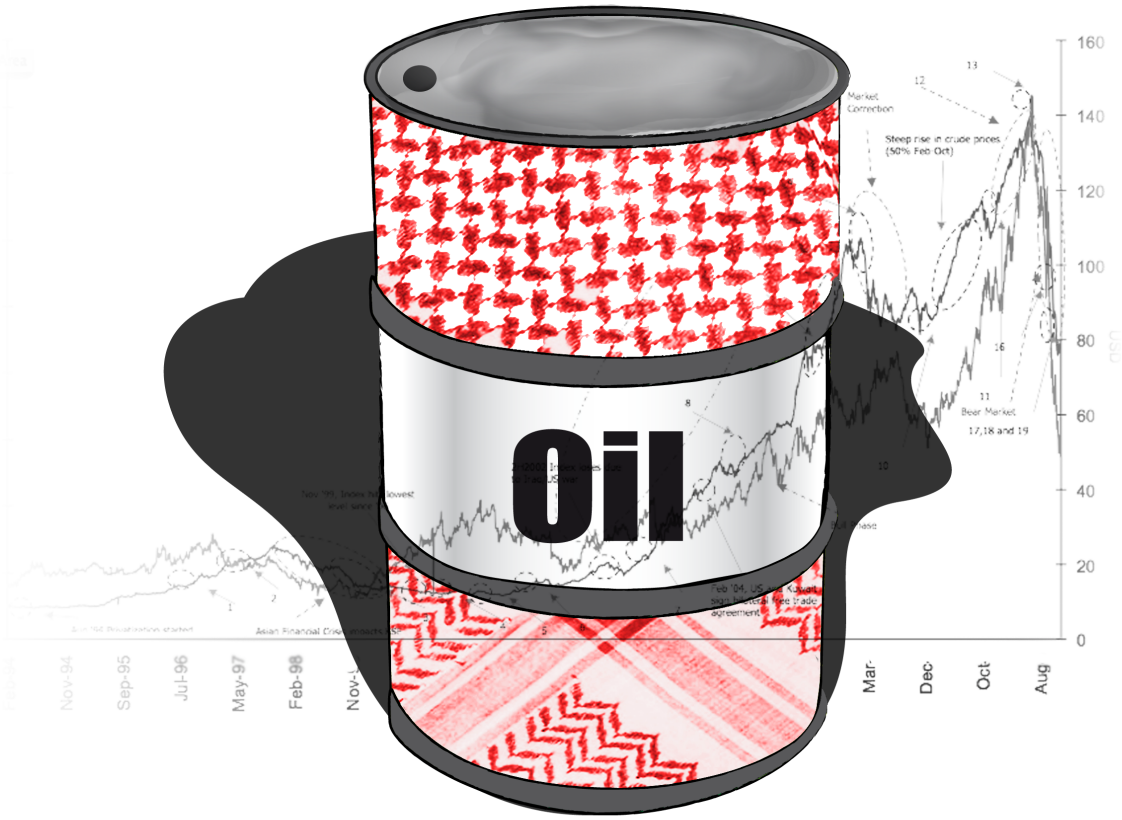
Markaz Strategic Research

Diworsification: The GCC Oil Stranglehold



January 2009

Research Highlights:

To analyze the role of oil for GCC economies, estimate oil price scenarios and explore the relationship between oil prices and stock market performance.

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"The Energy crisis is the inevitable consequence of the explosive growth of world-wide demand outrunning the incentives for supply."

"The long-term solution is a massive effort to provide producers an incentive to increase their supply, to encourage consumers to use existing supplies more rationally and to develop alternative energy sources"

Henry Kissinger, Speech to the Pilgrims Society London, 12 December ?????

Looks like Henry gave this speech yesterday! How ironic that the world (in Henry's view) hasn't changed since 1973 when he made that speech. Both oil exporters as well as consumers are still searching for the three solutions that he proposed i.e., increasing supply, reducing consumption and developing alternatives.

Every successive oil price spike actually goes to negate the feeble attempts by oil producing and exporting countries, especially the GCC, to diversify their economies and reduce the dependence and inherent volatility. The region has remained a price taker in spite of the so-called stranglehold that it is supposed to possess. Being a capital intensive industry, it does not solve social issues like unemployment. Being nationally owned, it does not get represented in the local stock markets. Thus, the intricate web of oil produces more dimensions than what is normally estimated.

This paper is an attempt to quantify the relationship between Oil prices and GCC economies, especially in terms of the stock markets. We raise the following questions in this research:

1. How strong is the role of oil for GCC economic planners?
2. What is a credible expectation for oil price-both short-term and long-term?
3. How strong is the relationship between oil prices and the GCC stock markets?

Our study finds a very strong relationship between oil price and the shape of the economy. The strong price performance of oil during the last 5 years has only increased this relationship even further. We expect oil price to average $45/bbl during 1H09 & $60/bbl during 2H09. Finally, the relationship between oil price and stock index is even stronger than we had initially expected.

A. The GCC Economics of Oil

56% of the world's oil reserves are in the Middle East, specifically Saudi Arabia and Kuwait, which have the world's largest and fifth largest proven crude oil reserves, respectively (or a combined 30% of the world's oil reserves)[1]. Consequently, the six GCC nations are heavily dependent on oil revenues as a source of income, as a result of which, oil prices have a heavy impact on economic welfare in the region.

The sharp increase in crude oil prices in the past five years (from an average of USD 31 per bbl in 2003, to an average USD 101 per bbl in 2008) resulted in a windfall of revenues for GCC states, thereby triggering an investment boom estimated at over USD 1.5 trillion aimed at improving infrastructures, diversifying economies and boosting industries.

As a precursor to analyzing the relationship between GCC stock markets and oil prices, we attempt to discern the degree of linkage between GCC economies and crude oil prices. We present our findings for the following impacts:

- Oil revenues to total revenues.
- Oil GDP to total GDP.
- Production.
- Reserves.

Saudi Arabia has the highest dependency on oil revenues out of the GCC at nearly 90%

1. Oil Revenues/Total Revenues

Most GCC economies are almost singularly dependent on oil revenues and are, therefore, extremely vulnerable to oil price movements. The country with the highest dependence on oil revenues is Saudi Arabia; this is not surprising, given that the Kingdom is the world's leading oil exporter in addition to being home of the world's largest proven crude oil reserves (264 billion barrels[2]). Roughly 87% of the Saudi government's 2007 revenues came from oil sales (Table 1). The historical trend shows this to be an increase in oil dependency as oil revenues represented 71% of total revenues for the Kingdom in 1999.

The country with the least dependency on oil revenues is Qatar, with 65% of its total revenues attributed to oil in 2007. The country has been implementing an aggressive expansionary fiscal policy in an effort to stimulate growth and diversify its economy, however, should the current global economic slowdown continue, or worsen, we would expect Qatar to fall back on its oil revenues.

Table 1: GCC Oil Revenues (as % of Total Revenues)

Country	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008f	2009f
Saudi Arabia	56	71	83	81	78	79	84	89	89	87	88	89
Kuwait	57	68	71	68	76	77	77	81	77	78	78	69
UAE	57	61	72	72	69	75	74	75	74	74	85	81
Qatar	59	72	81	68	65	64	66	67	64	65	71	72
Bahrain	47	56	73	69	67	73	73	76	77	80	85	84
Oman	65	74	83	80	77	73	79	83	83	80	86	86
GCC	**57**	**68**	**78**	**76**	**75**	**77**	**79**	**83**	**82**	**80**	**84**	**83**

Source: IIF

[1] EIA
[2] Oil & Gas Journal, December 2007

GCC governments have been on an expansionary run over the last few years, driven by increasingly fat state coffers, which are bloated from steady oil price increases during that period. GCC states have put these oil revenues to work, increasing their expenditure throughout the years.

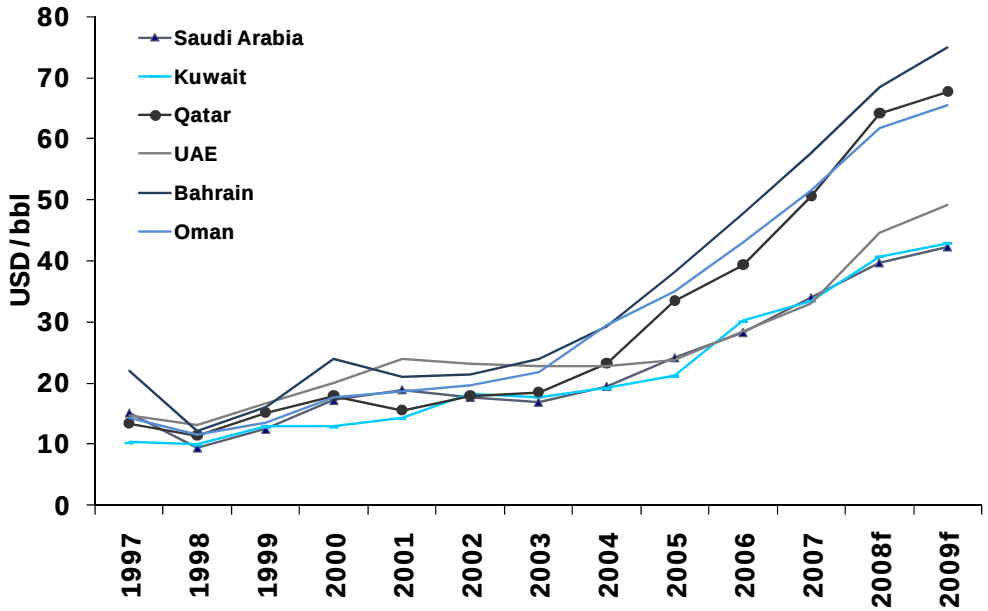
Recent oil price declines and expected further downward pressure in 2009 calls these expansionary fiscal policies into question; most GCC states have resigned themselves to running lower fiscal surpluses in 2009 or, in the case of Bahrain, the possibility of running a fiscal deficit. Government expenditure must remain on track in order to spur economic growth and continue the execution of infrastructure development, hence, in the absence of high oil revenues, GCC countries must run fiscal deficits or prune their expenditure programs.

