chemical product as DRI, and we believe that QASCO could produce roughly 70% of its DRI needs in-house from iron

ore pellets and importing the balance in the form of HBI. QASCO uses a combination of 93% sponge iron (DRI plus HBI) and 7% scrap iron in its manufacturing process for producing molten steel.

The QASCO facility in Mesaieed consists of four units: 1) a direct reduction unit, which converts imported iron-ore pellets into "reduced" iron ore or "sponge iron," 2) an electric arc furnace (EAF), which converts a combination of the sponge iron from the direct reduction unit and steel scrap into molten steel, 3) a continuous casting (CC) unit, in which molten steel from the EAF unit is solidified into semifinished steel billets, and 4) a rolling mill, which hot-rolls the steel billets from the CC unit into steel bars.

While QASCO is an importer of HBI, given that its capacity for sponge iron is less than its capacity for billets, with the first phase of the announced capacity expansion slated to come onstream in 2008, the company will be in a surplus sponge-iron position and turn into a net exporter of HBI. When operating at full capacity following the expansion, and assuming a continued usage of 7% scrap in molten steelmaking, QASCO should have a surplus of roughly 580kt of DRI from 2008 onward, we estimate. The company has already entered into an agreement with BHP Billiton to market



roughly 350kt tonnes of HBI into the Asian markets.

The bulk of the billets produced by QASCO are processed into bars, and the remainder are sold directly to customers. The company produces plain as well as formed and deformed bars. We estimate that roughly 80% of the billets produced are used up for bar production, and that the remaining 20% are exported, mainly to the United Arab Emirates (UAE) and Saudi Arabia. With the new rolling mill, which is slated to increase bar capacity to more than 1.5m tons, to come onstream in 2008, we estimate that all of the company's billet production will be consumed internally.

Steel demand in Qatar

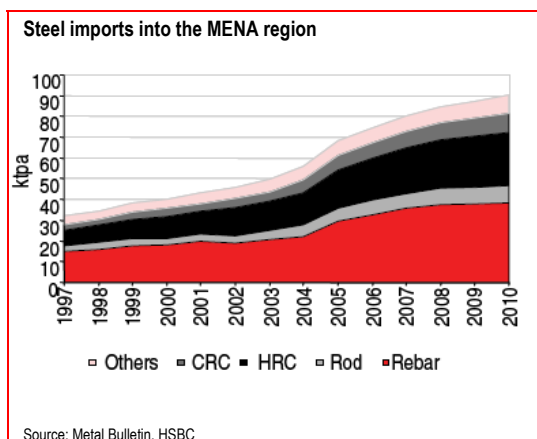
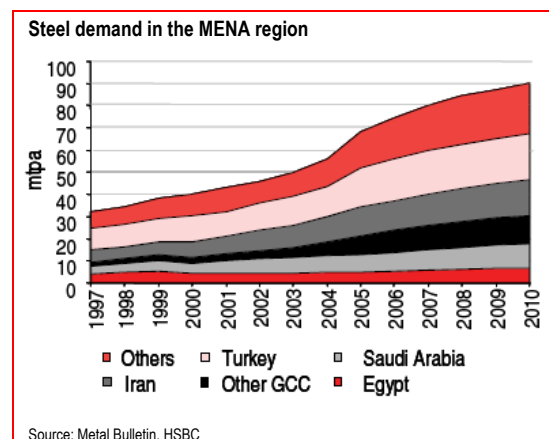
Steel demand in the MENA region – the Middle East and North Africa, including Turkey – is dominated by long products such as rebar, which is the primary form of finished steel in the region. Long products are primarily used in the construction industry, and the bulk of the steel demand and investments in steel capacity in the region have been driven by growth in domestic demand emanating from a strong construction boom across the region.

MENA steel demand is expected by Metal Bulletin to increase from 70m tons in 2007 to

around 100mt in 2012. If one were to consider the Middle East alone, steel consumption in the region was an estimated 52m tons in 2007 and is expected to reach 80m tons by 2012, a CAGR of more than 9%. The bulk of steel production in the region is from the DRI method that QASCO uses, in which imported iron ore is first reduced and then converted into steel using an electric arc furnace. Pure DRI, rather than scrap, is the input of choice across the region for steel production, with roughly 60% of production using DRI, 25% using scrap, and the balance from the blast furnace method.

Due to rising steel demand, the Middle East will become a net importer of semifinished steel, mainly billet, slab, and HR coils. The large increase in consumption of semis and flat products has been partly met by imports, which rose from 6.4m tons in 1997 to about 25m tons in 2005, and are expected to reach 35m tons by 2012.

Qatar has had a construction boom much like that in the rest of the Middle East, with several large and small projects throughout the country. The main factors driving this boom are a windfall from the elevated energy-price environment, high population growth, and rapid industrial expansion, both in energy and non-energy sectors.



Country of Qatar: Building and construction value added (QARm)

	2000	2001	2002	2003	2004	2005	CAGR
Gross output	3,561	3,718	4,434	5,071	9,800	13,230	30.0%
Intermediate consumption	2,006	2,117	2,551	2,734	5,396	7,251	29.3%
Gross value added	1,556	1,602	1,882	2,337	4,405	5,979	30.9%
Depreciation	177	164	197	229	361	507	23.5%
Net value added	1,379	1,438	1,686	2,108	4,043	5,471	31.7%
Employee compensation	970	968	1,092	1,237	2,059	2,898	24.5%
Operating surplus	409	470	594	870	1,985	2,573	44.4%

Source: Qatar General Secretariat for Development Planning, HSBC

While government statistics on the construction boom in Qatar are fairly dated and inevitably lag behind current timelines by 18 to 24 months, the little data that are available show rapid growth in the construction sector. The Qatari government estimates that gross output for the building and construction market grew at an average annual rate of 30% between 2000 and 2005 – and while these data are at least two years old, anecdotal evidence suggests few signs of any slowdown in construction. The construction boom has also been helped by a very high level of public expenditure, as the government of Qatar has decided to use strong oil revenues to revamp infrastructure throughout the country. The Public Works Authority has plans to invest more than USD130bn over the next five years to develop and renovate a wide range of infrastructure projects. All of this investment in the construction sector in Qatar will continue to drive steel demand at 9-10% annually, in our opinion.

Steel economics and pricing

The rest of IQ's businesses – fertilizers, petrochemicals, and methanol – are built around domestic feedstock advantage and are primarily used to supply the export market. However, QASCO primarily supplies the booming domestic market for steel and has no real cost advantage over its global peers. The company imports its raw materials, primarily iron ore pellets and HBI, from Sweden, Brazil, and Malaysia. As QASCO is an electric arc furnace (EAF)-based producer, the company does not need coking coal for its

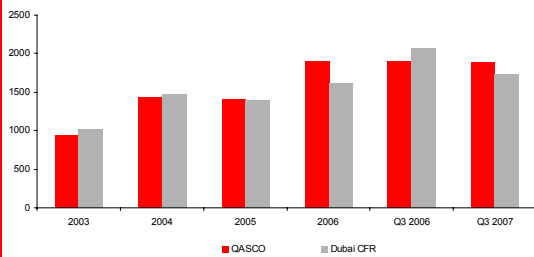
facilities, which would also have to be imported; instead, it uses methane, supplied by QP to reduce the iron ore into DRI. The only real cost advantage is that natural gas for the reduction process is supplied by QP at low fixed rates.

However, the bulk of the cost of goods sold is undoubtedly iron ore, which the company imports at international market prices. Given the lack of cost advantage vis-à-vis international peers, the company manages to be the supplier of choice to the domestic market because of a 20% tariff imposed by the government on steel imports into the country.

The history of the tariffs on imported steel can be traced back to the mid-1980s. Then, because of a decline in global prices and a drop in demand, foreign steel flooded the Qatari market, leading to QASCO's becoming uncompetitive. In response to cheaper Japanese and Korean imports, the government imposed a 20% tariff on bars similar to those produced domestically, and this tariff has remained at 20% levels for the last two decades.

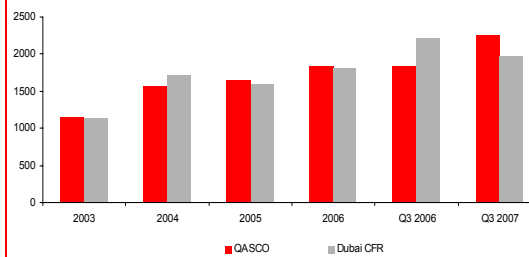
While there is likely to be investor concern about the sustainability of this tariff protection mechanism, we view the tariff regime – it has been in place for more than 20 years – as fairly stable in the near to medium term. It is useful to keep in mind that the government of Qatar, through QP, controls 70% of QASCO, and that the planned investments of more than QAR12.3bn in capacity expansions over the next few years

Steel billet pricing: QASCO vs. Dubai CFR (QAR/ton)



Source: Company reports, ME Steel, HSBC

Rebar pricing: QASCO vs. Dubai CFR (QAR/ton)



Source: Company reports, ME Steel, HSBC

would be placed at risk if the tariff regime were to be changed.

The lack of a feedstock advantage and the fact that the domestic industry is protected from imports through tariffs make the domestic pricing environment for QASCO's products linked to the landed cost of steel into the Middle East, net of tariffs and transportation costs. In the charts at the top of this page, we compare QASCO's realized prices over the last few years with the prices of steel imported into Dubai. The sources of the Dubai imports are largely Russia and other members of the Commonwealth of Independent States (CIS).

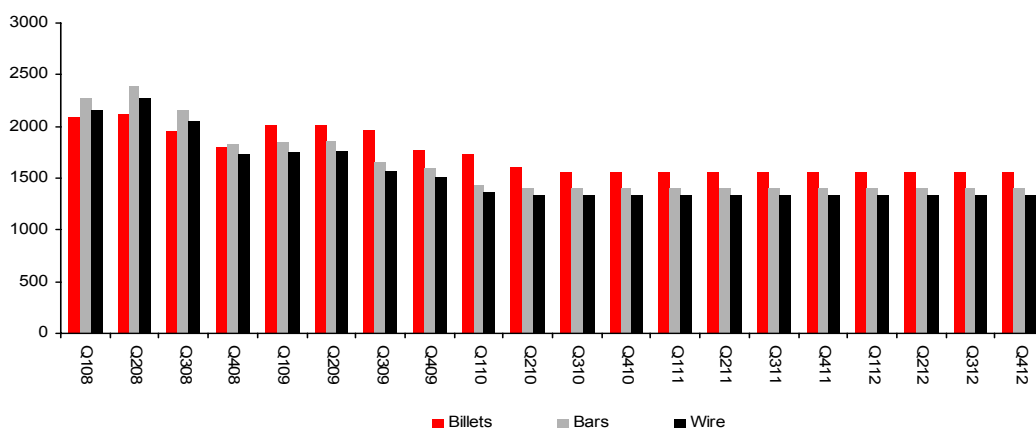
As can be seen from the charts, QASCO's realized price has historically tracked the price of imported product into Dubai relatively closely. Based on this relationship, for the purposes of our

forecasting model, we are using Dubai import prices as a proxy for QASCO's realized prices in the domestic market.

Based on the relationship with import steel prices and the pricing forecasts from HSBC's global steel research team, we come up with our pricing forecasts for QASCO's products (see the chart at the bottom of this page).

In terms of margin analysis, we need to build in the use of imported market-linked ore, as well as low power and gas costs because of the supply contract with QP. Furthermore, with QASCO moving to a surplus position in HBI, under the planned expansion in early 2008, we believe that there is some room for margin expansion, given that the company will no longer have to import HBI.

QASCO: Pricing forecasts (QAR/ton)



Source: HSBC estimates

Qatar Steel: Earnings model (QARm)

	2006	2007	2008e	2009e	2010e	2011e	2012e
Qatar Steel sales volumes (000 tons)							
DRI	0	0	462	539	0	0	0
Billets	89	0	0	0	0	0	0
Bars	1,278	1,376	1,440	1,440	2,240	2,240	2,240
Coil	143	227	300	300	300	300	300
Wire rod coil	0	24	300	300	300	300	300
Product pricing (QAR/ton)							
DRI		546	692	582			
Billets	1,897	2,022	1,990	1,935	1,614	1,557	1,557
Bars	1,846	2,413	2,165	1,739	1,411	1,405	1,405
Coil	1,779	2,292	2,056	1,652	1,341	1,335	1,335
Wire rod coil							
Sales (QARm)							
DRI	0	0	320	314	0	0	0
Billets	169	0	0	0	0	0	0
Bars	2,359	3,320	3,117	2,504	3,161	3,148	3,148
Coil	254	520	617	496	402	400	400
Wire rod coil	0	0	0	0	0	0	0
Total Qatar Steel sales	2,782	3,840	4,053	3,314	3,563	3,548	3,548
Margins (QAR/ton)							
DRI		126	152	122	0	0	0
Billets	436	505	517	522	444	413	397
Bars	425	603	563	470	388	372	358
Coil	409	573	535	446	369	354	340
Wire rod coil	0	0	0	0	0	0	0
EBITDA (QAR MM)							
DRI	0	0	70	66	0	0	0
Billets	39	0	0	0	0	0	0
Bars	543	830	810	676	869	834	803
Coil	59	130	160	134	111	106	102
Wire rod coil	0	0	0	0	0	0	0
Total Qatar Steel EBITDA	640	960	1,041	876	980	940	905

Source: Company reports, HSBC estimates

In the table at the top of this page, we detail our earnings model for QASCO, along with our product pricing and margin forecasts. We expect to see a significant decline in global steel prices going into 2009-10.

While we expect to see a sharp decline in steel pricing, we believe that domestic demand for steel in Qatar is likely to remain strong and that the capacity being added by QASCO through 2010 will be absorbed by the domestic market for the most part. We expect to see increased capacity and higher sales volumes offset margin and pricing declines in steel to a large extent for QASCO, and we are forecasting that EBITDA will remain fairly stable in the QAR900m-1bn range through 2012 (see the table above).

We have been fairly conservative in our estimates for steel pricing, and given the possibilities of continued increases in iron ore prices globally, particularly with the spate of consolidation taking place in the iron ore industry, we could see a secular upward change in iron ore prices that would raise the marginal cost of steel production globally. In such an environment, we could witness a continued environment for higher global steel prices. The risk to our steel pricing forecasts remains to the upside, in our opinion.

Iron ore contract settlements should drive steel prices higher

HSBC are joint financial adviser to BHP Billiton Plc and BHP Billiton Ltd in their offer for Rio Tinto Plc and Rio Tinto Ltd.

The Wall Street Journal on 19 February 2007 reported that Vale of Brazil, formerly named Cia. Vale do Rio Doce, or CVRD – one of the largest producers of iron ore – globally had won a 65% price increase in iron ore contract prices in annual negotiations from Japanese and South Korean steel producers. Global iron ore prices are normally set in annual negotiations between BHP Billiton, Rio Tinto, and Vale, which together control more than 70% of the world's exported iron ore and producers, with the first set of negotiated agreements generally serving as a benchmark for other deals. In light of the 65% increase in iron ore prices specified by Vale, we expect to see similar iron ore prices globally.

HSBC's steel research team estimates that raw-material prices for steel could escalate by as much as USD220 per ton in 2008, leading to a USD150 per ton increase in prices. While in the global context, non-integrated producers experience significant margin compression because of not being able to pass cost increases through to customers, QASCO is in better shape, in our opinion, given the natural tariff barrier to exports and very strong domestic steel demand. We expect the company to be able to protect its margins in the near term, despite significant raw-material pressures.