This brings into question breakeven oil prices (BEP) for the GCC in 2009; i.e. the oil price at which, all other factors remaining constant, the state budget would be in balance. We have observed variations in BEP estimates (Table 2) and hence resorted to our own calculation. Our formula for BEP is a fairly straightforward one, which takes into account government expenditure over daily crude oil production, and solving for oil price. We also factored in oil revenues as a percentage of total revenues in order to more accurately capture the correct breakeven oil price (BEP = Gov't expenditure/annualized daily crude oil production multiplied by oil revenues as a percentage of total revenue). The more oil rich nations, like Kuwait and Saudi Arabia, will be able to balance their 2009 budgets on much lower oil prices ($43/bbl and $42/bbl, respectively) than less oil rich countries like Bahrain, Qatar, and Oman (Figure 1), as higher production quotas would compensate for lower average oil prices. Kuwait is in an even more uniquely positive position, as the small size of the country and population means that oil revenues are spread over a much lower base than, say, Saudi Arabia leading to an increase in per capita income.

Countries with high breakeven oil prices will have a more difficult 2009 fiscal year than those with low breakeven prices

Conversely, Bahrain and Oman, which have less oil, and by definition, less oil production, would need much higher average oil prices, $75/bbl and $66/bbl, respectively, in order to breakeven in 2009.

Figure 1: Breakeven Oil Prices



Source: IIF, Markaz Research

As for Qatar, the effect of lower average oil prices in 2009 on the fiscal budget is not as clear cut due to the dominance of natural gas revenues in Qatar. The country is home to the world's third-largest proven natural gas reserves (25.6 trillion cubic

meters, or 14% of world reserves[3]), in addition to being the world's largest producer of liquefied natural gas (LNG), with a capacity of more than 31 million metric tons per annum (mmta). Qatar expects to reach 77.5 mmta of LNG exports by 2010, which will account for one-third of the world's LNG supply[4]. Seeing as Qatar's economy is more dependent on natural gas (which, technically speaking, is considered hydrocarbon revenue) more than oil production, it stands to reason that lower oil prices in 2009 may not have a significantly negative impact on Qatar's fiscal budget and, by extension, economic growth in the coming year (assuming LNG prices remain relatively fixed in the long term).

Breakeven oil prices are highest for Oman and Bahrain and lower for Kuwait and Saudi Arabia

Table 2: 2008 Breakeven Oil Prices (USD/bbl)

Country	Credit Suisse	Merrill Lynch	IMF	Fitch Ratings	RGE Monitor	Markaz
Saudi Arabia	40	36	49	50	60	40
Kuwait	32	75	33	21	75	41
Qatar	76	55	24	N/A	N/A	64
UAE	67	40	23	31	45-50	45
Bahrain	N/A	55	75	74	N/A	69
Oman	N/A	50	77	N/A	N/A	62

Source: IMF, Credit Suisse, Merrill Lynch, Fitch, RGE Monitor, Markaz Research

2. Oil GDP/Total GDP

Approximately 30% of the total real GDP of the GCC is attributed to the oil sector

Historically, between 30% - 35% of the GCC's combined real GDP has been in the form of oil (Table 3). The country with the highest oil component to its real GDP is Qatar, where oil constituted 48% of real GDP in 2007. Kuwait follows with a 37% contribution of oil GDP in 2007, down from a high of 48% in 2000. Oman's oil GDP has decreased steadily through the years, from 35% of real GDP, to an expected 19% in 2009.

Bahrain is an interesting case; oil only accounts for 9% of real GDP (2008) whereas oil revenues account for 85% of total revenues. This could be due to the fact that Bahrain enjoys a diversified economy as compared to the majority of the GCC, with solid GDP contribution from Services and Financials, and yet it's most profitable economic activity remains oil related, accounting for the high percentage of oil in total government revenues.

Table 3: GCC Oil GDP (as % of Real GDP)

Country	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008f	2009f
Saudi Arabia	35	33	34	32	30	32	33	33	32	31	31	30
Kuwait	44	42	48	47	41	42	41	41	40	37	36	34
UAE	26	24	24	33	30	30	28	27	26	24	23	23
Qatar	55	57	59	57	59	57	56	53	50	48	50	52
Bahrain	16	17	18	17	17	16	13	11	10	10	9	9
Oman	35	35	35	32	31	28	26	25	23	21	20	19
GCC	**35**	**33**	**34**	**35**	**32**	**34**	**33**	**33**	**32**	**30**	**30**	**30**

Source: IIF

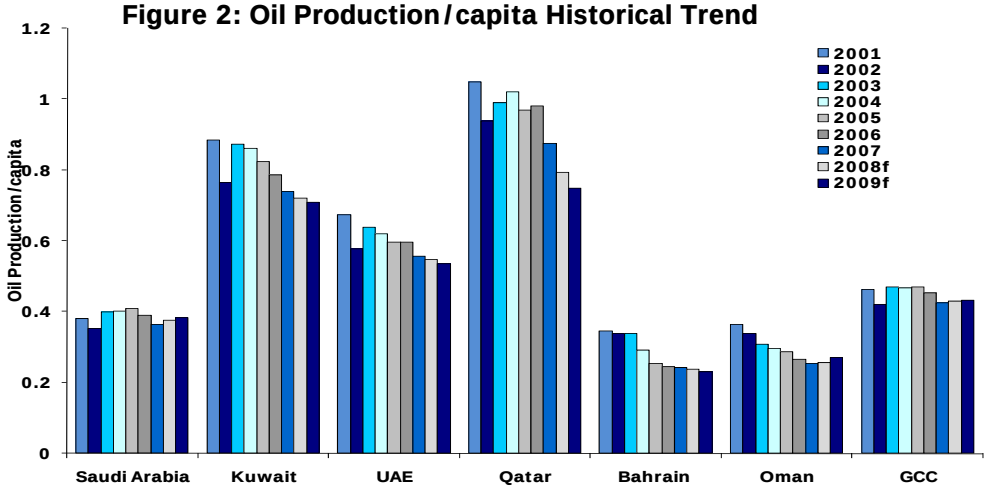
[3] BP Statistical Review, June 2008
[4] U.S. Department of State

3. Oil Production/capita

Crude oil, by nature, is a finite resource; and so, predictably, there has been a natural decline in output over the years coupled with sustained population growth in each of the GCC countries. This has caused oil production/capita to fall over the last ten years (Figure 2), though not by much in most cases. Pan-GCC oil production/capita has fallen to 0.42 bbl/person in 2007 from 0.52 bbl/person in 1998. Although an abundance of crude oil reserves in the GCC will sustain production, provided that investments are made in the exploration and production of oil, a rapidly growing population will lead to further declines in production/capita going forward.

As GCC populations have grown, oil production / capita has declined, most notably in the UAE

Figure 2: Oil Production/capita Historical Trend



Source: IIF, IMF World Economic Outlook Oct 2008

4. Reserves/capita

GCC proven crude oil reserves have remained steady over the past ten years, slightly increasing in the past three years as surpluses are invested in the discovery of additional reserves. Only Bahrain has seen a notable drop in its reserves, from 210 million barrels in 1998 to 125 million barrels in 2007; this coupled with a growing population has brought down Bahrain's Reserves/capita from 328 bbls/person in 1998 to an expected 160 bbls/person in 2008 (Table 4). The largest reserves/capita in the GCC is in Kuwait on account of high reserve levels (8% of the world's reserves) versus a small population. Reserves/capita is expected to be 30,206 bbls/person in 2008, down from 42,492 bbls/person in 1998. Saudi Arabia has the largest proven reserves in the world, 264 billion barrels as of 2007 (or one fifth of the world's reserves); however, Saudi is also the most populous country in the GCC. As a result, the Kingdom's reserves/capita ratio is expected to be 10,714 bbls/person in 2008 down from 13,410 bbls/person ten years ago.

Reserves/capita have remained relatively stable for most GCC states, except Bahrain, which has seen a notable decline due to population growth

Table 4: Reserves/capita (bbl/person)

Country	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Saudi Arabia	13,410	13,150	12,834	12,524	12,228	11,932	11,732	11,428	11,151	10,878	10,714
Kuwait	42,492	42,794	43,527	41,793	39,876	38,869	36,855	33,935	31,888	30,665	30,206
UAE	34,510	32,245	32,654	30,881	29,203	27,542	26,004	23,819	23,126	21,791	20,529
Qatar	22,341	23,291	21,622	25,989	24,650	38,434	35,735	33,750	33,305	29,501	24,954
Bahrain	328	242	221	218	178	175	173	170	166	163	160
Oman	2,479	2,425	2,435	2,431	2,335	2,266	2,248	2,223	2,189	2,168	2,119
GCC	**16,935**	**16,499**	**16,216**	**15,887**	**15,433**	**15,399**	**15,041**	**14,483**	**14,107**	**13,662**	**13,024**

Source: EIA, BP Statistical Review, IMF

B. Oil Price Expectations

"Prediction is very difficult, especially if it's about the future."
--Nils Bohr, Nobel laureate in Physics

No better year than 2008 to prove Nils Bohr's words so right, especially about oil prices. From (in)famous $200/bbl predictions and Goldman Sachs prediction of $149 by 2008 end, oil closed the year at less than $40; it has been a grim reminder of how even the most sophisticated analysts and economists can get it all wrong.

Oil prices are nearly impossible to predict with any degree of accuracy

Crude oil began 2008 at around $96/bbl, gaining steadily through the first half of the year before surging to a life-time high of $147/bbl in July on the back of a plummeting US Dollar, speculative investments in commodity markets and renewed political tension in the Middle East. The US-led global financial crisis and weaker economic indicators across the globe caused crude oil to rapidly shed 3/4th of its July 08 high values to the $30-$40 range by December 08. Oil prices closed out 2008 with an annual loss of 56%, the first annual decline since 2001 and the largest in its history of trading.

On the other hand, not long ago, "The Economist" screamed that the world was "drowning in oil"[5] and oil could go to $ 5 per barrel! And the rest is history...

Having said that, the grim reality is that while trying to predict the future, we all show some symptoms of either a;

- Status quo or recent history bias ["*I have seen the future and it is very much like the present, only longer*." --Kehlog Albran, The Profit]; or an
- Overconfidence bias [*I-know-better-than-you*]

Ironically, the primary factor leading to overconfidence is *knowledge* (education or industry experience) which leads to an analyst or economist believing that their forecasts are based on skill (*illusion of knowledge*), and when the forecasts are inaccurate, the blame is usually placed on some outside factors. On the other hand, if the forecast happens to be correct - even if that is due to the impact of factors not considered in forecasting – the usual response is not that, "Gee, I have been lucky!" but "See, I-told-you-so".

1. Our call on oil prices: Approach

Our approach to oil price predictions involves a review of oil price drivers and analyst consensus

With this backdrop, and with a "hidden" hope to be in the position of saying "See, I-told-you-so" by the time we re-write this or similar reports in 2010, we bring you our call on oil prices in 2009 and beyond.

Rather than developing a complex econometric model to account for a myriad of factors, we take an approach of reviewing the general drivers/ indicators impacting oil prices, and checking on "What-other-knowledgeable-institutions-are-saying". Post this, we present findings of a survey conducted by Markaz among investment professionals and present you with a concept of Equilibrium Oil Price and conclude with our final take on where oil prices are likely to be this year.

[5] Source: The Economist, March 6-12, 1999

2. General Indicators/ Drivers

A weak global economic outlook for 2009; with most of the developed world heading into recessions while demand in growing economies like China and India begins to slacken, does not bode well for oil prices.

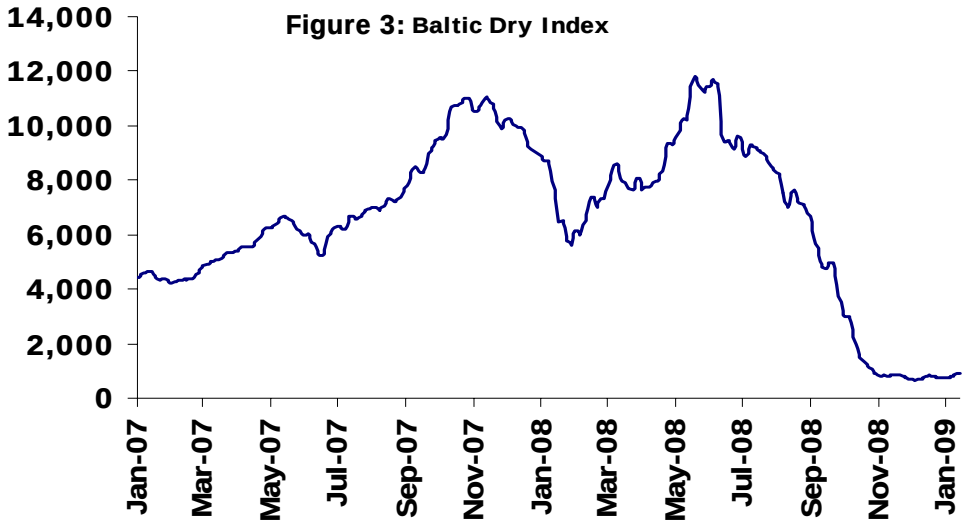
OPEC approved three production cuts in the fourth quarter of 2008; the latest was agreed upon in mid-December and calls for reducing production by 2.2 million bbl/day. This brings the total amount of pledged reductions to 4.2 million bbl/day since September 2008, taking nearly 5% of world supply off the market. These production cuts come as weak demand points to increased stockpiles in oil consuming nations, which exacerbate oil prices declines.

OPEC continues to cut production quotas in order to boost oil prices

The Baltic Dry Index (BDI) is a near-perfect leading indicator of the global economy's health. Unlike stock and bond markets, the BDI "is totally devoid of speculative content," says Howard Simons, an economist and columnist at TheStreet.com, "People don't book freighters unless they have cargo to move".

BDI reached a record high of 11,793 points on 21st May 2008 (Figure 3), and half a year later, on 5 December 2008 the index had dropped by 94%, to 663 points. As of 13th January, 2009, BDI closed at 911 points. These low rates move dangerously close to the combined operating costs of vessels, fuel, and crews.

Figure 3: Baltic Dry Index



Source: Bloomberg

Slackening demand is resulting in signs that investments in oil recovery infrastructure is slowing

As another indicator of a worsening demand scenario, Toyota is suspending production at all 12 of its Japan plants for 11 days over February and March, a stoppage of unprecedented scale for the nation's top automaker as it grapples with shrinking global demand. Just to put things in perspective, the last time Toyota halted production at all its Japan plants was in August 1993, when demand plunged because of a rising yen, and that was for only one day, according to the company.

A couple of silver linings for oil prices in the near future, however, are also evident. There are indications that investments in global oil recovery infrastructure may be slowing, if not declining already. For example,

- It is estimated that worldwide E&P (Exploration & Production) spending will decline 12% in 2009, according to a survey of 357 companies by analysts James Crandell and James West at Barclays Capital. Total Spending is seen at $ 400 billion compared with $ 454 billion in 2008[6]

[6] Source: Upstream – The international Oil & Gas Newspaper (January 2, 2009)

- Of the 69 companies surveyed with E&P Budget above $ 1 billion, only 17 plans to maintain or increase budget, while 52 are preparing to cut.
- The biggest budget increases are to be found among Middle Eastern and Asian state controlled companies (*Excluding Saudi Aramco and Petroleum Development Oman (PDO, which are expected to cut budget by 15% and 5%, respectively)*. At the other end of the scale, North American independents, Russian Lukoil, and Nigerian National Petroleum Corporation are cutting the budget.
- On Oct. 31 International Oil Daily reported that Saudi Arabia and Kuwait postponed plans to boost production capacity at the Khafji oil field by five years.
- Saudi Aramco declared that it may consider renegotiating terms for the $ 15 billion Manifa field development.
- Saudi Aramco and ConocoPhillips have postponed the bidding process for construction of the planned 400,000 BPD Yanbu export refinery citing uncertainties in the financial and contracting markets.

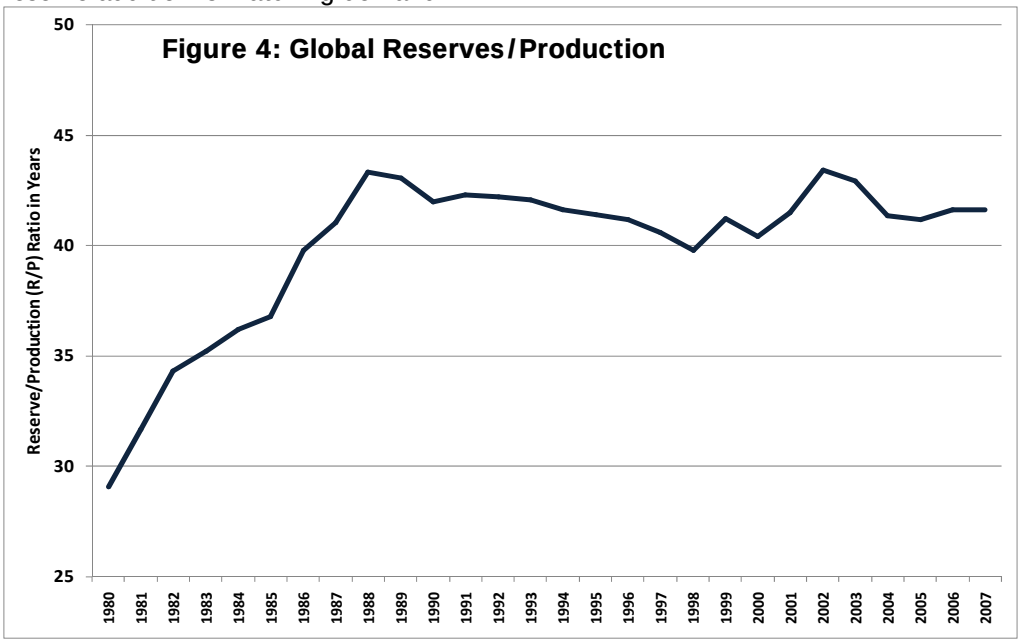
There is a general consensus among consumer nations that oil supply security is higher for oil at $75/bbl rather than oil at $40/bbl. In addition, some consuming countries are now cutting gasoline prices, which is likely to have a positive impact on oil demand. Finally, as volatility in equity and other markets remain high and credit markets ease, one can also expect speculative money to re-enter oil markets.