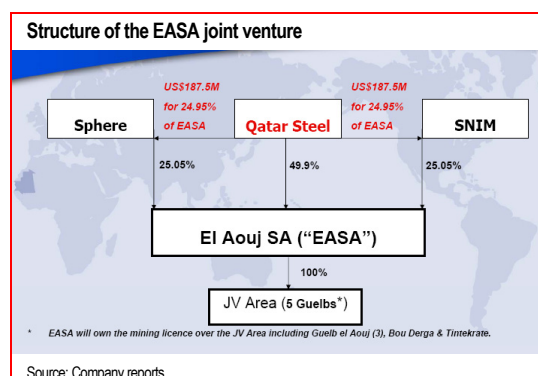
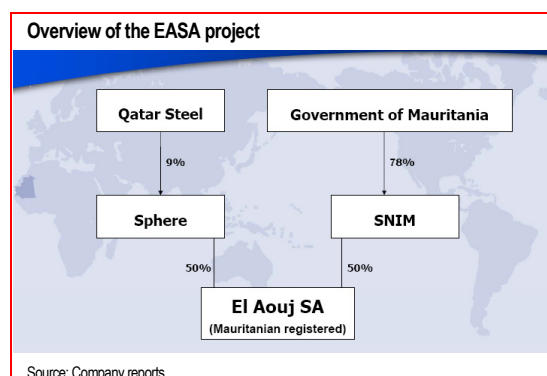
Longer-term iron ore solution: The Mauritania project

QASCO holds a 9% stake in Sphere Investments; a West Africa-focused iron ore company that is listed

on the Australian Stock Exchange. The company's flagship project is the Guelb el Aouj (EASA) iron ore project in Mauritania, West Africa. Sphere is developing the EASE project in partnership with Société Nationale Industrielle et Minière (SNIM), Mauritania's existing iron ore producer.

The project has estimated reserves of 472m tons, and Sphere is aiming for 7m tons of annual iron ore pellet production, all of which would be exported. Sphere estimates the operating costs of the project in the area of USD40 per ton, which would be highly cost-competitive in the current pricing environment. The initial capital costs for the project have been estimated at USD1.9bn, with a further USD250m set aside for cost escalation. Sphere expects financial closure for the project in Q4'08 and commissioning of the project by the first half of 2011.

QASCO has strategically positioned itself to benefit from the Mauritania project, with a 9% stake in Sphere and a further 15% stake in the EASA project, with board approval to acquire an additional 34.9%, for a total consideration of USD375m. While the project faces considerable geopolitical and commissioning risks, if it does come onstream in time, it would meet all of QASCO's requirement for iron ore pellets, removing the company's dependence on iron ore imports from its current suppliers, eliminating price volatility, and significantly enhancing the company's long-term competitiveness in steel production.



Petrochemicals and QAPCO

QAPCO profile

The Qatar Petrochemical Company (QAPCO) is a joint venture between Industries Qatar (IQ), which owns 80%, and Total Petrochemicals of France, which holds the balance of 20%. QAPCO was established in 1974 with the aim of using ethane gas streams from petroleum production in Qatar to manufacture basic petrochemicals. The company produces ethylene, low-density polyethylene (LDPE), and a small amount of solid sulfur.

QAPCO operates one ethylene cracker in Mesaieed, and recently completed a debottlenecking project, expanding its capacity to 720kt from 525kt. The company is integrated into LDPE production, with LDPE capacity of 410kt.

QAPCO has ambitious plans for petrochemical capacity expansion over the next couple of years, first with a 45% share of the 1.3m ton Ras Laffan ethylene cracker and then with a 63% share of a new 450kt linear low-density polyethylene (LLDPE) plant, both of which are slated to start commercial production in early 2009. The Ras Laffan cracker is jointly owned by Q-Chem II and Qatofin. Q-Chem II is a joint venture between Chevron Phillips and Qatar Petroleum, and Qatofin is a joint venture between Atofina and

QAPCO. The LLDPE plant is being brought onstream by Qatofin. Ethylene for the Qatofin LLDPE plant is to be supplied by the Ras Laffan cracker through a 120km pipeline from Ras Laffan to Mesaieed that is under construction and that is to transport ethylene to the LLDPE facility. QAPCO also plans to further expand its LDPE capacity by 250kt to its existing 410kt base, taking total capacity to 660kt by 2011. We estimate that IQ's share of the capital expenditures for these expansions is QAR3.04bn.

Ethylene and polyethylene basics

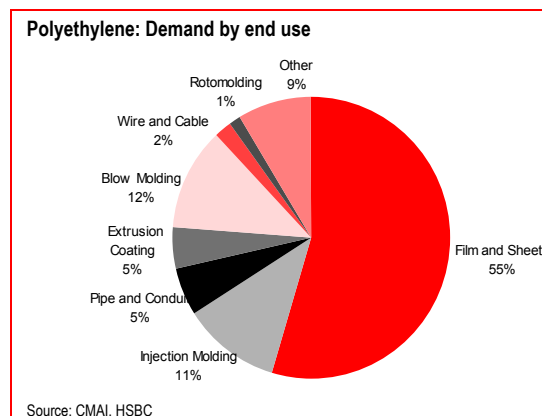
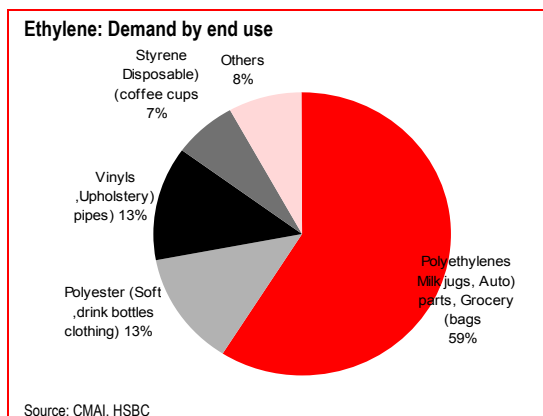
The basic chemical industry includes several large-volume chemicals and plastics, which are manipulated through a host of complex reactions into a dizzying array of byproducts and extended chains. The most important basic chemicals are ethylene, which accounts for roughly 40% of global chemical trade by volume, and polyethylene, which is the largest ethylene polymer and therefore driven by the ethylene cycle.

Ethylene is the basic hydrocarbon that forms the backbone of 40% of the global petrochemical and polymer industry, and is the world's most

QAPCO: Capacity (000 tons)

	2003	2004	2005	2006	2007e	2008e	2009e	2010e	2011e	2012e
Ethylene	525	525	525	525	720	720	1,100	1,100	1,100	1,100
LDPE	410	410	410	410	410	410	410	410	660	660
LLDPE	—	—	—	—	—	—	285	285	285	285
Sulfur	70	70	70	70	70	70	70	70	70	70

Source: Company reports, HSBC estimates



important chemical building block. Ethylene, while in itself not a consumer product, is processed to become products such as vinyl upholstery for cars, polyethylene bags for potato chips, styrene cups for hot liquids, and polyester bottles for soft drinks.

Ethylene is a flammable, colorless gas, which is difficult to transport, limiting direct international trade in the product. Instead of moving ethylene, the bulk of all international trade is in its derivatives. Most of these are solids, such as polyethylene pellets or PET-flakes, which can be transported at ambient temperatures and pressures in bulk containers on ships, trains, or rail cars.

Given the widespread usage and consequent importance of ethylene to the petrochemical industry, the supply/demand balance of ethylene is the constraining factor for the whole industry. Thus, the ethylene cycle is often viewed as a very good proxy for the global commodity cycle. The

operating economics of the industry are influenced by a number of factors, the most important of which are industry operating rates, driven primarily by supply/demand balances. It is equally important, however, in our opinion, to understand the production economics and feedstock cost dynamics that are shaping the petrochemical industry.

Ethylene production and economics

Ethylene is produced by “cracking” or separating bonds in hydrocarbon chains to produce ethylene monomer. Chemically, ethylene consists of two carbon atoms joined by a double bond, along with four hydrogen atoms. Along with the desired ethylene, cracking also produces petrochemical co-products such as propylene and benzene.

Ethylene is unique among hydrocarbons, because it can be produced from several different

Feedstock requirements and co-product credits per ton of ethylene

Mass per mass of feed	Ethane	Propane	Butane	Light naphtha	Full-range naphtha		Gas oil
					High severity	Low severity	
Feed	1.29	2.38	2.51	2.98	2.94	3.33	3.85
Ethylene	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hydrogen	0.11	0.05	0.04	0.05	0.06	0.04	0.04
Fuel gas	0.08	0.65	0.56	0.51	0.50	0.45	0.43
Propylene	0.04	0.40	0.43	0.46	0.45	0.55	0.62
C4s	0.04	0.10	0.26	0.26	0.23	0.35	0.36
Pygas	0.02	0.16	0.18	0.55	0.52	0.70	0.71
Fuel oil	0.00	0.01	0.04	0.15	0.18	0.24	0.69

Source: CMAI, HSBC estimates

feedstocks. The types of co-products produced and the amount of each will depend on the feedstock supplied to the ethylene cracker. Typical feedstocks include ethane, propane, normal butane, and naphtha. Ethane feedstocks produce the most ethylene and the least co-products, while naphtha produces the least ethylene and the most co-products (see the table at the bottom of the previous page for feedstock requirements and co-product output by type).

The cash cost to produce a ton of ethylene from naphtha is generally lower than it is to produce the same ton of ethylene from ethane. This is primarily due to the substantial co-product credits realized by the naphtha cracker, which offset the higher feedstock costs. The decision to build an ethane cracker, rather than a naphtha cracker, is not based solely on providing the lowest-cost ethylene; maximizing return on investment is the key criterion. Availability of feedstock to build on a large scale, capital costs, and the ability to market co-products and maximize their relative values are all considerations when determining the configuration of an ethylene cracker. Perhaps as important as cost structure are the co-product streams produced from cracking liquids. A petrochemical producer may choose to focus its efforts or believe that it has a strategic advantage in the processing of co-products, which in turn influences feedstock selection. If a producer is forward-integrated into propylene or benzene derivatives (styrene, cumene, and cyclohexane, for example), ethane cracking will not provide sufficient co-product volumes.

Availability is a primary consideration of feedstock selection on a global basis. In the Middle East, ethane crackers have been dominant, because suppliers have made ethane readily available from abundant natural gas supplies. In contrast, many Asian nations have limited energy resources due either to the lack of local feedstock

or to infrastructure constraints. Naphtha is more economical to ship than other feedstock options, such as ethane and propane, so naphtha is the most logical feedstock for importing regions. Other regions, primarily the US and Europe, have in place highly developed infrastructure for the movement, refining, and storage of oil and gas. This has produced a mix of technologies and flexibility in feedstock consumption at many facilities.

The Middle East: Redefining the ethylene cost curve

While reams of research notes have been written about the surge in Middle Eastern capacity over the last few years, it is worth keeping in mind that the Middle East has been a player in the basic chemical markets for decades. Saudi Arabia first entered the ethylene market in the late 1980s with major joint-venture initiatives with Shell, Exxon, and Mobil. By 1995, the country had 2.8m tons, or 64%, of the capacity in the region. The real spurt in Middle Eastern capacity, though, has been driven as a result of elevated feedstock costs in the rest of the world – high crude oil prices and the sharp increase in US natural gas costs – and the emergence of China as a huge demand driver.

Today more than 40 large ethylene crackers either are in operation or slated to come onstream by 2012 in the region, and this is expected to take the Middle East's share of global ethylene capacity from the current 11% to more than 20% by 2012. The crackers span a vast geographic base in the region, with facilities in Abu Dhabi, Iran, Qatar, Kuwait, and Saudi Arabia. Much of the planned capacity is based on gas streams that already exist and where the gas is either reinjected or awaiting accompanying infrastructure projects.

The region is developing quickly, and these projects do not simply exploit low-cost gas. In all cases, more than 75% of production is destined for export, principally to Asia and, to a lesser

extent, Europe, allowing for the countries to increase hard currency revenues without breaking OPEC oil export quotas, as well as providing diversification away from crude oil and generating employment. The job creation rationale is particularly strong in both Saudi Arabia and Iran, which have large populations, with an estimated 50% of the residents under the age of 20.

Ethane-based crackers in the region typically have fixed, long-term feedstock supply contracts for ethane ranging between USD0.75 and USD1.25 per mmbtu in equivalent natural-gas costs. This translates into a large feedstock advantage in a world where crude oil currently trades at around USD90 per bbl and natural gas in excess of USD6 per mmbtu. Even if we were to assume a normalized feedstock cost level of crude oil at USD40/bbl and gas at USD6 per mmbtu, the average feedstock cost advantage for a Middle Eastern producer procuring gas at USD0.75 per mmbtu equates to roughly 20c/lb (see the table at the bottom of this page). To put that number in perspective, ethylene currently trades for about 50c/lb.

The next question that presents itself is: How sustainable is this cost advantage? Our answer to this query would be to point to the bottom half of the table below – the Middle East's cost advantage in ethylene production over the rest of the world would be negligible, if we were to return to a world of USD20 per bbl crude oil and USD2.50 per mmbtu natural gas, a scenario we consider as highly unlikely, to say the least.

Given this huge cost advantage that the Middle Eastern producers have, Europe- and US-based producers have very little incentive to invest in new domestic capacity and have pretty much shied away from new investments. The bulk of the capacity additions planned through 2012 are therefore centered either in the Middle East or in and around China, which has a large domestic captive market. We estimate that the Middle East and China combined will account for more than 80% of new ethylene capacity added through 2012.

Regional average ethylene economics (normalized view)

Region	Variable ethylene cost		Cash ethylene cost		Cost advantage vs. US ethane
	USD/ton	C/lb	USD/ton	C/lb	C/lb
Western Canada - ethane	310.2	14.1	367.2	16.7	3.3
US Gulf - naphtha	362.8	16.5	411.1	18.6	0.9
US Gulf - ethane	382.4	17.3	419.0	19.0	0.0
Europe - naphtha	459.1	20.8	547.1	24.8	(3.5)
Europe - gas	(78.2)	(3.5)	(25.3)	(1.1)	20.9
Saudi - gas	33.8	1.5	67.0	3.0	15.8
S Korea - naphtha	435.9	19.8	483.0	21.9	(2.4)
Singapore - naphtha	324.9	14.7	349.6	15.9	2.6

Feedstock assumptions: US natural gas USD6.00/mmbtu - crude oil USD40/bbl

Regional average ethylene economics - 1990s

Western Canada - ethane	81	3.68	139	6.30	3.3
US Gulf - naphtha	169	7.68	238	10.77	(0.7)
US Gulf - ethane	154	6.97	208	9.44	0.0
Europe - naphtha	234	10.63	347	15.72	(3.7)
Europe - gas	50	2.25	121	5.50	4.7
Saudi - gas	62	2.82	116	5.25	4.1
S Korea - naphtha	256	11.62	346	15.70	(4.7)
Singapore - naphtha	203	9.20	278	12.62	(2.2)

Feedstock assumptions: US natural gas USD2.00/mmbtu - crude oil USD21.50/bbl

Source: CMAI, HSBC estimates

Supply/demand outlook

We believe that the commodity chemical industry is likely to see waves of ethylene capacity added over the next five years, starting with a focused wave in the Middle East (Saudi Arabia and Iran) this year and next, coupled with a small one in China in the same period (see the table below).

We expect this wave to be followed by another, similar Middle East wave from 2010 to 2012 (in Kuwait, Abu Dhabi, Saudi Arabia, Qatar, and more in Iran), as well as a continuation of capacity addition in China.

These waves could be destructive to the industry's

profitability – particularly for producers that do not have a cost-advantaged position – as total capacity additions could be as high as 35m tons. Several projects are on the table for the Middle East, and a large and growing number of local companies are petitioning the Chinese government for permission to build local ethylene capacity. If permitting is widespread, China could overbuild, as it has done for other chemical and non-chemical products.