In the longer run, most analysts and energy agencies expect much higher oil prices resulting from supply constraints

In the longer run, most analyst and energy agencies expect much higher oil prices resulting from supply constraints against steady demand. For example, Fatih Birol, IEA Chief Economist, recently told Arabian Oil & Gas magazine that "[the] era of cheap oil is over" and "*Even if oil demand did not rise at all between now and 2030 -which is quite impossible - we would need to increase oil production capacity by around 45 million b/d. That is a substantial challenge*". Now, that is equivalent to the production of about 5 new Saudi Arabia's in the next 20-25 years!

A counter-view is proposed by another school of thought, citing that Global R/P (declared reserves to current production) ratio has remained consistently in the range of 40-45 years since 1986 onwards (Figure 4), and thus implying that global reserve addition is matching demand.

Spare capacity as a percentage of total production has been declining since the 1980's

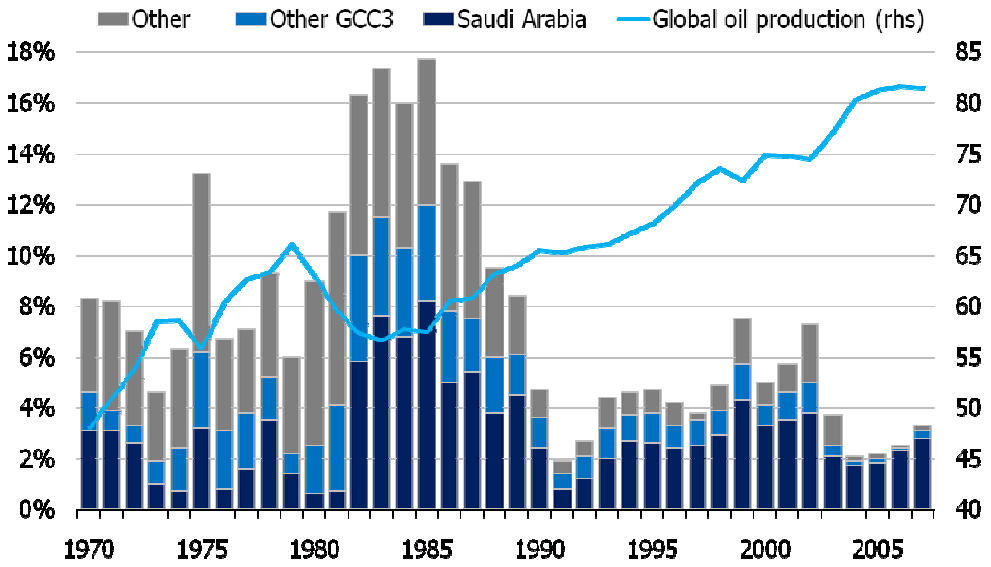


Source: BP Statistical view of World Energy, 2008

Another argument put forward is that demand has never been enough to exhaust "spare capacity"[7], and though spare capacity as a percentage of total production has come down, it has never reached the production at 100% capacity. While there is definitely some merit in this argument, one must acknowledge that spare capacity as a percentage of total production has been declining since the 1980s and has been extremely low in the recent past[8]. Furthermore, spare capacity is almost entirely concentrated in the hands of one producing country: Saudi Arabia (Figure 5). Thus, in the event of economies improving and demand increasing, coupled with lower investments in long lead time projects, spare capacity could be a thing of the past – sooner rather than later.

Spare capacity is almost entirely concentrated in the hands of Saudi Arabia

Figure 5: Spare Capacity as % of Global Production



Source: BP Statistical view of World Energy, 2008

A rapid drop in oil prices would not stall existing projects

Notwithstanding the accuracy[9] of reserves data and current excess spare capacity[10], even the proponents of this theory concede that future oil will be coming from more difficult areas (e.g. ultra deep water discovery by Petrobras, Brazil) and would be thus more difficult and - cost intensive - to recover.

It is important to note that it takes about 3-4 years for typical oil recovery infrastructure projects to be completed from the initial stages. The lead time in Middle Eastern countries is usually even higher (4-6 years) due to project execution delays. Hence, a rapid drop in oil prices would not cause all existing projects – especially the state oil companies' projects - to stall mid-way. However, if the outlook is for sustained lower prices, it could impact new, planned projects or projects at very early stages.

This would invariably impact oil prices in the medium to long run and could mean oil prices sustaining at least above the cost of marginal production (*estimated by Deutsche Bank to be $80/bbl range currently*), else there is no incentive for this marginal production to come on-stream.

[7] Oil production capacity which can be put to use within a relatively short period of time, say 30 days

[8] i.e. before the demand went down due to global economic downturn of 2008 and production cut was needed to balance the markets

[9] The proponents of peak oil believe that since the system of country production quotas was introduced in the 1980s, partly based on reserves levels, there have been dramatic reserves upgrades among OPEC producers

[10] Though, at beginning of 2009, Jefferies & Co estimated (December 22, 2008) that spare capacity as % of global demand would have gone up substantially to approx 8% from 0.9% just 5 months ago, thanks to production cuts by OPEC and other producers in the wake of weakening global demand

3. Compilation of Price Expectations for 2009

Energy analysts and various international agencies expect oil prices to rebound to an average of $52/bbl in 2009 (Table 5), with a possible high of $65-$70 should additional OPEC production cuts materialize and political tensions in the region intensify.

Energy analysts and various international agencies expect oil prices to rebound to an average of $52/bbl in 2009

Table 5: Crude Oil Price Expectations

	2009
International Monetary Fund*	68.0
Institute of International Finance	55.6
Merrill Lynch	50.0
Goldman Sachs**	45.0
Deutsche Bank	40.0
JP Morgan**	43.0
International Energy Agency	63.5
Energy Information Administration**	51.2
Average	**52.0**

*Simple average of prices of U.K. Brent, Dubai, and West Texas Intermediate (WTI)
** WTI
Source: IMF World Economic Outlook, IIF, EIA, IEA, Bloomberg

In addition, a recent survey of 33 analysts by Bloomberg indicates that oil futures may rebound from their worst year to average $60 a barrel in 2009, representing a more than 50% gain from the year end closing price of $38/bbl.

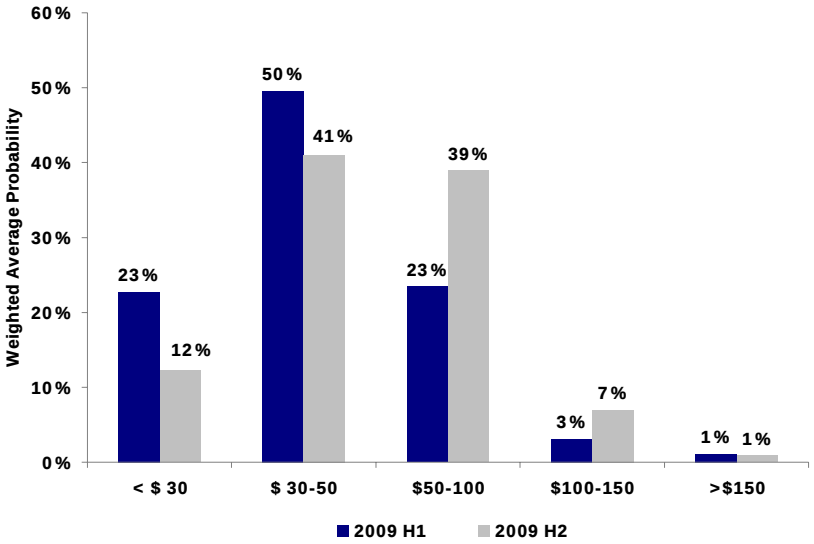
OPEC officials have also voiced an opinion on reasonable oil prices of $ 70-75/bbl.

4. Markaz Survey Findings: Oil Prices Scenario

At Markaz, we conducted a survey to gain an understanding of oil price expectations. We had 58 respondents, mostly investment professionals, spanning the GCC, UK and USA. The professionals surveyed work in Investment Banking, Private Equity, Equity/Macro Research, and Commercial Banking in addition to other fields in the financial sector. The survey requested that certain price brackets be given probabilities of occurring in H1/H2 2009, 2010, and 2011.

The overall outlook for the next three years is cautious, but not overly pessimistic. The majority of those surveyed believe that oil prices will remain in the $50 - $100/bbl range or higher until 2011; except in the first half of 2009, where surveyed respondents believe that there is a 50% chance of oil price remaining in $30-50 range, and also a significant 23% probability of oil price even falling below $30 (Figure 6).

Figure 6: Oil Prices: Probabilistic Scenarios for 2009

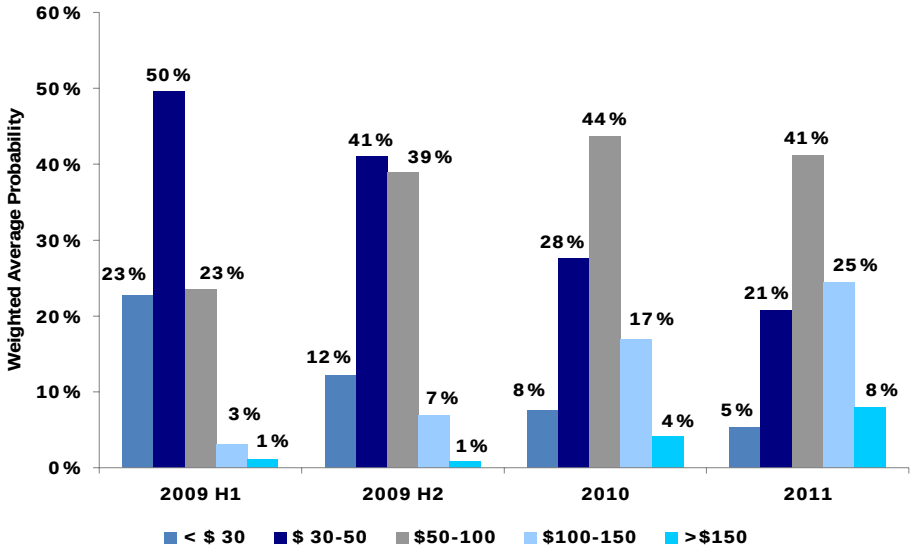


The second half of 2009 is more optimistic than the first half in terms of oil price predictions

Source: Markaz Research

The outlook is more optimistic for the second half of 2009, where the respondents put a cumulative probability of 47% for oil prices in $50-$100 range or higher. On the other hand, the respondents believe that there is only a 12% chance of price falling below $30 range (compared to a 23% weighted average probability for 2009 H1). Going forward, the respondents seem more optimistic on higher oil prices - on assumptions of global economies and demand recovering, supply constraints continuation and lack of new investment - and believe that there is a 33% probability of average oil prices being higher than $100 during 2011.

Figure 7: Oil Prices: Probabilistic Scenarios for 2009-2011



Oil prices are expected to remain subdued at least through the first half of 2009 regardless of supply cuts

Source: Markaz Research

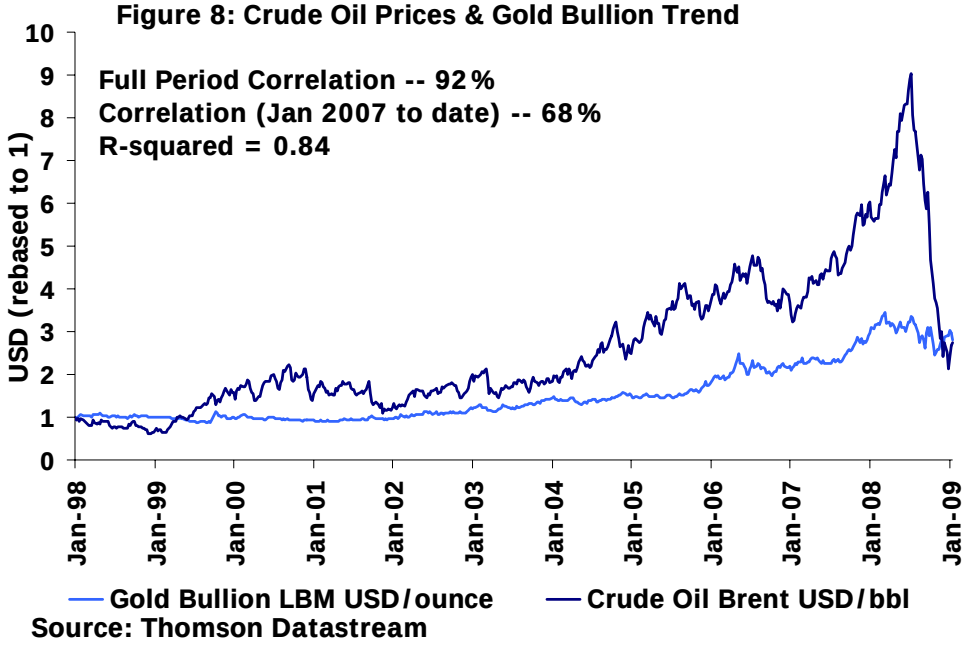
By all indications, oil prices are expected to remain subdued at least through the first half of 2009, regardless of OPEC production cuts since, in our view, the issue is not one of supply, but demand and consequently higher inventory built up in OECD countries. We would expect oil prices to rebound when the U.S. economy shows signs of improvement in addition to China and India showing signs that they will be able to sustain their growth despite the global downturn.

5. The Oil/Gold Relationship

Although crude oil and gold prices can be seen to move in opposite directions when viewed on a short-term, historical data shows that the crude oil/gold relationship is in fact exceedingly strong; price data from January 1998 to date show a correlation of a whopping 92%, decreasing to 68% when viewed from January 2007 to date (Figure 8) on account of increased volatility in oil prices which were not coupled with spikes in gold prices.

The gold/oil relationship has been strong on a historical basis

Figure 8: Crude Oil Prices & Gold Bullion Trend



Source: Thomson Datastream

Gold is seen as a safe haven for investors; when inflation increases, or the dollar begins to lose value, or equity markets start going haywire, investors bid up the price of gold. As equity markets around the world tanked in 2008, gold gained 6%.

According to the average historical gold/oil factor, oil prices should be at $70/bbl

Upon studying the historical relationship between the two assets, an average historical factor (gold/oil) of 0.68 can be viewed (Table 6), whereas the factor has jumped to 1.12 in recent days, with an oil price of around $44/bbl for current gold prices of approximately $857.25/ounce. However, if we were to apply the historical average factor, oil prices should be at $70.17/bbl, indicating that we are currently experiencing a downward speculative shock in oil markets.

We also ran a straightforward regression analysis on the data, which returned an R-squared of 0.84. Using this data to forecast oil prices at a given price for gold, the result is that with gold prices at their current levels, crude oil should be at $94.51/bbl.

Table 6: Oil Price Expectations

Methodology	Gold/Oil Factor	Current Gold Price (USD/ounce)	Oil Price (USD/bbl)
Based on Current Factor	1.12	857.25	42.64
Based on Historical Average Factor	0.68	857.25	70.17
Based on Regression Analysis	0.84*	857.25	94.51

* R-squared

Source: Markaz Research, Thomson Datastream

6. Equilibrium Oil Price

Equilibrium oil price is a concept which has been fiercely and endlessly debated among economists, academics, industry experts, and oil analysts alike. The theory of equilibrium oil price calls for the existence of a certain price point at which supply and demand intersect; however, given that the oil market is dynamic rather than static in nature, with a myriad of factors constantly influencing supply and demand (or rather the *expectations* of *future* supply and demand), it follows that equilibrium oil price would also be of a dynamic nature, perpetually in flux.

Another factor which works against the notion of equilibrium oil price is the existence of OPEC, a bloc which controls roughly 78% of the world's oil reserves and 35% of world oil production[11], affording it considerable influence over oil prices, thereby negating the concept of equilibrium oil price, which would depend on purely supply and demand factors of a free market.

According to Deutsche Bank Global Markets Research, there is a quantifiable relationship between finding and development costs ("F&D costs") and oil prices. Their research has found that since 1980, oil price has equaled, roughly, a multiplier of 2.6x F&D costs plus a constant of USD 7.5. Historical data has also shown that F&D costs have increased 20% p.a. over the past two years (in real terms), indicating that F&D costs could equal USD 25/bbl in 2009. By applying the formula, assuming a 2009 F&D cost of USD 25/bbl, we arrive an oil price of USD 72.5/bbl. DB Global Markets Research has also observed a multiplier of 3-4x in recent data, indicating that oil could likely be in the range of USD 82.5 – USD 107.5/bbl in 2009[12].

7. How high can oil prices go?

In order to assess where crude oil prices should be, it is imperative to understand where they *could* be; as in what are the extreme highs and lows which, if sustained, would result in a shock to the markets. By taking into account several economic and financial indicators, such as shares of S&P 500, US disposable income, and currency risk, Deutsche Bank has ascertained that, based on these fundamentals, crude oil could reach as high as USD 128/bbl and remain at a fair value (Table 7), whereas anything above that level would constitute a speculative premium resulting from supply or geopolitical shocks.

Oil prices could go as high as $128/bbl and still be considered as fair value

Table 7: Crude Oil Price - High Extremes

Indicator	Oil Price (USD)
In real terms (PPI)	94
Analyst forecasting error	116
In real terms (CPI)	118
Versus the US Dollar	120
Futures market forecasting error	130
Relative to per capita income	134
As a percent of US disposable income	145
As a share of the S&P 500	145
As a percent of global GDP	150
Average	**128**

Source: DB Global Markets Research, Deutsche Bank, Oct 2008

[11] OPEC
[12] Deutsche Bank, DB Global Markets Research, October 2008

8. How low can oil prices go?

Conversely, there is also a lower limit at which, based on a series of fundamentals, oil prices can still be representative of fair value. DB Global Markets Research estimates this price to be USD 61/bbl (Table 8), whereby anything below that level constitutes a speculative discount associated with demand side shocks such as the current global financial crisis and the expected global economic outlook for 2009.

Table 8: Crude Oil Price - Low Extremes

Indicator	Oil Price (USD)
Budget balance	55-95
Marginal cost of production	80
Based on futures forecasting error	80
As a share of S&P 500	60-90
As a percent of US disposable income	60-85
As a percent of global GDP	40-75
Relative to G7 per capital income	45
Versus US dollar	30-60
In real terms (PPI)	35
Average	**61**

Source: DB Global Markets Research, Deutsche Bank, Oct 2008

9. Our Call on Oil Prices for 2009

In view of the above analysis, our view on oil prices is based on our fundamental belief that oil demand is likely to outstrip the supply infrastructure additions (irrespective of the amount of reserves in the ground) in the medium to long term. The slowdown in investment due to a lower price scenario, coupled with the credit crisis, could result in a supply crunch in the not-so-distant future.

We forecast oil prices to average $35 - $60/bbl in 1H09, and $45 - $75/bbl in 2H09

We believe that in the short term, the current spare capacity coupled with a decline in oil demand, has depressed prices, but is unlikely to remain so for much longer. Retail prices of gasoline/diesel and other products have started coming down, further reducing the impact of lower demand.

Some oil producing countries – though not all, we quickly add - are in a much better position this time around and have accumulated financial strength (due to high oil prices of past 5 years) to withstand a more aggressive stance on production cuts and further reduce the supply to bring oil markets in balance.