There has been significant debate in the last few years around the timing of Middle Eastern capacity additions. Cycle bulls cite project management issues, shortages of engineers, and

Global ethylene capacity additions greater than 500,000 mt

Company	Location	Country	2007	2008e	2009e	2010e	2011e	2012e
Arvand PC (Olefins # 8)\	Bandar Imam	Iran				550	550	
Arya Sasol PC (NPC Olefins # 9)	Bandar Assaluyeh	Iran	125	875				
Boushehr PC	Bandar Assaluyeh	Iran					169	506
Jam PC (Olefins # 10)	Bandar Assaluyeh	Iran		990	330			
Marun PC (Olefins # 7)	Bandar Imam	Iran	825					
TKOC	Shuaiba, Kuwait	Kuwait		425	425			
QP/ExxonMobil	Ras Laffan, Qatar	Qatar						650
QP/Honam	Mesaieed, Qatar	Qatar						900
RLOC	Ras Laffan, Qatar	Qatar			975	325		
Borouge	Ruwais, United Arab Emirates	UAE				1,050	350	
SHARQ	Al Jubail	Saudi Arabia		300	900			
Kayan	Al Jubail	Saudi Arabia			331	994		
Petro-Rabigh	Rabigh	Saudi Arabia		163	1,138			
SEPC	Al Jubail, Saudi Arabia	Saudi Arabia		375	625			
Saudi Aramco/Dow	Ras Tanura	Saudi Arabia						700
Saudi Polymers	Al Jubail	Saudi Arabia					600	600
SIPCHEM	Al Jubail, Saudi Arabia	Saudi Arabia					500	500
Yansab	Yanbu, Saudi Arabia	Saudi Arabia		650	650			
Indian Oil CL	Panipat, Haryana	India			200	600		
Chengdu PC	Chengdu, Sichuan	China					400	400
Chengdu PC	Daqing, Heilong, China	China					600	
Chengdu PC	Dushanzi, Xinjinag, China	China			500	500		
Fujian PC/Sinopec/Aramco/EM	Guangzhou, Fujian	China			800			
Fujian PC/Sinopec/Aramco/EM	Fushun, Liaoning, China	China				800		
SINOPEC Wuhan	Wuhan, Hubei	China					800	
CNOOC & Shell PC	Tianjin, Tianjin, China	China			500	500		
ZRCC	Ningbo, Zhejiang	China			250	750		
LG Chemical	Yeosu	South Korea	143	717				
FPCC	Mai Liao, Taiwan	Taiwan	700	500				
Shell JV	Pulau Ayer Merbau, Singapore	Singapore				800		
MOC	Rayong City, Rayong	Thailand				450	450	
PTT Polyethylene	Map Ta Phut, Rayong, Thailand	Thailand			250	750		
Large capacity additions			1,793	4,995	7,874	8,069	4,419	4,256
Share of global capacity			1.4%	3.8%	5.6%	5.4%	2.8%	2.7%
Smaller additions/debottlenecks			3,171	1,007	1,449	762	1,605	110
Share of global capacity			2.5%	0.8%	1.0%	0.5%	1.0%	0.1%
Total capacity additions			4,964	6,002	9,323	8,831	6,024	4,366
Share of global capacity			4.0%	4.6%	6.6%	5.9%	3.9%	2.7%
Global capacity			125,231	131,233	140,556	149,387	155,411	159,778

Source: CMAI, HSBC estimates

lack of visibility into the region as reasons for capacity-addition delays and capacity-forecasting errors. We agree with the argument about lack of visibility, especially when it comes to Iran, but we disagree with the conclusion that capacity-addition forecasts for the Middle East are overstated.

As a starting point, in the analysis that follows, we examine the industry consultant CMAI's ethylene supply-side forecasts over the past 20 years. We compared forecasts and actual capacity data for forecast periods ranging from one year out to five years out, with a positive number indicating that the forecast capacity is higher by that percentage than the actual capacity reported for a given year. What is clear from the exhibit that follows is that despite much talk about errors in forecasting Middle Eastern capacity, industry consultants have been accurate in predicting capacity in the region, especially on the horizon of one to two years out. Stemming from this analysis, we used CMAI's supply-addition forecast as our base case in our ethylene supply/demand analysis.

Average ethylene capacity forecasting error since 1985 (%)

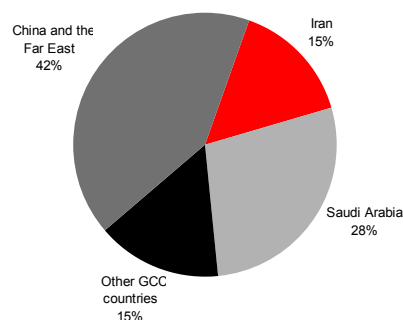
	1 year	2 years	3 years	4 years	5 years
North America	0.6	1.4	1.4	1.0	4.6
South America	1.0	3.2	2.8	6.3	5.4
Western Europe	0.0	-0.2	-0.1	-1.3	5.3
Eastern Europe	2.1	6.3	12.3	18.2	7.2
Africa and ME	0.1	-0.2	2.6	2.8	2.8
Asia and Pacific	0.9	2.0	2.7	3.8	4.1
World total	0.6	1.5	2.2	2.6	2.5

Source: CMAI, HSBC

We expect Asia and the Middle East to account for more than 95% of the global ethylene capacity additions between 2007 and 2012. The chart that follows looks at regional ethylene capacity additions in Asia and the Middle East from 2007-2012, showing that the bulk of capacity additions are expected in the Middle East – in particular, in the Gulf Cooperation Council (GCC) member countries, including Saudi Arabia. Iran, the subject of the greatest debate over delayed

projects, accounts for the smallest proportion of capacity additions in the region.

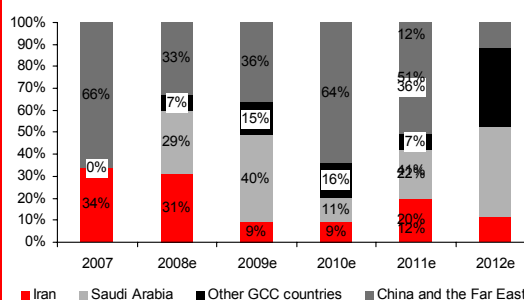
Asian capacity additions, 2007e-2012e



Source: CMAI, HSBC estimates

If we were to split the capacity coming onstream over the next five years annually by region, we see that the near-term projects, which tend to be the ones with the highest visibility, are those coming onstream in Iran, Saudi Arabia, and China, whereas the slightly longer-term projects are expected to come online in the GCC region (see the chart that follows).

Share of capacity additions by year, by region



Source: CMAI, HSBC estimates

In the table at the top of the next page, we lay out our base-case global ethylene supply/demand model and compare it with CMAI's forecasts. As discussed earlier, we are using CMAI's supply data to forecast supply growth, and a 1.2x global GDP growth multiplier to come up with our demand growth forecast. From this table, two observations become apparent: (1) We are more conservative in our demand growth assumptions

Global ethylene supply/demand forecast (000 tons)

	2007	2008e	2009e	2010e	2011e
HSBC base case					
Global capacity	125,231	131,233	140,556	149,387	155,411
Global demand	114,806	118,773	123,365	128,287	133,670
Global GDP growth	3.2%	3.0%	3.5%	3.2%	3.3%
Global demand growth	3.8%	3.5%	3.9%	4.0%	4.2%
Global capacity utilization	91.7%	90.5%	87.8%	85.9%	86.0%
CMAI base case					
	2007	2008e	2009e	2010e	2011e
Global capacity	125,232	131,234	140,557	149,388	155,412
Global demand	114,806	120,480	126,069	131,370	136,281
Global demand growth	3.8%	4.9%	4.6%	4.2%	3.7%
Implied global GDP growth	3.2%	4.1%	3.9%	3.5%	3.1%
Global capacity utilization	91.7%	91.8%	89.7%	87.9%	87.7%

Source: CMAI, HSBC estimates

than CMAI, stemming from a lower global GDP forecast provided by the HSBC economics team, and (2) despite factoring in a below-consensus global GDP growth forecast of 3.0% for 2008 (the IMF is forecasting 3.3%, whereas CMAI's implied global GDP forecast is 4.1%), we still see global ethylene operating rates in 2008 north of 90%.

In terms of global ethylene margins, our base-case ethylene supply/demand model implies margins between peak and midcycle levels in 2008, with a move toward a trough thereafter and a possible trough by 2011.

QAPCO: Cost structure and earnings model

To build our cost structure model for QAPCO for the production of ethylene and LDPE, we are applying USD1.25 per mmbtu in natural gas costs, which we had earlier derived as being the cost of gas for QAFCO. We are assuming that QAPCO gets its ethane allocations at the same gas-equivalent cost of USD1.25 per mmbtu that QAFCO pays for natural gas. The table at the bottom of this page details our cost estimates for QAPCO per ton of ethylene, LDPE, and LLDPE. We believe that given its fixed-price feedstock arrangement with QP, QAPCO should continue to be highly cost-competitive in basic petrochemical

QAPCO: Cost structure estimates

Ethylene costs			LDPE costs		
USD1.25 in natural gas implies	USD61	per ton of ethane	Ethylene consumption	1.025	lb/lb of LDPE
Ethane requirement for 1 ton of ethylene	1.29	per ton	Ethylene costs	11.9	c/lb
Ethane costs	USD79	USD/ton	Utilities	2.4	c/lb
Ethane costs	3.6	c/lb	Direct costs	2.3	c/lb
Catalysts and chemicals	0.08	c/lb	Other costs	5.0	c/lb
Total raw materials	3.7	c/lb	Total LDPE costs	21.5	c/lb
Byproduct credits	9.4		Costs in USD/ton	473	USD/ton
Utilities	10.0		LLDPE costs		
Total variable costs	4.3		Ethylene consumption	0.94	lb/lb of LLDPE
Direct costs			Ethylene costs	10.9	c/lb
Operating labor	0.5		Utilities	2.0	c/lb
Maintenance	2.0		Direct costs	2.3	c/lb
Overhead	1.8		Other costs	5.5	c/lb
Taxes and insurance	3.0		Total LLDPE costs	20.6	c/lb
Total ethylene costs	11.6	c/lb	Costs in USD/ton	455	USD/ton
Costs in USD/ton	255	USD/ton			

Source: CMAI, HSBC estimates

production, despite the downturn in the supply/demand environment that we are forecasting for the next few years.

The factor to be considered in addition to the supply/demand downturn is the continued high energy-price environment, which is setting the bar higher in terms of pricing levels as dictated by the marginal cost producers that buy their feedstocks, be it naphtha or natural gas, at market prices.

Historically, as chemical analysts, we have been fairly agnostic to pricing levels for basic chemicals, focusing more on margins, given that pricing was driven by supply/demand fundamentals and reflected raw-material volatility that affected almost all producers in an equal fashion.

The emergence of Middle Eastern producers with a fixed cost of feedstock has altered this dynamic. With cash costs of production for ethylene in the range of USD250-300 per ton, Middle Eastern producers have benefited significantly from the sharp rise in global energy prices.

We expect this trend to continue, despite our forecast of a decline in industry operating rates, and we estimate that ethylene prices in the coming trough in 2011 should be more than double their levels in the previous trough in 2001-02. This difference is almost entirely attributable to the change in the energy price regime and should fall through to the bottom line of producers such as QAPCO.

The table at the bottom of this page details our earnings model for QAPCO, using pricing assumptions from our global petrochemical database, as well as our estimates of QAPCO's cost structure. While we estimate that 2008 should represent the peak for QAPCO's earnings, the company should generate fairly stable EBITDA through 2012, as margin declines should be offset by increased capacity, in our opinion.

QAPCO: HSBC Earnings model (QARm)

	2004	2005	2006	2007	2008e	2009e	2010e	2011e	2012e
QAPCO sales volumes (000 tons)									
Ethylene	351	264	309	456	652	701	646	342	342
LDPE	797	893	875	838	904	904	904	1,455	1,455
LLDPE	0	0	0	0	0	441	529	529	529
QAPCO implied sales price (c/lb) based off benchmark prices									
Ethylene	41.6	40.8	52.1	52.2	56.2	45.6	41.9	39.9	40.4
LDPE	49.2	51.5	56.2	65.5	72.0	58.8	54.4	51.8	52.9
LLDPE	43.0	48.3	55.7	60.6	67.9	54.7	51.3	48.6	49.6
Sales (QAR MM)*									
Ethylene	353	293	407	607	934	815	690	347	351
LDPE	1,364	1,757	1,761	1,897	2,250	1,837	1,701	2,606	2,662
LLDPE				0	0	878	987	936	956
Total	1,729	2,062	2,177	2,550	3,344	3,674	3,503	4,007	4,084
Product margins (c/lb)									
Ethylene			25.1	40.7	44.6	34.1	30.4	28.4	28.8
LDPE			38.7	44.1	50.6	37.4	33.0	30.4	31.5
LLDPE			37.5	40.0	47.3	34.1	30.7	28.0	29.0
EBITDA (QAR MM)									
Ethylene			282	675	1,060	870	715	353	359
LDPE			1,233	1,344	1,664	1,229	1,085	1,608	1,667
LLDPE			0	0	0	548	591	539	559
Total QAPCO EBITDA			1,520	2,035	2,771	2,689	2,429	2,536	2,620

*Does not include sulfur and pygas sales breakdown, but total sales reflect those numbers.
Source: Company reports, HSBC estimates

Fuels and QAFAC

QAFAC profile

The Qatar Fuel Additives Company (QAFAC) is a joint venture of IQ (50%), OPIC Netherlands Antilles (20%), International Octane Limited of Dubai (15%), and LCY Middle East Corporation of Taiwan (15%). The company is primarily engaged in the production and export of methanol and methyl tertiary butyl ether (MTBE).

Established in 1991 as a further part of Qatar's diversification plan away from oil, QAFAC currently has a production capacity of 1.0m tons of methanol and roughly 600kt of MTBE, with no significant capacity expansion planned for the next five years (see the table at the bottom of this page). The bulk of QAFAC's production is exported, with the primary markets for the company being the Far East, Europe, and the Persian Gulf region.

Methanol and MTBE basics

Methanol is the simplest molecule among the family of alcohols consisting of a single-carbon atom, the requisite hydroxyl group (OH), and three hydrogen atoms. Methanol is a globally traded, liquid product that is consumed in many diverse chemical applications. It is one of the most important commodity chemicals, as it is used as a raw material in several intermediate chemicals ranging from glues, solvents, and

plastics to process chemicals and fuel additives such as MTBE. Methanol can be produced from a variety of feedstock sources such as natural gas, LPG, residual fuel oil, and coal, and from biological sources, but natural gas-based production is the most common, accounting for more than 79% of global methanol capacity.

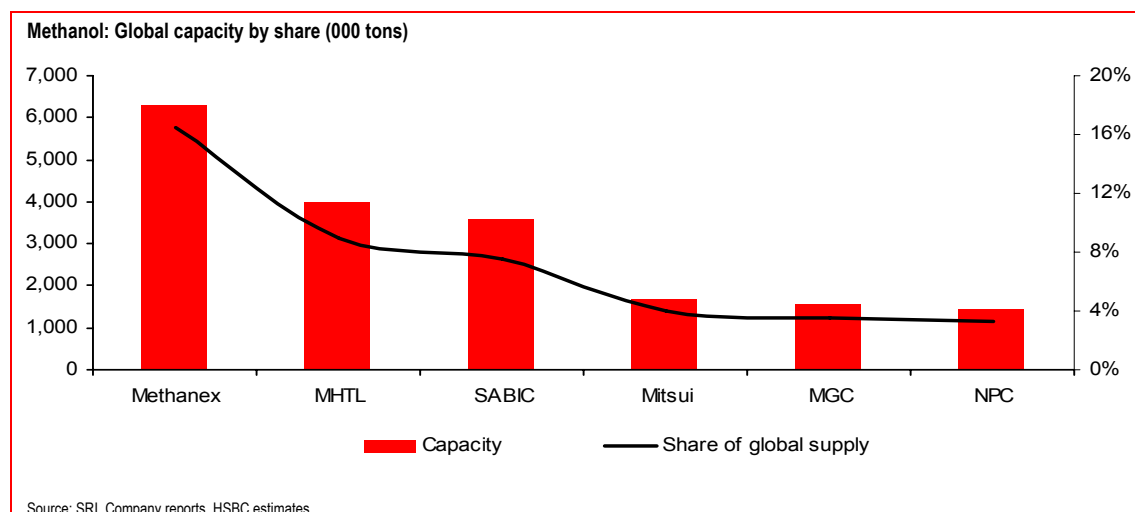
MTBE, an oxygenate produced by the reaction of methanol with isobutylene, is the second-largest market for methanol globally. The use of MTBE as an oxygenate first started in 1979 and increased sharply in late 1992, when the first effects of the US Clean Air Act legislation, mandating the use of oxygenates in gasoline blending, started to be felt in the US.

MTBE is a key methanol derivative with roughly 0.34 tons of methanol and 0.84 tons of butane being consumed for each ton of MTBE produced. MTBE production economics are therefore correlated with the production economics of methanol, especially for integrated producers such as QAFAC, which uses about one-third of its methanol internally for MTBE production. Given the interlinkages between the two products, we prefer to analyze the supply/demand and pricing outlook with reference to methanol and then derive a pricing outlook for MTBE.