Additionally, we also believe that the uncertainties and high volatility of equity markets would push many more investors in the speculative investment vehicles, which missed the previous opportunity to cash in the bull run of 2008.

We also observe that currently there is a sharp “contango” [Future prices higher than spot prices] in oil prices, which also indicate market expectation of higher prices than what we are currently seeing. Many traders are rushing to take advantage of the sharp correction by using crude tankers as a medium to store oil on the sea, rather than transport. With roughly 500 VLCCs in the world fleet, it is estimated that about 4-5% of the VLCC fleet is being used as storage with expectations of a few more VLCCs being chartered for storage over the next few weeks. With Spot Crude trading around $40 and the NYMEX 6-month futures price of $53, a trader can take delivery of crude today, sit on it for 6 months and potentially make a 20+% return[13].

[13] Tanker Storage Questions Answered, Credit Suisse, 9th January 2009

Lastly, we believe that the gold/oil ratio may also be indicating an anomaly currently and pointing to "cheap" oil, especially in a historically low interest rate environment.

The overall consensus seems to be that crude oil prices will be in the range of $52 - $75 in 2009 (Table 9)

Overall consensus is that crude oil will be in the range of $52-$75 per bbl in 2009

Table 9: Summary of Oil Price Expectations for 2009	
Method	**Oil Price (USD/bbl)**
Average Analysts Expectation	52
Bloomberg Survey	60
Markaz Survey (average)	60
Historical Average Gold/Oil Factor	70
Gold/Oil Regression Analysis	95
Deutsche Bank Equilibrium Oil	72.5
Source: Markaz Research	

Thus, at the expense of being considered as having access to a "crystal ball", we believe that oil prices for 2009 would average out as below:

- H1: $ 35 - $60 / bbl (Average: $45/bbl)
- H2: $ 45 - $75 / bbl (Average: $60/bbl)

We remain more bullish on oil prices going forward and expect much higher prices (above $ 100/ bbl) in 2010 and 2011.

C. Oil Prices and GCC Stock Markets

In this section we explore the relationship between crude oil prices and GCC stock markets, in addition to trying to ascertain the degree of strength those relationships have. We found that full period correlation was highest in Oman, at 96% (Table 10), only declining marginally to 95% when taken from January 2007 to date. Conversely, the lowest correlation was found between oil prices and Dubai Financial Market, at 52% for the full historical period, increasing to 75% when taken from January 2007 to date. We ran the correlation on the data from January 2007 to date in order to remove the effect any speculative bump of 2005/2006 would produce in the data.

Full period correlation in Oman was the highest among the GCC countries, at 96%

It is important to note that correlation does not imply causation; the only purpose of our correlation is to determine, a) *whether* a directional relationship does exist between the markets and oil prices, and b) how strong that relationship *may be*. We are not attempting to prove that oil prices, in any way, influence the direction of stock markets or vice versa.

Table 10: Summary of Correlations (%)

Country	Full Period	January 2007 to date
Saudi Arabia	69	69
Kuwait	94	93
Qatar	83	96
Dubai	52	75
Abu Dhabi	77	93
Bahrain	87	89
Oman	96	95

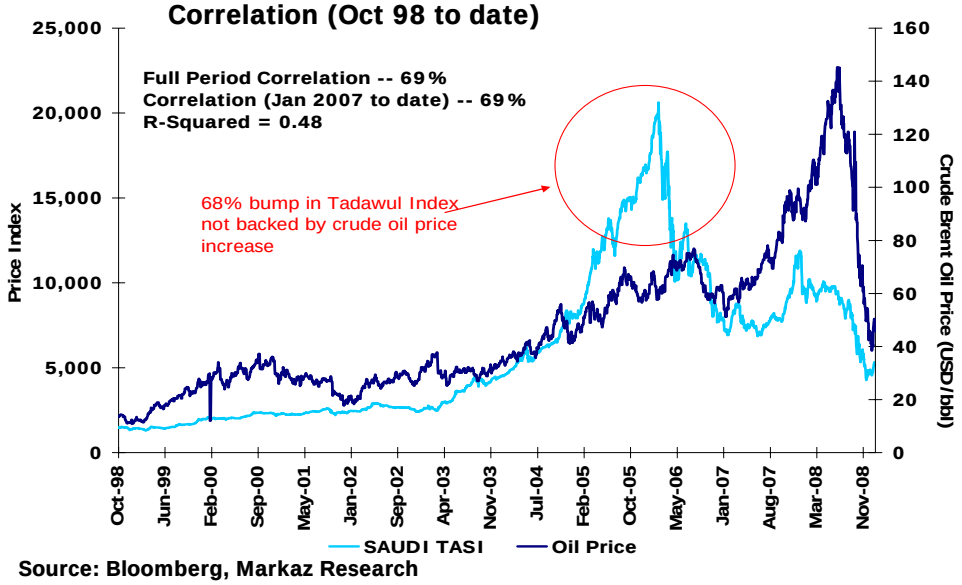
Source: Markaz Research

1. Saudi Arabia

Full period correlation in Saudi Arabia is 69%

For the period October 1998 to date, the correlation between the Saudi Tadawul All Share Index and Brent crude oil is 69%. As is illustrated in the below graph (Figure 9), the Tadawul surged 68% between March 2005 and March 2006 (peaking at 20,635 in February 2006). However, this surge was not backed by a spike in crude oil prices, as these only increased 17% in the same period. In order to obtain a more recent feel for the relationship between the Tadawul and oil price, we ran the correlation from January 2007 to date, which resulted in a correlation of 69% as well.

Figure 9: Saudi Tadawul Index & Crude Oil Price Correlation (Oct 98 to date)



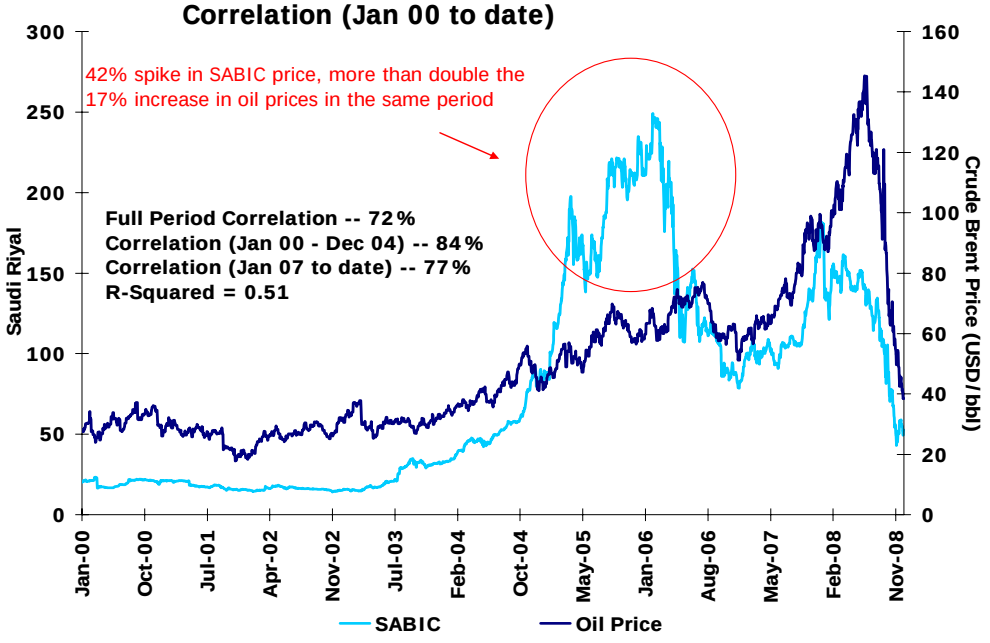
Source: Bloomberg, Markaz Research

The market boom of 2005 was the result of speculative excesses which were not backed by realistic factors and, as such, constitute an anomaly in our study. In order to explore this irregularity, we looked at the relationship between Sabic (which is the largest listed stock in terms of market capitalization) and oil prices (Figure 10).

SABIC and oil prices have a full period correlation of 72%

From January 2000 to date, the correlation stands at 72%, i.e. higher than that of the index, which is understandable given that Sabic is a petro-centric company. However, this figure takes into account the 42% spike in Sabic's stock from March 2005 – March 2006, which is more than double the 17% increase in crude oil prices in the same period. Prior to 2005, the relationship between the stock and oil prices was much stronger; with the correlation from January 2000 – December 2004 standing at a substantial 84%.

Figure 10: SABIC Stock & Crude Oil Price Correlation (Jan 00 to date)



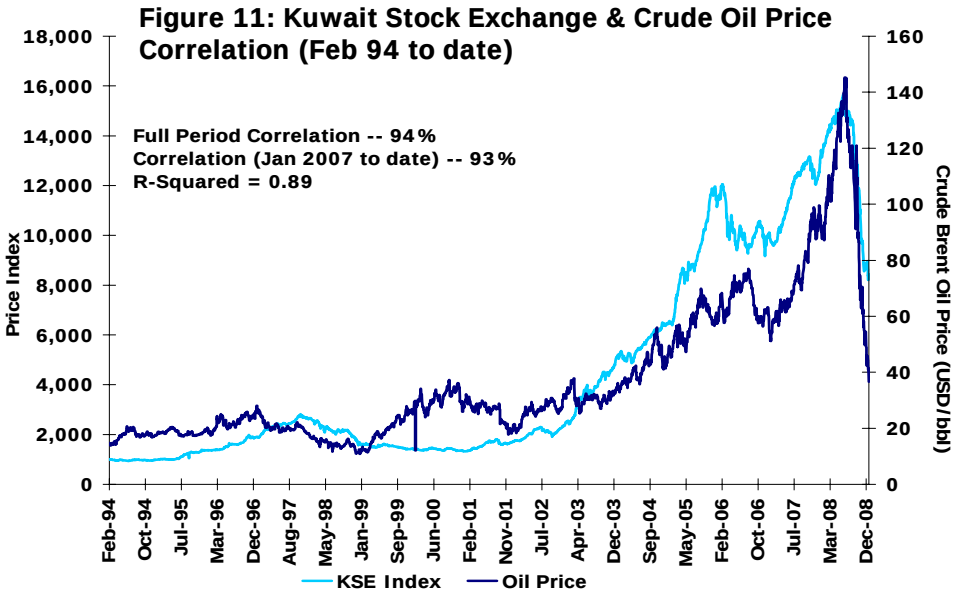
Source: Bloomberg, Markaz Research

2. Kuwait

The Kuwait Stock Exchange (KSE) and crude oil prices have a clearly inseparable relationship (Figure 11); the correlation between the two is at a whopping 94% in the full period (February 94 to date), and declines negligibly to 93% if we only consider January 2007 to date data, with an R-squared of 0.89. While not implying a causative relationship, this clearly indicates that the relationship between crude oil prices and the KSE is an extremely strong one, and is in fact, the second highest correlation found among the GCC markets (after Oman).

KSE and oil prices have a high full period correlation of 94%

The KSE did not experience an aggressive speculative bump such as that which was seen in the Saudi market in 2005, which reinforces the strength of the KSE/oil price relationship as they both experienced a steady increase from H1 2005 to mid-2008 including a nearly identical dip towards the end of 2006 and 2008.

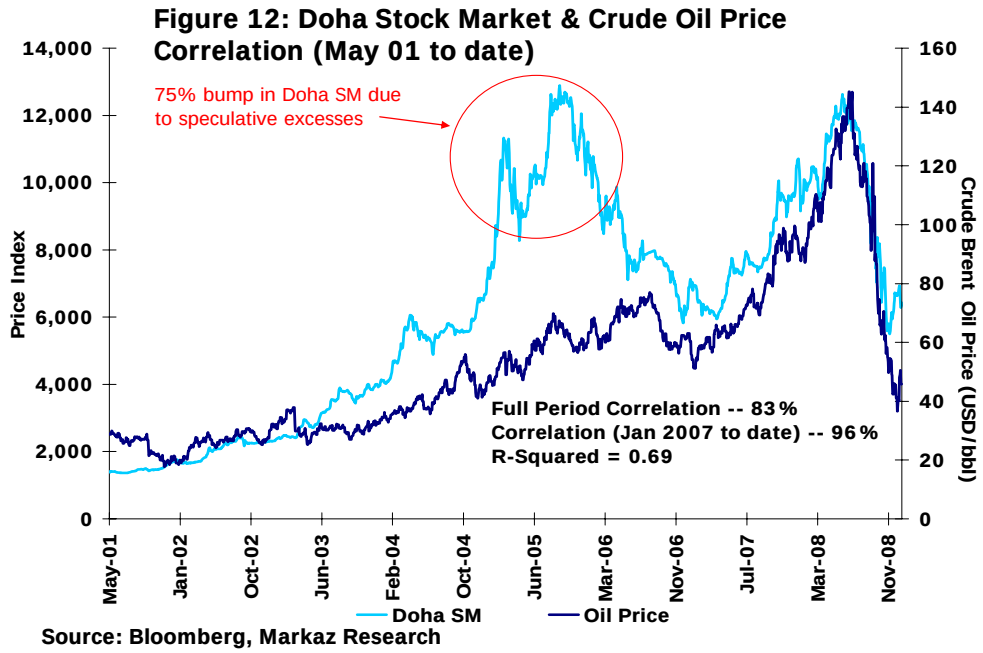


Source: Bloomberg, Markaz Research

3. Qatar

A substantial speculative bump in the Qatar market reduces full period correlation to 83%

The Doha Stock Market (DSM) has a moderately strong relationship with crude oil prices, when taken in context of all the GCC markets; the historical correlation is 83% (Figure 12). As in the case of the Saudi Index, the DSM gained 75% between February 2005 and its peak in September of that same year, while oil gained 41% in the same eight month period. This spike was the result of speculation among market investors and was not backed by fundamental factors, thereby, making the inevitable correction (a 55% drop from peak to December 2006) all the more painful and highlighting a substantial volatility in the Qatar market. From January 2007 to date, the correlation jumps to 96%, showing that the relationship between the DSM and oil prices strengthened considerably in that period. The R-Squared comes in at 0.69, due to the spike in 2005.



Source: Bloomberg, Markaz Research

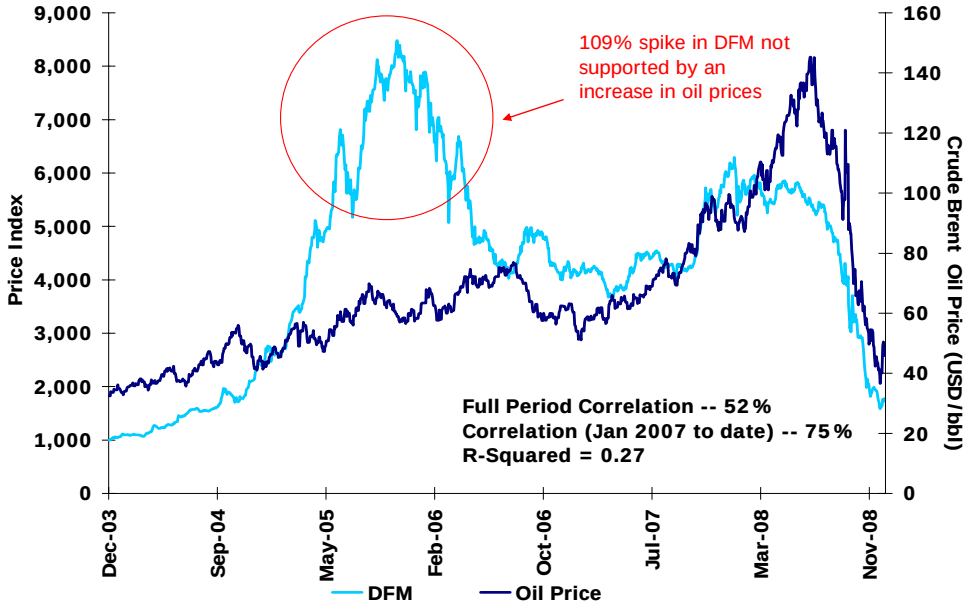
4. Dubai

When compared to other GCC exchanges, the Dubai Financial Market (DFM) has a somewhat weak relationship with crude oil prices; returning a correlation of just 52% over the past five years (Figure 13), though this figure takes into account the 109% surge in the index from April – November 2005 (hitting a peak of 8,484 points). The comparatively lower correlation can be attributed to the dominance of Real Estate in the Dubai market versus Energy.

A low historical period and heavy dominance of Real Estate provides for a low correlation between Dubai market and oil prices

Like other GCC countries, the market surge in Dubai was not accompanied by a parallel spike in oil prices, which only increased by 6% during that same period. More recently, the relationship between the DFM and oil prices has strengthened somewhat; a correlation of 75% can be found from January 2007 to date. However, the R-Squared is exceedingly low, at just 0.27.

Figure 13: Dubai Financial Market & Crude Oil Price Correlation (Dec 03 to date)



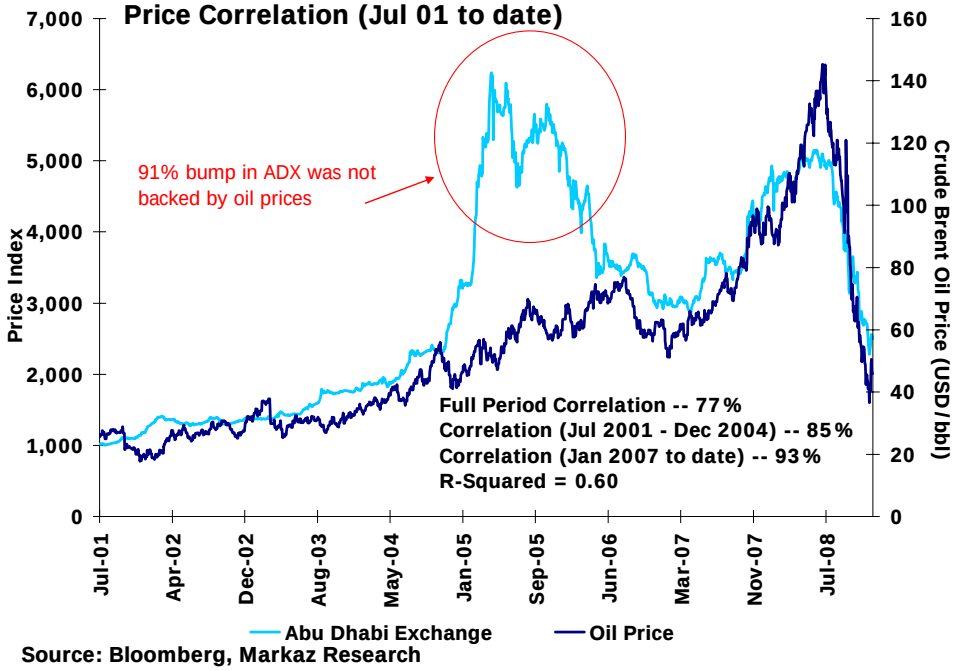
Source: Bloomberg, Markaz Research

5. Abu Dhabi

Full period correlation between ADX and oil prices at 77% but increases to 93% from Jan 2007 to date

The relationship between the Abu Dhabi Stock Exchange (ADX) and crude oil prices has, historically, been stronger than that of the DFM due to the dominance of Real Estate firms in the latter. The full period correlation between the two (from July 2001 to date) stands at 77% (Figure 14); although this takes into account the GCC-wide stock market boom of 2005, whereby the ADX increased by 91% between December 2004 and November 2005; almost triple the 36% increase in oil prices in the same period. The ADX/oil price correlation is higher, at 85%, before the 2005 boom (July 2001 to December 2004), and strengthens considerably between January 2007 and January 2009, where the correlation is 93%.