QAFAC: Capacity (000 tons)

	2003	2004	2005	2006	2007e	2008e	2009e	2010e	2011e	2012e
Methanol	833	833	833	903	1,000	1,000	1,000	1,000	1,000	1,000
MTBE	610	610	610	673	610	610	610	610	610	610

Source: Company reports, HSBC estimates



Industry structure

The global methanol industry is far more consolidated than other commodity chemical industries. While methanol does not quite have the structure of the acetyls chain, wherein the top two producers own more than half of the global supply, it is more consolidated than the olefins chain, with the top five global methanol producers accounting for roughly 45% of global capacity (see the chart at the top of this page) versus about 30% for ethylene.

The interesting thing about the methanol industry structure is that the top five producers all have cost-advantaged positions, with access to long-term contracted natural-gas supply. This has been a hard lesson, well-learned by methanol producers over the years, that investing in production capacity without first tying down cheap, captive

feedstock supply is not the best way to earn reinvestment economics over an entire cycle.

Natural gas is far and away the single largest cost component in methanol production. This is more so for a producer that pays market-linked gas prices, such as producers in the US or Western Europe, rather than producers such as QAFAC and Methanex, which for the most part pay a flat fixed price for their gas. The table at the bottom of this page highlights the contrast in production costs based on the price of natural gas feedstock.

The sharp rise in natural gas prices in the US since 2000 has caused uncompetitive methanol capacity shutdowns with surprising alacrity over the past few years. These shutdowns have been surprising, because our past experience in the chemical industry has shown that companies have a tendency to keep plants running even while

Methanol: Sample production economics

	Fixed cost gas (ex QAFAC)	Market-linked gas cost	
Natural gas consumption	35 mmbtu per ton		of methanol
Natural gas price	1.25	6.00	USD/mmbtu
Natural gas cost	43.8	210.0	USD/ton
Utilities	25.0	25.0	USD/ton
Direct costs	15.0	15.0	USD/ton
Total ex works costs	83.8	250.0	USD/ton
Shipping costs	30.0	30.0	USD/ton
Delivered cost of methanol	114	280	USD/ton
Nat gas as a % of delivered cost	38.5%	75.0%	

Source: Company reports, HSBC estimates

Methanol: Planned capacity additions

Company	Location	Ownership	Capacity (000 tons)	Timing
Zagros 2	Iran	NPC	1,650	2008
Ar-Razi V.	Saudi Arabia	SABIC/MGC	1,750	H1 2008
Petronas	Malaysia	Petronas	1,700	Q1 2009
Brunei National Petrochemical	Brunei	MGC/Brunei Nat	850	2010
Methanex	Egypt	Methanex	1,260	2010
Total			7,210	

Source: SRI, HSBC estimates

posting losses. While in theory the marginal supplier should stop producing when profits become zero, petrochemical producers tend to continue to produce even when they are nominally unprofitable on each extra ton of product they make. This is because the high capital intensity of the industry encourages marginal producers to continue to run as long as they are making cash contributions toward their fixed depreciation costs, which tend to be quite high. However, with methanol, the severity with which the gas pricing regime changed – particularly in North America – made large-scale shutdowns of capacity pretty much inevitable.

Methanol supply/demand outlook: Supply

The need to lock in cheap captive feedstock has also meant that methanol capacity has moved far away from the industrialized regions of the world, where alternative uses of gas exist, and bid up its value to regions with stranded gas deposits, such as Equatorial Guinea, Trinidad, Chile, and the Middle East. We do not foresee any new methanol capacity being added by producers in either North America or Europe, and we expect all new methanol supply either to lie at the bottom of the cost curve or to serve captive end-use markets such as in China.

The table at the top of this page highlights planned capacity additions, excluding Chinese capacity, over the next few years. We view all of these projects as having a high probability of coming onstream; however, there could be

slippage in terms of timing by a few quarters, given the increase in capital costs and general delays that have affected large capital projects.

Accounting for these supply additions in our global supply/demand model, we are forecasting average annual supply growth of 4.5% through 2011.

We have not factored China into our supply/demand model, despite its being the fastest-growing region for methanol supply and demand globally. We believe that China needs to be considered as a separate silo when it comes to methanol, given that most of the capacity there is based on coal, rather than gas, as a feedstock. The low-cost, coal-based Chinese methanol producers tend to be in areas such as Inner Mongolia, which are landlocked and lack the logistics to export either coal or methanol – the very reason why coal is lower-cost in these areas in the first place. The coastal methanol-producing regions in China are not low-cost producers, as they tend to pay international prices for feedstock.

Furthermore, most of the new methanol capacity planned in China is being built with an eye toward growing fuel demand, from di-methyl ether (DME) and biodiesel, as well as gasoline blending. We estimate that more than 40% of planned Chinese methanol capacity is captive for DME production. We believe that China will continue to be a net importer of gas-based methanol for chemical uses, despite its large capacity buildout, as new coal-based capacity is rapidly absorbed for fuel use. We do not foresee

Chinese methanol hitting the global export market at any time in the near future, and thus we prefer to treat China as a distinct silo when drawing up our global supply/demand estimates.

Methanol supply/demand outlook: Demand

Methanol demand can broadly be split into two sets of end markets: (1) the traditional, largely mature end-market as a chemical derivative, which accounts for roughly 80% of methanol end-use demand through product chains such as formaldehyde and acetic acid, and (2) the market for fuels, additives, and blends such as MTBE, TAME, and DME, with a broad range of growth rates, from declining trends in particular in the North American MTBE market, to very strong growth witnessed in the Chinese DME market. Traditional chemical end-uses for methanol tend to track global GDP growth rates, given the wide variety of end markets that these products feed into. We expect to see this trend continue through 2012.

MTBE

The growth of MTBE as a fuel oxygenate was spurred by the passage of the Clean Air Act in the US. The 1990 Clean Air Act Amendments (CAAA) guidelines sought a drop in levels of ozone and carbon monoxide in the US, and in 1995, mandated the 2.0% by weight oxygen content in gasoline. The most commonly used oxygenates at that time were MTBE and ethanol, resulting in a sharp increase in MTBE consumption. US domestic demand for MTBE peaked in 1999, once the full impact of the CAAA on MTBE consumption was realized.

However, over the past few years, strong concerns have been raised in the US over the environmental impact of MTBE. MTBE is soluble in water, and studies have indicated that it has seeped into groundwater reserves from underground gasoline

storage tanks and also has been discharged directly into drinking-water reservoirs. As a result, several states have banned the use of MTBE as a gasoline component, resulting in the production of MTBE for US consumption being phased out by the end of 2006, with the remaining production in the US being destined for export markets.

On average, 0.35 metric tons of methanol are required per metric ton of MTBE produced. Per our estimates, US MTBE production used roughly 2.1m tons of methanol in 2005, which dropped to 0.8m tons in 2007 because of the phase-out of domestic MTBE consumption. We expect methanol demand for use in MTBE to be completely phased out by 2008. Most domestic MTBE producers are either exclusively targeting the export markets or converting their MTBE plants into ethyl tertiary butyl ether (ETBE), an alternative oxygenate. While MTBE is a large end-market for methanol, it is not a growth market, per SRI estimates; global methanol consumption for MTBE is expected to decline at an average annual rate of 2.8% through 2012.

DME

Di-ethyl ether (DME) has traditionally been used as a chemical in aerosol propellants. However, in recent years, DME has been gaining attention as a clean fuel, and it is in fuel applications that the strongest growth opportunities exist. DME is an easy-burning fuel with a high cetane number, as well as heat content roughly equivalent to that of LNG per unit of volume, despite having lower heating value per unit of weight. Furthermore, DME's boiling point is close to that of LPG, which is easily liquefied and stored. Existing LPG storage and transportation infrastructure could be used with a few modifications for DME. DME's cetane number also is in a range similar to that of diesel oil, making the use of DME in diesel engines possible.

Methanol: Demand growth assumptions by end use, 2008e-2012e

Demand by end-use	Demand split	Growth estimates (%)
Formaldehyde	34.0%	3.5
Acetic acid	11.0%	3.5
MTBE	16.0%	-1.0
TAME	2.0%	2.0
Direct fuel uses	7.0%	10.0
Chloromethanes	4.0%	3.0
Methylamines	3.0%	3.0
Methyl methacrylate	3.0%	3.5
Solvent	3.0%	3.0
Pipeline dehydrating agent	2.0%	3.0
Others	15.0%	3.5
Total		3.2

Source: SRI, HSBC estimates

While DME has potential uses in wide-ranging fuel applications – from fuel cells to diesel substitute to power generation –near-term demand for DME as a fuel is driven by LPG blends in China. LPG is mainly used as a residential and industrial fuel, and in China, DME is mixed with LPG in a 20% proportion, with the mixture being used as a cooking gas and for heating.

In December 2006, the National Development and Reform Commission (NDRC) in China announced plans to develop the coal-based fuel infrastructure in the country and invest more than USD130bn in producing 20m tons of DME by 2020, up from the current capacity of 1m tons. On average, 1.50 metric tons of methanol are required per metric ton of DME produced, implying a requirement of 30m tons of methanol – almost exclusively sourced from coal – for the required level of DME production.

This level of domestic DME consumption would, in our opinion, require that most of Chinese domestic methanol production, based on coal, be consumed internally, and that China would need to rely on imported product to meet methanol demand, rather than causing oversupply in the global methanol market through its capacity additions.

Other uses

Apart from conventional chemical uses, the rising energy-price environment over the past few years has meant that methanol now is increasingly being considered as a transportation fuel, with biodiesel and gasoline blending applications in various stages of commercialization. In China, for example, although methanol blending in gasoline is not officially allowed, trade and industry contacts estimate that more than 1m tons of methanol were consumed in blending applications in 2006 – higher than the consumption of methanol for MTBE applications in the US. Another important emerging end-use for methanol is in biodiesel, driven both by higher energy prices and regulation on the amount of sulfur allowed in diesel fuel.

Sulfur limits in the US are being tightened, with regulation in place for the transition of all highway diesel to ultralow sulfur diesel (ULSD) by 2010. Lower sulfur content reduces the lubricant nature of diesel, reducing its efficiency. A 2% biodiesel blend restores the lubricity, while maintaining the sulfur content. Biodiesel is made from the transesterification of vegetable oils with methanol and also meets the increasingly important criteria of being a “green” fuel. Among the transportation-fuel uses of methanol, we believe that gasoline blending, particularly in

China, offers the most potential for growth, given the current high energy-price environment.

Overall, we are assuming global GDP growth of 3.5% through 2012, and we are forecasting traditional chemical-use demand for methanol to grow at roughly the same pace. For applications with challenging end-markets such as MTBE, we are forecasting a decline in demand over the next few years; however, we do not foresee a significant drop, as most of the challenged MTBE capacity, primarily in the US, has already been shut down.

We expect direct fuel uses for methanol to grow strongly in light of increased applications in DME and biodiesel, and in recognition of the energy value of methanol and the strong energy pricing environment. Just as we did not include China in our supply model, as most supply there is for captive fuel use, we are not including the expected 12m tons of methanol demand to be generated from Chinese DME in our demand model, as that will be met by local supply. Our fuel-demand growth-rate assumptions are ex-China, as we believe there are potential fuel uses for methanol in other developing regions globally.

Our composite demand growth-rate estimate for

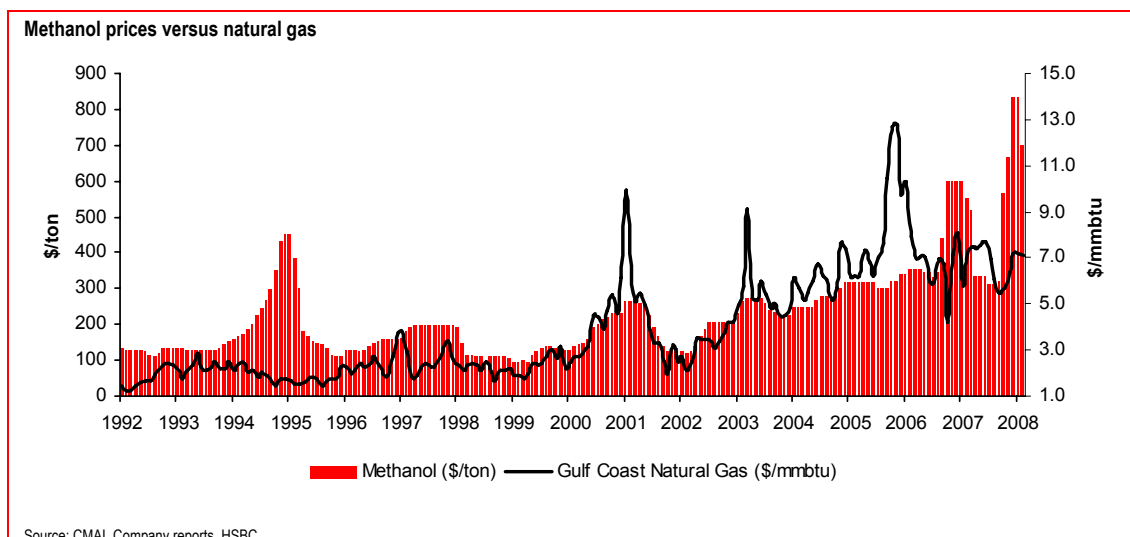
methanol is 3.2% annually through 2012, lagging behind our supply growth forecast of 4.5%. Under these assumptions, we expect to see a gradual slackening of operating rates over the next four years, resulting in a drop in methanol pricing.

Methanol and MTBE pricing outlook

The methanol cost curve

There appears to have been a secular change in methanol prices over the last five years (see the chart below), in line with the change in the energy price environment and the shifting methanol capacity base. After averaging USD160 per ton through the mid-1990s to 2003, methanol prices have since doubled, averaging more than USD360 per ton over the past four years, with prices spiking on occasion to levels of USD840 per ton.

The pricing levels of USD700-800 per ton witnessed both in Q4'07 and currently are not supported by fundamental supply/demand balances and were driven by supply outages, particularly to Methanex's facilities in Chile. While we believe that these pricing levels are unsustainable in the longer term, what these price spikes demonstrate is how finely balanced the current supply/demand environment is. We



believe that cost curve analysis and pricing forecasts for methanol need to take into account the shifting nature of global supply, as well as a transformed energy-price and capital-cost environment, rather than being rooted in historical assumptions of gas pricing.

The chart at the bottom of the previous page shows a correlation of methanol prices with natural gas; we believe that there are two important takeaways from this chart. First, methanol and US natural gas prices were strongly correlated until early 2003-2004, in line with the fact that a large proportion of methanol production at that time was based in the US.

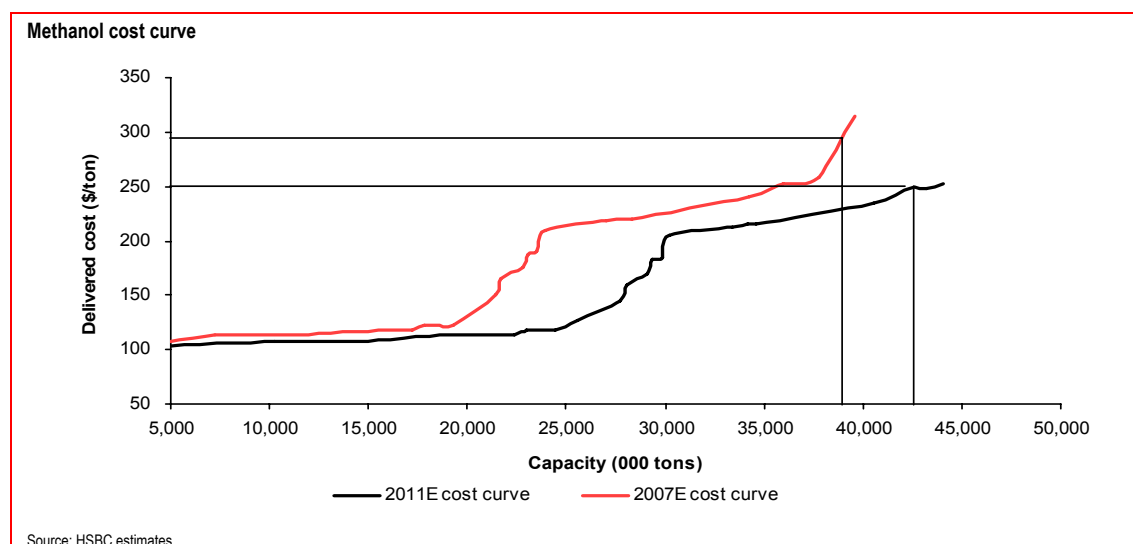
Second, the relationship of the spot gas price to the methanol price has decoupled to a large extent since 2003-2004, given that a large shift in capacity has taken place, with spot gas-based capacity in the US having shut down, and most new capacity being based on long-term contracted gas supply.

The decoupling of spot gas and methanol prices is good news in the sense that it helps us come up with a fairly stable cost curve for methanol, as we forgo the need to forecast the highly volatile spot gas price series to determine production cash

costs. Historically, marginal methanol production costs were difficult to forecast, as a large portion of the cost curve was based on spot gas. However, currently, while some tranches of capacity – notably in the US and Western Europe – are still based on spot gas prices, the vast majority of capacity now is on contracted supply, enabling us to build a stable, industrywide, proprietary cost-curve model and use it in forecasting methanol prices.

In our opinion, the pricing levels of USD300 per ton witnessed in Q2'07 and Q3'07 – periods without large supply disruptions – are representative methanol prices based on current supply/demand balances. Methanol is a pure commodity, with pricing being set by the marginal producer's cost of production. Per our estimates, that marginal cost of production, given the current capacity split and the current feedstock environment, is about USD300 per ton. More than 18m tons of low-cost capacity exist in regions such as Saudi Arabia, Trinidad, Chile, and the rest of the Middle East.

However, the current cost curve rises fairly steeply, because as much as 6m tons of high-cost capacity exists in Western Europe and the US, per our estimates. The production cost of this higher-



cost capacity is where the demand line intersects the cost curve, thereby setting the price. Under current supply/demand balances, we believe that the price is roughly USD300 per ton (see the chart at the bottom of the previous page).

By 2011-12, we expect to see 8m tons of new methanol capacity come onstream, a growth rate of 4.5%, all of which will be lower-cost capacity and get added to the bottom of the cost curve. We are assuming that the demand growth over this period will average about 3.2% annually, leading to a clear slackening of supply/demand balances and a drop in prices. Per our estimates, the marginal cost of production in 2011-12 will be about USD240 per ton, because, despite more than 25m tons of low-cost capacity at that stage, the cost curve will still rise fairly steeply.

Based on our analysis of methanol supply/demand dynamics and the production cost curve, we foresee prices slipping steadily from current levels to about USD240 per ton through 2011. We believe that this slide in prices will be fairly gradual, as major supply-reliability issues still persist and have a buoying effect on prices. We are building into our methanol model prices of USD440 per ton for 2008, USD280 per ton for 2009, USD260 per ton for 2010, and USD240 per ton for 2011.

Methanol pricing and its impact on MTBE

The feedstocks for MTBE production are methanol and butane. We have our estimates for global methanol prices from our cost curve analysis. Butane is a petrochemical feedstock, and we have estimates for this feedstock from our global petrochemical pricing database. Using these pricing forecasts for the principal components of MTBE production, we derive our global MTBE delivered price forecasts (detailed in the table at the bottom of this page).

QAFAC: Cost structure and margin analysis

QAFAC produces methanol from natural gas supplied by Qatar Petroleum. QAFAC also is partially integrated into MTBE production, using in-house methanol, while procuring the required butane feedstock from QP. There is little to no disclosure about the pricing arrangements for raw material followed by QP to QAFAC or, for that matter, any of the companies that constitute IQ. However, as per our earlier analysis, we estimate that natural gas is supplied in the area of USD1.25 per mmbtu to QAFAC. We find no reason to assume that the natural-gas pricing arrangement for QAFAC would be any different, and we are building a natural-gas cost of USD1.25 per mmbtu into our QAFAC production cost model.

MTBE pricing forecasts (based on methanol outlook)

Methanol consumption	0.339	tons/ ton of MTBE			
Butane consumption	0.839	tons/ ton of MTBE			
MTBE pricing forecasts	2008	2009	2010	2011	2012
Methanol prices (USD/ton)	440	280	260	240	240
Butane prices (USD/ton)	745	650	583	548	543
For 1 ton of MTBE production (USD)					
Methanol costs	149.2	94.9	88.1	81.4	81.4
Butane costs	624.7	545.7	489.1	459.4	455.8
Total raw materials	773.9	640.6	577.2	540.8	537.2
Utilities and catalysts	35.0	35.0	35.0	35.0	35.0
Direct costs	20.0	20.0	20.0	20.0	20.0
Total ex works costs	828.9	695.6	632.2	595.8	592.2
Shipping costs	30.0	31.0	32.0	33.0	34.0
Delivered cost of MTBE	858.9	726.6	664.2	628.8	626.2

Source: CMAI, HSBC estimates

QAFAC: HSBC margin model

Natural gas consumption	35 mmbtu per ton	of methanol			
Natural gas price (assuming same as QAFCO)	1.25	USD/mmbtu			
Natural gas cost	43.8	USD/ton			
Utilities	25.0	USD/ton			
Direct costs	15.0	USD/ton			
Total ex works costs	83.8	USD/ton			
Shipping costs	30.0	USD/ton			
Delivered cost of methanol	114	USD/ton			
	2008e	2009e	2010e	2011e	2012e
Methanol price forecasts	440	280	264	240	240
Implied methanol margin for QAFAC (USD/ton)	326	166	150	126	126
QAFAC MTBE margin model	2008e	2009e	2010e	2011e	2012e
Butane prices (international) USD/ton	745	650	583	548	543
Butane prices - QAFAC assuming a 20% discount	596	520	466	438	435
Butane prices - QAFAC in QAR/ton	2168	1894	1697	1595	1582
Methanol cost (USD/ton)	28	28	28	28	28
Butane cost (USD/ton)	500	437	391	368	365
Fixed costs (USD/ton)	45	45	45	45	45
MTBE cost (USD/ton)	573	510	465	441	438
MTBE price forecasts	859	727	664	629	626
Implied MTBE margin for QAFAC (USD/ton)	286	217	199	188	188

Source: HSBC estimates

The cost of butane supplied by QP is a slightly different matter. While significant amounts of byproducts such as ethane, condensate, propane, and butane are produced during gas processing at the major gas fields in Qatar, only ethane is extracted by QP and supplied to downstream industries at a significant discount. The other products are sold on highly liquid international term and spot markets.

We estimate that butane is supplied by QP to QAFAC at a slight discount to international market rates. The discount, in our opinion, backs out freight and terminaling costs from international butane spot prices and does not represent a significant feedstock cost advantage to the company. The fact that butane is supplied at market rates accounts for the sharply lower profit margins at QAFAC in relation to the margins at QAFCO and QAPCO, in our opinion.

The table at the top of this page details our margin model for QAFAC for both methanol and MTBE. We are assuming a USD1.25 per mmbtu cost of natural gas for methanol production and a 20% discount to international butane prices for MTBE production. We also are assuming that the methanol consumed in the manufacture of MTBE is transferred at cost.

Based on these cost structure assumptions, as well as our pricing forecasts for both products detailed earlier in this report, we derive our margin forecasts for both methanol and MTBE, as shown in the table above.

QAFAC: Earnings model

Our QAFAC earnings model is based on the company's installed capacity, our forecasts of ammonia and urea pricing, and our margin model for QAFAC, outlined earlier. We do not expect to see any new capacity additions by QAFAC until 2012 at the very earliest.

While the company in 2004 obtained approval for a 2.3m ton methanol plant at its Mesaieed complex – this would have more than doubled the company's methanol capacity from the current 1m tons – this expansion project was placed on hold in 2005 in light of the steep rise in EPC costs in the region and competing capital requirements from IQ's other expansion ventures.

QAFAC revived this expansion plan in late 2007 in a scaled-down format, with a planned capacity increase of 1m tons, down from the initial 2.3m ton plan. However, we do not expect this project to come onstream before 2012 at the earliest. The cost pressures and construction delays in the region continue to persist, as per our analysis, making completion of a project of this magnitude within four years unlikely. Furthermore, accessing feedstock for this project also should prove to be a challenge in light of the moratorium on further development of the giant North Gas field, imposed by the Qatari government in 2005.

Therefore, for our QAFAC earnings model, we are assuming no increase in the installed capacity base, and we are applying our methanol and MTBE pricing and margin assumptions to derive QAFAC's earnings. The earnings model is detailed in the table at the bottom of this page.

Based on our analysis, we expect to see very strong earnings from QAFAC in 2008 on the back of record-high methanol prices. However, we are forecasting a fairly steep decline in QAFAC's earnings into 2009, as we expect methanol prices to retract to more sustainable levels from the current pricing environment. While the drop in expected earnings in 2009 is steep, it is highly sensitive around methanol pricing assumptions, and we would caution that in light of recent outages, global methanol supply/demand remains very finely balanced, and that the risk to our methanol price forecasts in 2009 and beyond remains on the upside, in our opinion.

QAFAC: HSBC earnings model (QARm)

	2003	2004	2005	2006	2007e	2008e	2009e	2010e	2011e	2012e
QAFAC capacity (000 tons)										
Methanol	833	833	833	903	1,000	1,000	1,000	1,000	1,000	1,000
MTBE	610	610	610	673	610	610	610	610	610	610
QAFAC sales volumes (000 tons)										
Methanol	564	638	668	659	650	807	803	718	800	800
MTBE	584	618	709	674	608	673	664	610	610	610
Product pricing (QAR/ton)										
Methanol	685	758	769	904	1037	1281	815	757	699	641
MTBE	1107	1441	2038	2104	2428	2872	2427	2201	2073	2040
Sales (QARm)										
Methanol	386	484	514	595	674	1034	655	544	559	513
MTBE	646	891	1445	1418	1476	1933	1611	1342	1265	1244
Total QAFAC sales	1,033	1,374	1,959	2,014	2,150	2,967	2,266	1,886	1,824	1,757
Margins (QAR/ton)										
Methanol	266	339	350	485	619	863	397	339	280	222
MTBE	498	634	958	815	845	785	570	509	468	445
EBITDA (QARm)										
Methanol	150	217	234	320	402	696	319	243	224	178
MTBE	291	392	679	549	514	529	378	311	285	272
Total QAFAC EBITDA	441	608	913	869	916	1,225	697	554	510	449

Source: Company reports, HSBC estimates

IQ's real estate venture

Formation of a real estate JV

In early January 2008, IQ announced the formation of a real estate joint venture in partnership with the Qatar Real Estate Investment Company (QREIC). It is anticipated that Kuwait's Al-Koot Insurance & Reinsurance Company, a fully owned subsidiary of QP, also could pick up a stake in the venture, with all three partners eventually owning an equal third of the business.

The joint venture was formed with the objective of transacting in and managing residential, commercial, and industrial property in the region. The JV is slated to start up in Q1'08 with a capital base of QAR1bn and is an attempt by the company to tap into the real estate boom not just in Qatar but also the broader Middle Eastern region.

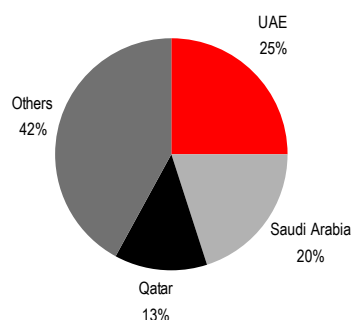
Of the venture partners, only QREIC has any significant experience with the real estate market. QREIC was incorporated in 1995 and engages in the establishment and management of residential compounds around industrial projects in Qatar, such as the housing complex for the Qatar LNG (Qatar Gas) project. The company also purchases and develops land for resale and is one of the foremost real estate developers in Qatar.

Drivers of the real estate market in Qatar

The booming domestic economy, along with changes in demographics because of a growing population and expatriate community, has been among the key drivers of the real estate boom in

Qatar over the last few years. The high levels of liquidity following on from elevated energy prices and a rapid industrial expansion also have been contributory factors to a construction boom in Qatar. As discussed in our profile of Qatar Steel in this report, the gross output value of the construction and building sector in Qatar has grown by an average 30% over the last five years.

Share of Middle East real estate projects by value



Source: Business Intelligence Middle East, 2006

Qatar is the third-largest market for real estate in the Middle East (see the chart above). The UAE and in particular Dubai launched the construction boom in the region; however, with significant supply expected to come onstream in 2009 and concerns that the market in the UAE may have peaked, real estate developers and investors in the region have turned their attention to other markets such as Qatar.

Market segmentation

The Qatari real estate market can be broadly broken down into residential, commercial, retail, and hospitality segments. Each of the segments is briefly discussed below.

Residential sector

The residential sector in Qatar is severely short of supply on the back of strong demand spurred by double-digit GDP growth, desire for upscale housing, and an influx of new expatriates. It is estimated that more than 200,000 new families will move into Qatar by 2012, placing further stress on housing supply.

In response to the shortage of supply, the government of Qatar has initiated several housing programs aimed at the middle- and low-income groups. The high end of the residential market – driven by expatriate demand – is also witnessing significant expansion, with an estimated 16,000 new apartments expected to become available by 2010 through mixed-use projects such as the Pearl and Lusail City. Despite an influx of supply in the near term, we expect to see demand fundamentals for housing continue to outstrip supply in the medium term.

Commercial sector

The main sources of commercial real estate demand in Qatar are foreign and private-sector companies looking to expand their presence in Qatar on the back of the recent economic boom in the region. A spate of new office demand has rendered Qatar short of office rental space, with data from Colliers International showing vacancy rates in the commercial sector in Qatar at less than 1%.

Retail sector

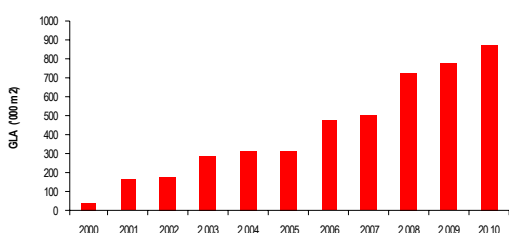
In light of strong economic growth, high per capita GDP, and strong growth in disposable incomes, retail consumption also has increased rapidly in Qatar over the last few years.

According to data from the Central Bank in Qatar, per capita GDP in the country grew 15.5% in 2006 to USD57,350 and is expected to exceed USD65,000 by the end of 2008. This high level of affluence has resulted in increased demand for retail outlets and a construction boom in the shopping mall industry (see the charts at the bottom of this page). Supply for retail space has been weighed toward the high-income consumer bracket, and this trend is expected to continue. According to estimates by Colliers International, by 2010, Qatar is expected to become the second-largest player in the Middle Eastern retail market in terms of per capita gross leasable area (GLA).

Hospitality sector

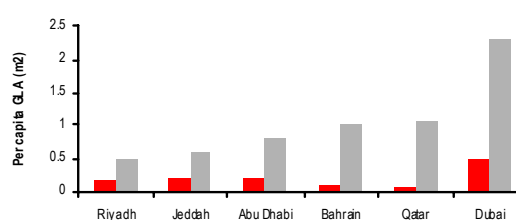
The main driver behind the boom in Qatar's hospitality sector was the Asian Games, which were hosted by Doha in December 2006. Even after the games, the hospitality sector has continued to grow, with increasing foreign direct investment and an aggressive expansion of Qatar Airways. The Qatar Tourism Authority (QTA) is targeting 1.4m tourists by 2010 and has committed to an aggressive ramp-up of tourism infrastructure. We estimate that Doha has about 4,500 hotel rooms in the 5-star and 4-star categories, and this number is expected to increase by 17,000 by 2012.

Qatar: Shopping center cumulative supply



Source: Colliers International, HSBC

GCC: Retail mall gross leasable area per capita



GCC = Gulf Cooperation Council states. Red columns = 2000. Grey columns = 2010e.
Source: Colliers International, HSBC

An opportunistic investment – not without risks

Despite strong fundamental drivers of real estate in Qatar, we question IQ's decision to invest in a real estate joint venture. All of the other businesses in the group, with the exception of steel, have very strong global competitive positions, while QASCO as the only steel producer in the country fulfills a strategic need. Venturing into real estate does not meet a strategic criterion or exploit any fundamental advantage that the company possesses, as only QREC among the three JV partners has any real estate experience.