Figure 14: Abu Dhabi Stock Exchange & Crude Oil Price Correlation (Jul 01 to date)



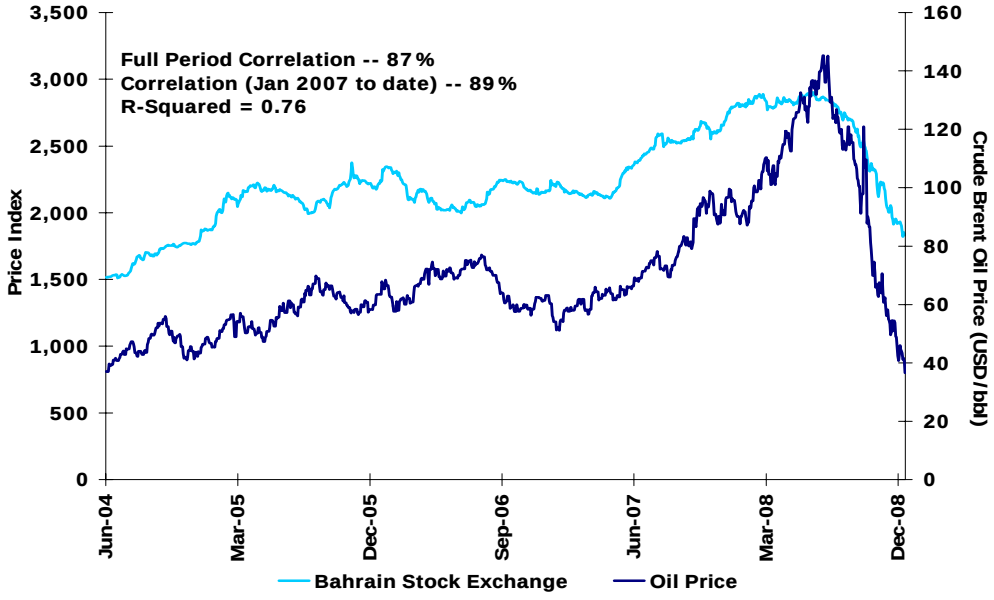
Source: Bloomberg, Markaz Research

6. Bahrain

The correlation between the Bahrain Stock Exchange (BAX) and crude oil prices is stable when viewed through both time frames. The historical correlation (Jun 04 to date) is 87%, while from January 2007 to date, the correlation increases slightly to 89% (Figure 15). The regression analysis also returned an R-Squared of 0.76, indicating an adequate fit to the model. We find the relative strength of the BAX/oil price relationship somewhat surprising given that Bahrain is not a purely oil-based economy. The absence of a bump in the market is noticeable in the below graph, indicating the Bahrain stock exchange is not particularly susceptible to speculative forces.

The relationship between the BAX and oil prices is relatively strong at 87%

Figure 15: Bahrain Stock Exchange & Crude Oil Price Correlation (Jun 04 to date)



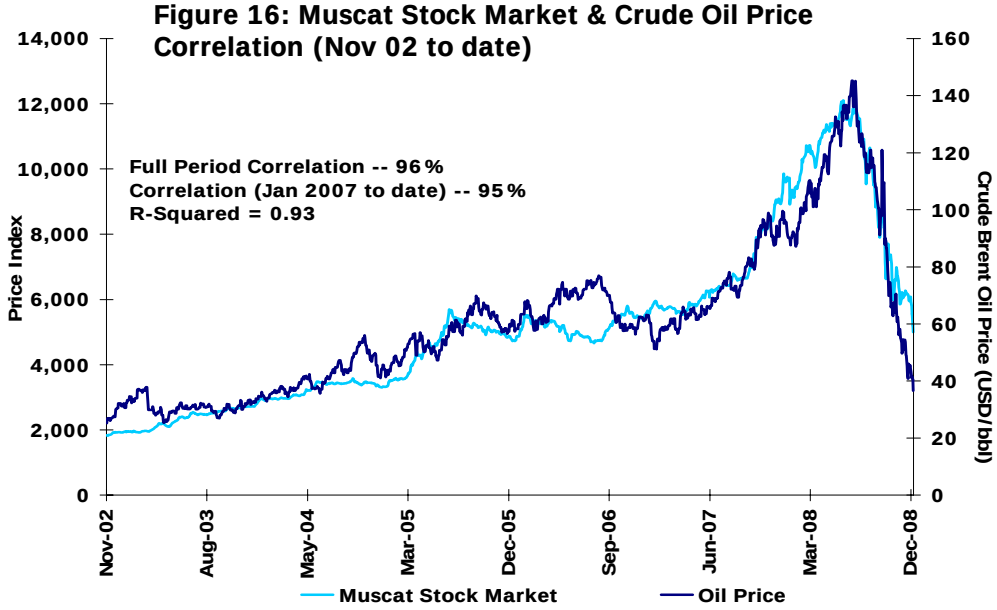
Source: Bloomberg, Markaz Research

7. Oman

The correlation between the Muscat Stock Market (MSM) and oil prices is the highest found among GCC exchanges, at a whopping 96% for the full period (Nov 2002 to date), with a negligible decrease to 95% when taken from January 2007 to date (Figure 16). The regression analysis also returned an R-Squared of 0.93, indicating a near perfect fit for the model. Oman is also missing a 2005 boom market bump, indicating that the Omani market may be less susceptible to speculative excesses than its neighbors.

The MSM and oil prices have the highest correlation among GCC markets at 96% for the full period

Figure 16: Muscat Stock Market & Crude Oil Price Correlation (Nov 02 to date)



Source: Bloomberg, Markaz Research

Conclusion

In summary, given the dependence of GCC economies on oil revenues, it should come as no surprise that oil prices should have a relationship with movements in the stock markets. The strongest relationship we've discovered is between Oman's Muscat SM and oil, with a full period correlation of 96%; followed by the Kuwait Stock Exchange, with a full period correlation of 94% with oil prices. We are not implying that oil prices have caused movements in the stock exchange, but that a directional relationship of positive correlation does exist.

As such, an expectation of future oil price trends may be helpful in ascertaining which direction stock markets may move in. we foresee subdued oil prices in the next year, giving us a cautious view on GCC stock market performance for 2009.

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- Arab National Bank (July-08)
- Saudi Telecom Co. (Jun-08)
- SAFCO (Jun-08)
- Banque Saudi Fransi (Jun-08)
- Riyad Bank (Jun-08)
- Samba Financial Group (May-08)
- Sabic (May-08)

Research Coverage Market
Cap as % of total Market cap 59%

UAE

- Gulf Cement Company (Jan-09)
- Abu Dhabi National Hotels (Dec-08)
- Dubai Investments (Dec-08)
- Arabtec Holding (Dec-08)
- Air Arabia (Nov-08)
- Union Properties (Nov-08)
- Dubai Islamic bank (Oct-08)
- Aldar Properties (Sept-08)
- Union National Bank (Aug-08)
- Dubai Financial Market (July-08)
- Emaar Properties (July-08)
- Dana Gas (July-08)
- FGB (July-08)
- DP World (July-08)
- ADCB (Jun-08)
- Etisalat (Jun-08)
- NBAD (May-08)

Research Coverage Market
Cap as % of total Market cap 46%

Qatar

- Qatar Fuel Co. (Dec-08)
- Qatar Shipping Co (Dec-08)
- Barwa Real Estate Co. (Nov-08)
- Qatar Int'l Islamic bank (Nov-08)
- Qatar Insurance Co. (Nov-08)
- Qatar Telecom (Oct-08)
- Qatar Gas Transport Co. (Oct-08)
- Doha Bank (Aug-08)
- Qatar National Bank (Aug-08)
- QEWC (July-08)
- QISB (July-08)
- Masraf Al-Rayan (Jun-08)
- Commercial Bank of Qatar (Jun-08)
- Industries Qatar (May-08)

Research Coverage Market
Cap as % of total Market cap 93%

Bahrain

- Gulf Finance House (Oct-08)
- Esterad Investment Company (Aug-08)
- Bahrain Islamic Bank (Aug-08)
- Ithmaar Bank (July-08)
- Tameer (July-08)
- Batelco (July-08)

Research Coverage Market
Cap as % of total Market cap 29%

Egypt

- Commercial Int'l Bank (Oct-08)
- Orascom Telecom (Sep-08)
- Mobinil (Sep-08)
- Telecom Egypt (Aug-08)
- EFG-Hermes (Jun-08)

Research Coverage Market
Cap as % of total Market cap 45%

Oman

- Galfar Engineering & Cont. (Nov-08)
- Oman Telecommunications (Sept-08)
- Bank Muscat(Sept-08)
- Oman cement (Sept-08)
- Raysut Cement Company (Aug-08)
- National Bank of Oman (Aug-08)
- OIB (July-08)

Research Coverage Market
Cap as % of total Market cap 69%

Jordan

- Arab Bank (Sept-08)
- Cairo Amman Bank (Oct-08)

Research Coverage Market
Cap as % of total Market cap 39%

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