Returns in the real estate space also might not live up to IQ's historical margins. IQ's net income margin averaged 46% from 2003-06, and QREC in its best year in 2006 achieved a net income margin of 42%. With cost inflation and looming supply, this overall project is not expected to beat this 42% margin.

Given the risks associated with real estate ventures – cost overruns, long gestation periods, likely influx of new supply – relative to the existing business in which IQ is an experienced operator, we consider the formation of the real estate JV ill-advised. The venture is almost certainly opportunistic in nature to take advantage of the region's construction boom, and in our opinion, IQ would be better served deploying the capital in its core businesses or returning it to shareholders.

Valuation and sensitivity

Valuation

Our preferred methodology for valuing commodity chemical companies has been the normalized valuation framework. In our normalized valuation approach for each company under our coverage, we determine a midcycle, or “normalized,” earnings number based on a historical trend line through one full commodity cycle. The implied growth rate of this earnings trend is the average return on capital for that company through the cycle. This methodology, however, is not applicable to stocks for which we have neither long-enough earnings history or, as is the case with Industries Qatar, historical figures

relating to individual product margins in the region. This makes it virtually impossible to do a bottom-up analysis of the normal earning power of the company.

Replacement value analysis

For IQ, we base our target price on a replacement value approach, supplemented by a sum-of-the-parts analysis, given that IQ is essentially a holding company with diverse business interests. For our replacement value analysis, we define replacement value as the cost associated with setting up a greenfield, world-scale facility to produce a particular chemical product. Using production capacities and our estimate of costs

Industries Qatar: Replacement value analysis

Product	Entity	Replacement value (USDm)	Replacement value (QARm)
Ethylene	QAPCO	1,091	3,971
LDPE	QAPCO	655	2,383
LLDPE	QAPCO	283	1,029
Sulfur	QAPCO	23	84
VCM	Qatar Vinyl	147	535
Ethylene dichloride	Qatar Vinyl	154	562
Caustic soda	Qatar Vinyl	540	1,966
Total QACPO		2,893	10,529
Billets	QASCO		
Bars	QASCO		
Wire rod coil	QASCO		
Dubai Steel FZE	QDS		
United Stainless Steel	QASCO		
Total Qatar Steel		7,570	27,556
Ammonia	QAFCO	1,311	4,773
Urea	QAFCO	1,574	5,728
Melamine	QAFCO	74	269
Urea formaldehyde	GFC	33	120
Total QAFCO		2,992	10,890
Methanol	QAFAC	2,204	8,023
MTBE	QAFAC	874	3,181
Total		3,078	11,204
Total replacement value		16,533	60,178
Replacement value per share			120

Source: Company reports, HSBC estimates

Industries Qatar: Feedstock DCF analysis

		2006	2007	2008e	2009e	2010e	2011e	2012e	
Ethane	000 tons	677	929	929	1,419	1,419	1,419	1,419	
Natural gas	mn mmBTU	101.6	101.6	101.6	101.6	154.1	154.1	154.1	
Ethane costs	(USD/ton)	61	61	61	61	61	61	61	
Natural gas costs	(USD/mmBTU)	1.25	1.25	1.25	1.25	1.25	1.25	1.25	
Feedstock costs	Ethane	42	57	57	87	87	87	87	USDm
	Nat. gas	127	127	127	127	193	193	193	USDm
	Total	169	184	184	214	280	280	280	USDm
Global feedstock costs (USD/ton) (gas at USD6/mmmbtu and crude at USD50/bbl)									
Ethane	USD/ton	520	332	332	332	332	332	332	
Natural gas	USD/mmBTU	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Cost of feedstock at global prices	Ethane	352	308	308	471	471	471	471	USDm
Feedstock costs	Nat. gas	610	610	610	610	925	925	925	USDm
	Total	962	918	918	1,081	1,396	1,396	1,396	USDm
Feedstock advantage (USDm)		793	734	734	867	1,116	1,116	1,116	13,444
				1	2	3	4	5	6
Cost of capital	10.30%								
PV of cash flows (USDm)			734	665	712	832	754	684	7,466
NPV (USDm)									11,846
NPV in QARm									43,121
No. of shares (millions)									500
Value per share from the feedstock advantage (QAR)									87
Value per share from the simple replacement value analysis									120
IQ valuation based on replacement value + feedstock DCF									207

Source: Company reports, HSBC estimates

associated with building greenfield facilities for the various products in IQ's portfolio, we arrive at a replacement value for the company.

In the tables on the previous page and at the top of this page, we detail IQ's valuation according to this metric. We arrive at IQ's target price via a two-step process. First, on a bottom-up basis, we evaluate the replacement value for each product within IQ's portfolio, which, as seen in the table at the bottom of the previous page, totals QAR60.2bn, or QAR120 per share.

This analysis, however, is incomplete without layering on the value of IQ's feedstock advantage. We need to keep in mind that the unique profitability of IQ's assets is tied to the low-cost feedstock that the company sources from QP, and that the delta in feedstock costs between IQ and

global rates needs to be incorporated into the valuation. In the second step of our replacement value analysis, we carry out a DCF around IQ's feedstock advantage. From the company's product capacities, we can determine the amount of feedstock that the company purchases annually. We also have been able to estimate the price that IQ pays for its gas supply from QP – USD1.25 per mmmbtu – and consequently its cost for ethane supplies. We do not include butane consumption for QAFAC or iron ore consumption for Qatar Steel in this analysis, given that the company pays market rates for these feedstocks.

Using these data on cost-advantaged raw-material consumption and price, and comparing them to the costs of feedstock for marginal producers, we can come up with a value for the feedstock advantage in a given year, and performing a

discounted cash flow analysis around this advantage helps us arrive at a valuation for this cost advantage.

As seen in the table at the top of the previous page, we estimate that this advantage is valued at QAR43.1bn, or QAR87 per share. Adding the replacement value to the feedstock advantage value gives us our base-case replacement valuation for IQ, which is QAR207 per share.

Sum-of-the-parts analysis

IQ is essentially a holding company operating in four separate businesses lines: fertilizers, petrochemicals, steel, and methanol. For each of these industries, there are established global peers with trading histories and consensus estimates that one can use to derive a sum-of-the-parts (SOTP) analysis for IQ.

The major shortcoming of a sum-of-the-parts analysis often lies in the fact that there is no such

thing as a perfect peer group. This is all the more true in the case of IQ, which is unique in terms of its profitability profile with average EBITDA margins of 52% over the last four years. For the purposes of our SOTP analysis, we identify peer groups for each industry segment and apply a premium to the forward trading multiple for that group to account for the higher profitability profile of IQ's business units.

For QAPCO, we believe that the true comparisons are those companies using ethane gas as their primary feedstock, and among them, the Middle Eastern producers such as SABIC, Sahara, and Saudi International Petrochemicals (SIPCHEM) represent the most direct peer group. However, we do not have consensus estimates for Sahara and SIPCHEM, and we are forced to use North American ethane-based producers such as Nova and Westlake to arrive at a median forward multiple.

Industries Qatar business units: Peer group identification

	Company	1-year forward PE
QAPCO	SABIC	14.33
	Sahara Petrochemicals	NA
	Saudi International Petchem	NA
	Nova Chemicals	8.79
	Westlake Chemical	10.91
	Median	10.91
QASCO	POSCO	10.72
	Nippon Steel Corporation	10.32
	Baoshan Iron & Steel Ltd	16.22
	JSW Steel Ltd	10.29
	Ruuki Group Oyj	19.17
	SSAB AB	72.50
	Median	13.47
QAFCO	Yara	12.60
	SAFCO	NA
	Mosaic	17.84
	Arab Potash	23.93
	Potash	23.52
	Agrium	14.93
	Terra	12.24
	Israel Chemicals	20.08
	Median	17.84
QAFAC	Methanex	8.67
	China Blue Chemical Ltd	15.07
	Saudi International Petchem	NA
	Median	11.87

Source: HSBC, FactSet

Industries Qatar: Sum-of-the-parts valuation

Division	IQ's stake	Peer group forward PE	Premium	Applied multiple	2008e net income
QAFCO	75%	17.8	30%	23.2	3,003
QASCO	100%	13.5	0%	13.5	844
QAPCO	80%	10.9	25%	13.6	2,700
QAFAC	50%	11.9	15%	13.7	1,085
Consolidated peer group 1-year forward PE		17.4			
No. of shares		500	m		
HSBC 2008e EPS		12.05	QAR		
Implied SOTP IQ valuation		209	QAR per share		

Source: Company reports, HSBC estimates

For QASCO, we believe that the peer-group companies should be of a similar size in terms of steel capacity and should not be integrated into iron ore. The companies in our group (see the table at the bottom of the previous page) all source their iron ore requirements from the open market. For QAFCO, we have used a peer group of global fertilizer majors, keeping in mind the fact that none of them has a cost advantage or profitability profile that compares to QAFCO. For QAFAC, we use Methanex, SIPCHEM, and China Blue as peers.

The table at the top of this page details our SOTP analysis for IQ, using the peer groups identified earlier and applicable premiums based on the cost advantage versus the group. For QASCO, we do not apply a premium, given that the company in essence has no such cost advantage, while we apply larger premiums for both QAPCO and QAFCO. Our SOTP analysis yields a valuation of QAR209 per share. Using that value in tandem with our earlier valuation of QAR207 per share arrived at through our replacement value analysis; we derive a value of QAR210 per share, which we are establishing as our target price for IQ.

Under our research model, for stocks without a volatility indicator, the Neutral band is five percentage points above and below the hurdle rate for Qatari stocks of 10.3%, or 5.3% to 15.3% around the current share price. Our 12-month

target price of QAR210 indicates a potential total return of 30.2%, which is above the Neutral band of our model; thus, we are initiating coverage of IQ stock with an Overweight rating.

Sensitivities

Capital cost inflation

In our 2 July 2007 note, *US Chemicals: The capital cost conundrum*, we estimated that the Middle East has seen capital-cost inflation in the range of 1.8x to 2.4x over last few years. Our base-case analysis does not factor in any capital-cost inflation into the replacement value, which in our view is the conservative way of valuing IQ. In our bull case, if we were to factor in a 1.8x increase in capital costs across the board to IQ's facilities and then perform our replacement value analysis, we would arrive at a replacement value of QAR302 per share.

Sustained high energy prices

Our margin models for all of IQ's products bake in a moderating energy price environment, with crude oil prices as per our forecasts moderating to USD60 per bbl by 2011-12. The biggest upside potential to our IQ earnings estimates and to our valuation stems from an environment of continued high energy prices, in our opinion.

To illustrate this point, we take the example of QAPCO and ethylene production costs. We are

forecasting trough ethylene prices of USD850-900 per ton by 2010-11, corresponding to a decline in operating rates and a moderation in the crude price. However, if crude prices were to remain at USD70-80 per bbl, we would see ethylene prices remain well above USD1,000 per ton even in a trough, adding a further USD200 per ton to QAPCO's trough earnings. Given that QAPCO should have more than 1.1m tons of ethylene capacity by then, this translates into a bump of QAR1.6 to our trough EPS estimates from QAPCO alone. The analysis yields similar results for QAFCO and QAFAC, as well, and represents an upside catalyst to our forecasts.

Our feedstock DCF, which yields a value of QAR87, also bakes in a natural-gas crude-equivalent price of USD50 per bbl. If we were to apply USD70 per bbl in crude prices, that feedstock advantage would increase to QAR110 per share – again representing significant upside potential to our current estimates.

On the flip side, a sharp correction in global energy prices undoubtedly represents downside risks to the IQ stock, as well as the broader Middle Eastern markets. The bulk of new investments and growth opportunities in the region presumes a period of sustained high energy prices, and a correction in the pricing regime for crude oil would imply a sharp correction in the regional markets. We are of the opinion that investors in IQ and in the region need to be comfortable with the idea of longer term crude oil prices around the USD60 per bbl range before investing in the stock.

Risks

Energy price correction

A sharp correction in global energy prices, particularly the price of crude oil, represents the biggest risk to our Overweight rating on IQ shares, in our opinion. We are building in longer-term crude-oil price forecasts of about USD60 per bbl and running our earnings models for QAFCO, QAPCO, and QAFAC off that estimate. As we discussed in detail in this report, the cost structure for the marginal producers of fertilizers and petrochemicals is linked to crude oil, with global prices for these products reflecting medium- to longer-term movements in the oil price. For producers such as IQ, whose feedstock is based on fixed-price gas, a higher price of crude implies that the cost differential goes straight through to the benefit of its margins.

Any sharp decline in global crude prices would impact the cost advantage that IQ has over its competitors and reduce its margins. While we believe that the risk to our longer-term crude-oil forecast of USD60 per bbl lies to the upside, we would caution that IQ stock is not an appropriate investment for investors who are bearish on crude oil prices.

Cyclical

The four components of IQ are all commodity companies, with earnings that are inherently cyclical and driven by industry operating rates and supply/demand fundamentals. While we would argue that the cycles for each business are different – ranging from food supply to

construction demand – and inherently provide a degree of offset, there is no denying that earnings are linked to global GDP growth. A severe downturn in global GDP growth, notably in China, which has formed a major engine of the global demand story over the last few years, represents a key risk for the company, we believe.

Gas supply for further expansion

QP has announced a moratorium on new projects while it studies the stability of its gas reserves under the new production load. This review is expected to be completed by the end of this decade. While IQ has already secured feedstock supplies for all of its currently planned projects, the moratorium places a degree of doubt over the company's expansion plans after 2011.

Even if the moratorium is lifted after 2010, we expect it to take at least 4-5 years for the process of allocation, permitting, and construction to be completed for any new facility, thereby offering few organic growth opportunities for the company over that period.

Increased domestic competition

There has been some debate among investors about the Qatofin project, which is jointly owned by QP, Q-Chem, and IQ, as it represents increased domestic competition for IQ. We would note that while IQ also has a stake in Qatofin, the economics of Qatofin and QAPCO would be so similar that the necessity to compete for volume

head-to-head domestically will be minimal. Instead, we believe that both QAPCO and Qatofin will be able to supply export markets competitively, and that the volume likely to be displaced will be exports from more-expensive areas and less-efficient local production, mainly in Asian market, but also in the US and Europe. Furthermore, any increased competition domestically has taken place only for QAPCO, while all the other businesses that IQ owns remain the sole producers of their respective products in the country.

We would also argue that IQ remains a crucial element in Qatar's economic development plan. Since its establishment, IQ has been very effective in meeting the strategic goals set for it, and this record limits the risk of erosion in its industrial position, especially from internal sources.

Longevity of supply contracts and tariffs

Another recurring concern for investors is the longevity of IQ's gas supply contracts with QP and the sustainability of cost-advantaged pricing. There is little clarity available on the length of the contracts; while we know that the QAFCO gas supply contract is valid until 2019, we have no information on similar contracts for QAPCO and QAFAC. However, we would argue that the basic premise for IQ's existence is to diversify the country's economic base while exploiting its hydrocarbon resources.

Given that the government still owns 70% of the company through QP and that all of IQ's subsidiaries are aggressively ramping up capacity over the next couple of years, we would be surprised if the cost-advantaged gas contracts were to change significantly at any time in the future.

Similar concerns have been raised about the country's steel tariffs, which protect margins for QASCO. Given that the tariffs have been in place for more than 20 years and that the company depends on them for its profitability, we would be surprised if the tariff regime were modified in the near term – particularly given that the company is spending an estimated QAR16bn on steel capacity expansions over the next three years.

Operating risks

In addition to normal business risk in the petrochemicals market, we see other potential risks that are more difficult to assess, both in terms of probability and effect. Such risks include interruption to production from operating problems or explosion. Although the bulk of IQ's production is based in Qatar, which some investors may associate with increased risk of terrorist attack, the more practical, everyday issue is that of normal risk in a production process involving potentially explosive hydrocarbons, an area in which global standards of health and safety are rigorously applied.

Financial models

Industries Qatar: Income statement (QARm except per share data)

	2003	2004	2005	2006	2007e	2008e	2009e	2010e	2011e	2012e
Net sales										
Petrochemicals	762	1,407	1,593	1,742	2,040	2,675	2,939	2,802	3,205	3,267
Fuel additives	368	687	979	1,007	1,075	1,483	1,133	943	912	878
Steel	880	1,778	1,789	2,790	3,840	4,053	3,314	3,563	3,548	3,548
Fertilizers	769	1,386	2,216	2,240	2,886	3,471	3,278	3,935	3,672	3,624
Consolidated net sales	2,779	5,258	6,578	7,778	9,841	11,683	10,664	11,244	11,337	11,318
Cost of sales (excludes depreciation)	1,115	1,882	2,541	3,567	4,222	4,547	4,330	4,743	5,061	5,087
Gross profit	1,664	3,376	4,037	4,211	5,619	7,135	6,334	6,501	6,276	6,230
SG&A expense	273	500	375	414	465	643	587	618	624	622
SG&A to sales	9.8%	9.5%	5.7%	5.3%	4.7%	5.5%	5.5%	5.5%	5.5%	5.5%
D&A expense	347	515	557	525	532	683	697	778	802	822
Unusual charges										
Operating Income	1,044	2,360	3,105	3,273	4,622	5,809	5,050	5,104	4,851	4,786
Interest (excluding interest income)	(14)	(34)	(56)	(44)	(78)	(186)	(186)	(186)	(186)	(186)
Equity in (loss) earnings from associates	15	58	51	20	50	50	50	50	50	50
Equity in (loss) earnings of investments	4	4	12	10	40	30	20	30	30	15
Other Income (including interest income)	80	110	104	364	356	321	391	450	506	609
Income before taxes	1,129	2,498	3,217	3,622	4,989	6,025	5,325	5,449	5,251	5,274
Provision for taxes (benefit)					0	0	0	0	0	0
Tax rate	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Accounting changes										
Minority interest/other (expense)	0	2	2	3	2					
Net Income (a)	1,129	2,497	3,215	3,620	4,987	6,025	5,325	5,449	5,251	5,274
Non rec'g income (expense), after tax					0					
Net income, ex-non-rec'g's	1,129	2,497	3,215	3,620	4,987	6,025	5,325	5,449	5,251	5,274
Preferred dividends(b)										
Net income, reported(a+b)	1,129	2,497	3,215	3,620	4,987	6,025	5,325	5,449	5,251	5,274
EPS	2.26	4.99	6.43	7.24	9.97	12.05	10.65	10.90	10.50	10.55
EPS recurring	2.26	4.99	6.43	7.24	9.97	12.05	10.65	10.90	10.50	10.55
Number of shares (diluted)	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0
Dividend per share	0.00	2.00	3.50	3.50	4.00	6.03	5.33	5.45	5.25	5.27
Shares repurchased		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Price of shares repurchased										
EBITDA										
EBITDA	1,391	2,876	3,662	3,797	5,154	6,493	5,748	5,882	5,652	5,608
EBITDA margin	50.1%	54.7%	55.7%	48.8%	52.4%	55.6%	53.9%	52.3%	49.9%	49.6%
EBITDA per share	2.78	5.75	7.32	7.59	10.31	12.99	11.50	11.76	11.30	11.22
EBITDA per share growth		106.7%	27.4%	3.7%	35.7%	26.0%	-11.5%	2.3%	-3.9%	-0.8%

Source: Company reports, HSBC estimates

Industries Qatar: Balance sheet (QARm)

	2003	2004	2005	2006	2007e	2008e	2009e	2010e	2011e	2012e
Assets:										
Bank balances and cash	2,547	3,218	3,950	4,626	5,357	6,509	7,504	8,430	10,144	11,907
Accounts receivable	410	620	876	1,150	1,312	1,558	1,422	1,499	1,512	1,509
Inventories	557	705	1,023	1,142	1,407	1,299	1,237	1,355	1,446	1,453
Due from related parties	300	554	471	543	543	543	543	543	543	543
			24	27	27	27	27	27	27	27
Total current assets	3,814	5,096	6,344	7,489	8,647	9,936	10,734	11,854	13,672	15,440
Property, plant & equipment, gross	10,685	11,378	12,109	14,188	16,688	19,188	21,688	24,188	25,888	27,586
Less: Accumulated depreciation	6,322	6,794	7,321	7,802	8,334	9,017	9,715	10,493	11,294	12,116
Property, plant & equipment, net	4,363	4,583	4,827	6,386	8,354	10,170	11,973	13,695	14,594	15,470
Investment in associates	302	211	339	359	359	359	359	359	359	359
Investments available for sales		266	394	294	294	294	294	294	294	294
Intangible assets			72	72	72	72	72	72	72	72
Investment property				118	118	118	118	118	118	118
Goodwill										
Other assets	203	89	112	163	163	163	163	163	163	163
Total assets	8,682	10,246	12,088	14,880	18,007	21,113	23,713	26,556	29,272	31,916
Liabilities:										
Current portion of long-term debt	155	398	556	205	205	205	205	205	205	205
Accounts payable	337	444	643	1,067	1,206	1,299	1,237	1,355	1,446	1,453
Due to related party	71	250	371	422	422	422	422	422	422	422
Other accrued liabilities					0	0	0	0	0	0
Total current liabilities	563	1,093	1,570	1,695	1,834	1,927	1,865	1,983	2,074	2,081
Long-term debt	1,808	1,204	1,058	1,962	1,962	1,962	1,962	1,962	1,962	1,962
Other liabilities and deferred credits										
Subordinated loan				41	41	41	41	41	41	41
Interest rate swaps										
Provision for employees EOSB	103	120	96	119	119	119	119	119	119	119
Total liabilities	2,474	2,417	2,723	3,816	3,955	4,048	3,986	4,104	4,195	4,202
Minority interest	9	11	12	12	12	12	12	12	12	12
Shareholders' equity:	6,199	7,818	9,353	11,052	14,040	17,052	19,715	22,439	25,065	27,702
Total liability and shareholders' equity	8,682	10,246	12,088	14,880	18,007	21,113	23,713	26,556	29,272	31,916

Source: Company reports, HSBC estimates

Industries Qatar: Cash flow statement (QARm)

	2003	2004	2005	2006	2007e	2008e	2009e	2010e	2011e	2012e
Operating activities										
Net income	1,129	2,497	3,215	3,620	4,987	6,025	5,325	5,449	5,251	5,274
Cumulative effect of changes in accounting principles										
Depreciation and amortization	347	515	557	525	532	683	697	778	802	822
Deferred income taxes					0	0	0	0	0	0
Goodwill written off		113								
	19	30	17	40						
Provision for doubtful debts + obsolescence	8	6	(6)	3						
				(107)						
Loss (profit) on disposal of investments			9	3						
Income from associates	(15)	(58)	(51)	(20)						
Finance charges	14	34	56	44						
Loss (gain) on sale of assets	1	3	1	2						
(Increase) decrease in accounts receivable		(465)	(173)	(346)	(162)	(246)	136	(77)	(12)	3
(Increase) decrease in inventories	-8	(151)	(312)	(122)	(266)	108	62	(118)	(91)	(7)
Increase (decrease) in accounts payable	-138	287	319	476	139	93	(62)	118	91	7
Other assets and liabilities					0	0	0	0	0	0
Payments toward EOSB	-13	(13)	(47)	(17)						
Net cash provided by operating activities	1,305	2,797	3,584	4,099	5,231	6,664	6,158	6,150	6,040	6,099
Financing activities										
Payments on long-term debt					0	0	0	0	0	0
Proceeds from issuance of long-term debt	480									
Issuance of common stock	5,000									
Net (decrease) increase in short-term debt										
Repayment of capitalized leases										
Net movement of loans	(135)	(360)	11	554						
Finance charges paid	(14)	(34)	(56)	(44)						
Minority owners (distributions) contributions	9		(2)	(1)						
Repurchase of common stock										
Dividends paid		(1,000)	(1,750)	(1,750)	(2,000)	(3,013)	(2,663)	(2,724)	(2,625)	(2,637)
Other										
Net cash used in financing activities	5,340	(1,394)	(1,797)	(1,242)	(2,000)	(3,013)	(2,663)	(2,724)	(2,625)	(2,637)
Investing activities										
Capital expenditures	(4,093)	(703)	(809)	(2,107)	(2,500)	(2,500)	(2,500)	(2,500)	(1,701)	(1,698)
Acquisitions of investments + other assets		(9)	(207)	(68)	0	0	0	0	0	0
Contribution and advances to affiliates										
Distributions from affiliates in excess of earnings		19	13	5						
Movement in project under development	(6)	(47)	6	(53)						
Proceeds from sales of assets + investments	1	8	48	43						
Movements in deposits maturing after ninety days	(388)	63	(945)	(229)						
Expenditure on product development			(72)							
Proceeds from sales of short-term investments										
Other			(35)	(2)						
Net cash used in investing activities	(4,486)	(671)	(2,002)	(2,411)	(2,500)	(2,500)	(2,500)	(2,500)	(1,701)	(1,698)
Effect of exchange rate changes on cash					0	0	0	0	0	0
Increase (decrease) in cash & equivalents										
Net increase (decrease) in cash and cash equivalents	2,159	732	(215)	446	731	1,152	996	925	1,714	1,764
Cash at beginning of period	0	2,159	3,218	3,950	4,626	5,357	6,509	7,504	8,430	10,144
Cash at end of period	2,547	3,218	3,950	4,626	5,357	6,509	7,504	8,430	10,144	11,907

Source: Company reports, HSBC estimates

Glossary of terms

ABS: Acrylonitrile-butadiene-styrene terpolymer. An engineering plastic known for its ductility, impact resistance, thermal and chemical resistance and a glossy surface.

Active ingredient: A finished but unformulated pharmaceutical or agrichemical compound that “endows” its properties.

Adhesives: A material used to bond two solids together.

Alkylate: Gasoline blend stock component manufactured by chemically joining several short chain molecules such as propylene and butylene.

Alkylation: The conversion of lighter petroleum hydrocarbons into heavier hydrocarbons. This process is primarily used to produce components of gasoline that increase octane.

Alloy: A macroscopically homogeneous mixture or solid solution, usually of two or more metals.

Ambient atmospheric conditions: Generally refers to room temperature or pressure.

Amorphous: Having no clear shape.

Annealing: The process of heating a material just below its heat distortion point to relieve stresses.

Aromatics: An organic compound that has a hexagonal ring of carbon atoms; for example, benzene.

Atom: The smallest part of an element that can take part in a chemical reaction. The atom consists of three fundamental particles: the proton, the

neutron, and the electron. There are 92 different kinds of naturally occurring atoms (elements).

Base chemical: Chemical building blocks from which many downstream products are made; for example, ethylene and benzene.

Benzene: Used as a feedstock in the production of many petrochemicals, plastics, and familiar consumer products.

Biocides: Chemicals used to kill bacteria.

Biotechnology: The application of scientific and engineering principles to the processing of materials by biological agents to provide goods and services. In terms of chemical engineering, biotechnology refers to the use of a biological catalyst to bring about a desired chemical transformation.

Bitumen: Mixture of hydrocarbons found in asphalt or tar used for surfacing roads or waterproofing.

Blending: Forming a uniform mixture so that constituents are indistinguishable from each other.

Blow molding: A type of processing for plastic resin that uses air to conform hot plastic to the shape of the mold. Product examples include milk bottles, shampoo bottles, and children’s toys.

Bottlenecks: A limiting factor. Term used in industry to refer to any factor that limits production.

Brownfield plant: Refers to redevelopment or a site that has an existing industrial development located on it.

Builder: A chemical used in the manufacture of detergents.

Capacity utilization: Percentage of available capacity used for production. Capacity utilization = $(\text{production/capacity}) \times 100\%$.

Captive market: A market that over the short term has a limited choice of suppliers.

Catalyst: A substance that accelerates the rate of chemical reactions.

Chemical: A substance with a distinct molecular composition that is used by or produced in a chemical process.

Chiral: An asymmetric object or molecule.

Chlor-alkali: Chemistry of chlorine and caustic soda. Chlorine is mainly used in the production of vinyls, and caustic soda is used for a variety of applications, with bleaching pulp and paper being the largest one.

Colloid: A particle between several nm and several mm in size, such as polymer latex. Colloids play an important role in numerous products, including polishing slurries, glasses, paints, emulsions, and foods, for example.

Commodity chemicals: Chemicals that are sold in bulk with little differentiation between suppliers and generally lower margins than specialty chemicals (tend to be dominated by large producers with economies of scale). Competitive advantage is gained through market share, economies of scale, feedstock cost reductions, or logistics advantages.

Co-monomer: A monomer added to the starting material to alter the final product.

Complex intermediates: Intermediates that have undergone further processing and refining.

Compound: A substance that is made of two or more elements chemically bonded together.

Crackers: Production facilities for the manufacture of large volumes of petrochemicals from either oil or gas feedstocks.

Cracking: The process of splitting long chains of organic molecules (ie, naphtha) into smaller molecules (ie, ethylene).

Cryogenic separation: Separation of materials based on differences in freezing points.

Crystals: Solids that have a regular polyhedral shape. All crystals of the same substance grow so that they have the same angles between their faces.

Cumene: Derivative of benzene used in the manufacture of phenol and acetone.

Curing: Process of converting a resin from a flowable mass to a tack-free solid by addition of a curing agent.

De-bottlenecking: Process of removing factors limiting production.

Dehydration: Removal of water from a substance by a chemical reaction.

Dehydrogenation: A chemical reaction in which hydrogen is removed from a compound. Dehydrogenation of organic compounds converts single carbon-carbon bonds into double bonds. Used to produce propylene from propane.

Derivative: Chemical compound derived or made from other chemicals. Polyethylene is an ethylene derivative.

De-stocking: Bringing down inventory levels.

Diluent: A modifier added to a resin to lower the viscosity (thin it down).

Disproportionation: A method used in the production of benzene whereby a compound is simultaneously oxidized and reduced.

Distillation: A method used to separate two or more substances in a mixture by vaporizing followed by condensation.

Dopant: The impurities added to silicon during the manufacturing of a semiconductor to increase or decrease various properties such as electrical conductivity. Dopants may include arsenic, antimony, bismuth, and/or phosphorus.

Downstream activities: Refers to processing of hydrocarbons such as crude oil and natural gas into compounds that form petrochemical feedstocks or other usable products.

Drying: Removal of small quantities of water/solvents from a sample by physical or chemical means.

Effective capacity: Actual capacity taking into account planned and unplanned shutdowns.

Effluent: The waste product produced during a chemical process.

Elastomer: A material that can be stretched to at least twice its original length.

Electro chemical unit (ECU): Also called electrochlor unit. The chlor-alkali process produces chlorine and caustic soda in set ratios of 1 unit of chlorine per 1.1 unit of caustic. The combination of 1 unit of chlorine and 1.1 unit of caustic soda is referred to as an ECU.

Electrolysis: The passing of an electric current through a solution, which then attracts negative ions to the positive terminal (anode) and positive ions to the negative terminal (cathode).

Electron: Negatively charged particle found in the nucleus of an atom.

Electronegativity: Having a negative electric charge.

Element: A pure substance that cannot be broken down chemically into anything simpler.

Endothermic: A chemical reaction that requires heat, drawing it from the surroundings.

Epitaxy: The chemical vapor deposition of a substance. Silicon epitaxy is deposited onto silicon wafers used to manufacture semiconductors devices, such as discrete transistors or integrated circuits.

Ethylbenzene (EB): A colorless organic liquid with a sweet, gasoline-like odor. The greatest use – over 99% – of ethylbenzene is to make styrene, another organic liquid used as a building block for many plastics. It is also used as a solvent for coatings and in making rubber and plastic wrap.

Ethylene: A two carbon molecule with a reactive double bond, that is, $C=C$ (C_2H_4).

Ethylene dichloride (EDC): Clear colorless liquid with a sweet odor and taste. Principally used as a raw material for PVC production.

Ethylene glycol (EG): Key derivative of ethylene with a variety of end-use applications.

Ethylene oxide (EO): An industrial chemical used in sterilizing medical items, fumigating spices, and manufacturing other chemicals. Pure ethylene oxide is a colorless gas at room temperature and a mobile, colorless liquid below 54 degrees Fahrenheit.

Exothermic: A chemical reaction that liberates heat, transferring it to the surroundings.

Expandable polystyrene (EPS): Plastic used in a range of products from bicycle helmets to point of purchase displays, from construction applications to speciality packaging, toys, electronics, and appliances.

Extenders: Inert fillers added to resins for the purpose of increasing the volume of the resin mix.

Extrusion: A type of processing for plastic in which melted plastic is continuously pushed

through holes in a metal plate, or die. Extrusion applications vary from water and gas pipe to thin films like grocery bags.

Feedstock: Basic raw material that is converted or altered into another product in a chemical process.

Fermentation: The production of alcohol from sugar or similar substance, usually using yeast.

Filament fiber: Polyester fiber made in long lengths and used in woven applications such as garments and carpets.

Fine chemicals: Chemicals produced in small volumes to exacting specifications.

Floor price: Generally the lowest price for which a product will trade. The floor price is often equal to the cost of production.

Fluid catalytic cracking (FCC): Refinery process in which crude oil fractions are converted into gasoline. The process requires high temperature and the presence of a catalyst. Propylene is a petrochemical byproduct of FCC.

Fraction: A substance separated in fractional distillation.

Fractional distillation: A process by which components in a chemical mixture are separated according to their different boiling points. Fractional distillation is used to produce gasoline from crude.

Fractionation columns: Columns in which fractionation or chemical separation by boiling point takes place.

Fungible: Something that is exchangeable or substitutable. Used in reference to certain commodity chemicals.

Genomics: The scientific discipline of mapping, sequencing, and analyzing an organism's complete set of genes based on the knowledge of its entire DNA sequence.

GMO: Genetically modified organisms

GPPS, general purpose polystyrene: General-purpose polystyrene is well-suited for a variety of end uses in the consumer electronics, health care, construction, and packaging industries.

Greenfield plant: Capacity added to a site where none existed. Generally includes items such as roads, sewers, and communication equipment that do not have to be added at existing plants.

Halides: A binary chemical compound of a halogen with a more electropositive element or group.

Halogenation: The addition to a molecule of a halogen atom, that is, fluorine, chlorine, bromine, iodine, or astatine.

HDPE, high-density polyethylene: A thermoplastic resin made from ethylene. Commonly used for grocery bags, Tupperware, and milk jugs.

Herbicide: Chemicals used to control weed/foilage growth.

Heterogeneous: Consisting of dissimilar elements or parts; not homogeneous.

HIPS: High-impact polystyrene known for its ease of processing, dimensional stability, impact strength, and rigidity.

Homogeneous: Consisting of similar elements or parts; not heterogeneous.

Homopolymer: A polymer resulting from the polymerization of a single monomer; a polymer consisting substantially of a single type of repeating unit.

Hydrocarbons: Compounds containing only hydrogen and carbon atoms. Hydrocarbons are the basic materials in the oil, gas, and chemical industries.

Hygroscopic: A material that absorbs moisture.

Industrial gases: Gases used in industrial and manufacturing processes such as steel production, semiconductor manufacture, or oil drilling.

Inhibitor: A compound that slows the rate of a chemical reaction.

Injection molding: Injection molding is a process by which we take raw plastic material in the form of small pellets (also referred to as resin), heat it gently to the point where it will flow under moderate pressure, and inject it (push it with a plunger) into a mold.

Inorganic chemistry: Noncarbon-based chemistry.

Input traits: Alteration of plant genetics to create a stronger or more resistant plant, thereby increasing overall crop yield.

Insecticides: Chemicals used to control pests or infestations.

Ion: An atom or group of atoms that has gained or lost one or more electrons, causing it to become negatively or positively charged. Oppositely charged ions attract to form ionic bonds. The ionic method is used to form polymers from monomers during a process called condensation polymerization, which produces water as a byproduct.

Isomer: A compound having the same molecular weight but differing in physical or chemical properties. Isobutane is an isomer of butane.

Isotopes: Different forms of the same element. The different forms behave identically in a chemical manner but have different mass.

Latex: A stable aqueous dispersion used to synthesize rubbers, as well as paper coatings and carpet backing.

LDPE, low-density polyethylene: A thermoplastic resin made from ethylene. Commonly used for

food packaging and plastic coatings for paper products.

LLDPE, linear low-density polyethylene: A thermoplastic resin made from ethylene. Commonly used for shrink wrap, trashcan liners, and packaging.

LPG, liquefied petroleum gas: One of the main feedstocks for a petrochemical cracker. It is obtained by the fractional distillation of crude oil.

MDI: A form of polyurethane.

MEG: Mono ethylene glycol (see ethylene glycol).

Merchant market: The external (that is, free) market in which products may be sold.

Metathesis: A chemical reaction between two compounds in which parts of each are interchanged to form two new compounds. Also known as double decomposition.

Methanol: Simplest form of alcohol used in diverse applications, including formaldehyde, MTBE, and acetic acid production.

Mixed xylene: Mixture containing ortho-, para-, and meta-xylene. Used in the production of solvents and gasoline.

Molecule: A molecule is the smallest particle of a chemical compound that can maintain its individual properties and independent existence. A molecule is expressed as a chemical formula, such as H₂O.

Monomer: Base or repeated unit in a polymer. Ethylene is a monomer, which, among other polymers, goes into polyethylene.

MTBE, methyl tertiary butyl ether: Oxygenates, including MTBE, are used in fuels to reduce vehicle exhaust emissions while maintaining high performance.

Nameplate: As stated, usually referring to amount of capacity as stated by the company.

Nanotechnology: The development and use of devices that have a size of only a few nanometres. Frequently used to refer to the building of electronic circuits from single atoms and molecules.

Naphtha: One of the main feedstocks for a petrochemical cracker. It is obtained by the fractional distillation of crude oil.

Natural gas: One of the main feedstocks for a petrochemical cracker. It is obtained directly from natural gas fields.

Neutralization: The process by which an acid and alkali mix to form a neutral substance.

Neutron: Chargeless particle found in the nucleus of an atom.

Nitration: A chemical process that adds nitrogen atoms to a molecule.

Nitrous oxide (Nox): A pollutant produced during crude cracking.

OEM, original equipment manufacturers: Initial production market, rather than a repair or secondary market.

Off-take agreement: Refers to a contractual agreement for one party to supply another with a product within certain conditions such as purity, timing, and volume. It obligates the off-taker to accept the product regardless of market conditions.

Olefin: A product with straight chain hydrocarbons that may have one or more double bonds conferring reactivity.

Organic chemistry: Chemistry based on carbon atoms.

Organometallics: Compounds in which carbon or organic groups are attached to metal or metalloid atoms.

Output traits: This activity uses genetic engineering to change the chemical or nutritional quality of the final crop or product.

Oxidation: A type of reaction where electrons are removed from a molecule or where oxygen atoms are added to a molecule.

Pasteurize: To eliminate disease causing micro-organisms and limit fermentation in liquids by heating.

PET, polyethylene terephthalate: Member of the polyester family commonly used in bottle resin, film, and fibers.

Petrochemical: Any chemical derived from crude oil, crude products, or natural gas. Petrochemicals are used in the manufacture of numerous products such as synthetic rubber, synthetic fibers (eg, nylon and polyester), plastics, fertilizers, paints, detergents, and pesticides.

Phenol: Intermediate chemical whose major derivatives include phenol A, cyclohexanes, and phenolic resin.

Photochemistry: Chemical reactions brought about by the action of light.

Physical properties: Properties not concerned with the chemistry of a product, such as melting point, boiling point, and hardness.

Pigment: Colored, insoluble substance (either organic or inorganic) used to impart color.

Plastics: Synthetic materials with the ability to flow, take shape, and solidify.

Plasticizer: A chemical added to vinyls to make them softer or more pliable.

PO/SM: Propylene oxide/styrene monomer. Usually refers to a production process that results in producing both products.

Polyvinyl chloride (PVC): Part of the vinyls chain. In flexible form, used for film, flooring, auto upholstery, eg; in rigid form, used in siding for houses, and pipes, eg.

Polyethylene: Translucent to clear, tough, waxy solid that is unaffected by water and a wide range of chemicals.

Polymer: Hydrocarbon chain made by the repetition of units called monomers. Polyethylene is an example of a polymer made with ethylene as the repetitive unit or monomer.

Polymerization: Process by which monomers are joined in long chains to form polymers; generally requires high heat or pressure or the presence of a catalyst.

Polypropylene: A polymer with properties making it extremely versatile and able to be used in substitution for wood, metal, glass, and plastics.

Polystyrene: Low-cost plastic made from styrene.

Polyurethane: Any of various resins, widely varying in flexibility, used in tough chemical-resistant coatings, adhesives, and foams.

Preform: Compressed molding compound.

Primer: A coating applied to a bonding surface prior to the application of an adhesive to improve the quality of the bond.

Propane dehydrogenation: The process of forming propylene from propane.

Propylene: A three carbon molecule with a reactive double bond, that is $C=C$ (C_3H_6) used to make gasoline components or as a feedstock for petrochemicals.

Propylene oxide (PO): An alkyl epoxide used principally as a chemical intermediate.

Proton: Positively charged particle found in the nucleus of an atom.

Pyrolysis: The thermal decomposition of organic material through the application of heat in the absence of oxygen. All polymers are subject to thermal degradation at some level of temperature, producing small molecular fragments that appear as an organic vapor.

Reduction: A type of reaction where electrons are added to a molecule.

Resin: Intermediate products used to impart a particular characteristic to the final product, eg, heat resistance and adhesive properties.

Salt domes: Naturally occurring underground salt deposits, which are solution mined for salt. The holes left in underground salt domes form caverns that are used for petrochemical storage.

Sealants: Material that is initially fluid or semifluid, placed between two opposing solid materials, becomes solid itself (by solvent evaporation or chemical reaction), bonds to the surfaces to which it is applied, and accommodates joint movement. Prevents excessive absorption of adhesives or penetration of liquid or gaseous substances.

Slurry: A liquid containing abrasive solids that is typically used in the chemical mechanical polishing (CMP) process. CMP is a method of removing layers of solid for the purpose of surface planarization in the production of semiconductors.

Solid polystyrene (SPS): Low cost, versatile plastic made from styrene.

Soluble: A substance that is capable of being dissolved in some solvent (usually water).

Solvent: A liquid that dissolves another substance to form a solution.

SPA: Solid phosphoric acid.

Speciality chemicals: Chemicals produced in small tonnage, having higher unit values and used

for critical applications requiring stringent performance criteria.

Staple fiber: Polyester fiber made in short lengths (1-1.5 inches) and used in nonwoven applications such as filling for pillows, diapers, and jackets.

Styrene: Clear liquid used in polystyrene production and in products that are processed into packaging, coatings, molded products, and adhesives, eg.

Styrene acrylonitrile (SAN): This material is used for making transparent barrels of expensive pens due to its greater strength and clarity.

Styrene-butadiene latex (SBL): A water-based polymer produced by emulsion polymerisation from styrene and butadiene. Major uses of SBL include carpet backing and paper coating.

Styrene-butadiene rubber (SBR): A high molecular weight polymer. Because of its excellent abrasion resistance, SBR is widely used in automobile and lorry (truck) tyres (tires), belting, flooring, wire and cable insulation, and footwear, and as a paper coating.

Substrate: The body or base layer of an integrated circuit, onto which other layers are deposited to form the circuit. The substrate is usually silicon, though sapphire is used for certain applications, particularly military, where radiation resistance is important.

Sulfonation: A chemical process that adds sulfur atoms to a molecule.

Surfactant: Short for surface active agent, a molecule that has both water-loving and water-hating properties.

Synthesis gas: A mixture of carbon monoxide, hydrogen, carbon dioxide, and other gases.

Systemics: The branch of science that addresses holistic systems. Wholes need to be conceptualized

and studied as systems because they are not merely the sum of their parts.

TDI: A form of polyurethane.

Tertiary butyl alcohol (TBA): Widely used in the manufacturing of perfumes and a variety of cosmetics. Also used as a raw material in MTBE production.

Thermoplastic: Resin produced via polymerization of monomers. A thermoplastic material softens on heating and hardens upon cooling.

Thermoset: Resin produced via polycondensation of monomers. It is insoluble and commonly used in nonmolded applications such as industrial paints and varnishes.

Transgenic crops: A crop that has been modified by genetic engineering to contain DNA from an external source.

UHMW-PE: Ultra high molecular weight polyethylene with molecular weight in the 1,500,000-3,000,000 range.

ULDPE: Ultra low-density polyethylene. Relatively new class of polyethylene with densities between 0.89 and 0.915. Provides flexibility and toughness at a wide range of temperatures and is mainly used in film and sheet applications.

Upstream activities: Refers to exploration and production of hydrocarbons such as crude oil and natural gas.

Vinyl chloride monomer (VCM): Part of the vinyls chain used in PVC production.

World-scale plant size: Plant size necessary to achieve economies of scale and be competitive in the global markets. Plant size varies by product.

Xylene: Aromatic compound used in production of solvents and gasoline.

Disclosure appendix

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Issuer of report

HSBC Securities (USA) Inc

452 Fifth Avenue, 9th floor

HSBC Tower

New York, NY 10018, USA

Telephone: +1 212 525 5000

Fax: +1 212 525 0354

Website: www.research.hsbc.com

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[211044]

Global Natural Resources & Energy Research Team

Metals and Mining

Paul McTaggart
Global Industry Head, Natural Resources
+44 20 7991 6798 paul.mctaggart@hsbcib.com

Europe

Alan Coats
+44 20 7991 6764 alan.coats@hsbcib.com

Shamim Mansoor
+44 20 7991 3448 shamim.mansoor@hsbcib.com

Thorsten Zimmermann
+44 20 7991 6835 thorsten.zimmermann@hsbcib.com

North America

Victor Flores
+1 212 525 3053 victor.flores@us.hsbc.com

Erica Brailey
+1 212 525 7669 erica.c.brailey@us.hsbc.com

Jordi Dominguez
+1 212 525 3460 jordi.x.dominguez@us.hsbc.com

James Steel
Analyst, Commodities
+1 212 525 6515 james.steel@us.hsbc.com

CEMEA

Veronika Lyssogorskaya
+44 20 7992 3686 veronika.lyssogorskaya@hsbcib.com

Asia

Daniel Kang
+852 2996 6669 danielkang@hsbc.com.hk

Sarah Mak
+852 2822 4551 sarahmak@hsbc.com.hk

Harumi Kosaka
+81 3 5203 3818 harumi.kosaka@hsbc.co.jp

Energy

Europe

Paul Spedding
Global Sector Head, Oil and Gas
+44 20 7991 6787 paul.spedding@hsbcib.com

David Phillips
+44 20 7991 2344 david1.phillips@hsbcib.com

CEMEA

Anisa Redman
+44 20 7991 6822 anisa.redman@hsbcib.com

Asia

Andrew Chan
+852 2996 6569 andrewsfchan@hsbc.com.hk

Henik Fung
+852 2996 6557 henikfung@hsbc.com.hk

Vishwas Katela
+91 22 2268 1236 vishwaskatela@hsbc.co.in

Alternative Energy

Robert Clover
Global Sector Head, Alternative Energy
+44 20 7991 6741 robert.clover@hsbcib.com

James Magness
+44 20 7991 3464 james.magness@hsbcib.com

Coal & Consumable Fuels

Hassan Ahmed
+1 212 525 5359 hassan.ahmed@us.hsbc.com

Sriharsha Pappu
+1 212 525 7959 sriharsha.pappu@us.hsbc.com

Diana P Lawrence
+1 212 525 5150 diana.p.lawrence@us.hsbc.com

Chemicals

Hassan Ahmed
Global Sector Head, Chemicals
+1 212 525 5359 hassan.ahmed@us.hsbc.com

Henik Fung
+852 2996 6557 henikfung@hsbc.com.hk

Steven Hong Xing Li
+852 2996 6941 stevenhongxingli@hsbc.com.hk

Sriharsha Pappu
+1 212 525 7959 sriharsha.pappu@us.hsbc.com

Diana P Lawrence
+1 212 525 5150 diana.p.lawrence@us.hsbc.com

Utilities

Europe

Verity Mitchell
+44 20 7991 6840 verity.mitchell@hsbcib.com

Asia

Prasad Dahapute
+91 22 2268 1246 prasaddahapute@hsbc.co.in

Credit

North America

John Kollar
+1 212 525 3118 john.kollar@us.hsbc.com

Specialist Sales

Paul Durham
+1 212 525 0221 paul.durham@us.hsbc.com

Kathleen Fraser
+44 20 7991 5347 kathleen.fraser@hsbcib.com

Mitesh Kotecha
+44 20 7991 5387 mitesh.kotecha@hsbcib.com