

Updating Fiscal Break-Even Oil Prices: As Oil Tumbles, What are the Risks for Exporters?

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SUMMARY

- Public spending has risen sharply since 2009 in several key oil producers that depend on oil export revenue to balance their budgets. As a result, governments in oil exporting nations accounting for 45 percent of global oil supply will require an oil price in excess of \$90 per barrel (bbl) to finance 2015 budget requirements. In 2014, the share was just 25 percent. In 2010, the share was less than 15 percent.
- The recent decline in global oil prices below \$90/bbl, if it persists, will expose weakening fiscal outlooks in OPEC's highest spending members and Russia.
- Deteriorating fiscal outlooks will force oil exporters into a difficult position: reduce social spending, risking short-term political instability, or maintain social spending in favor of cuts to upstream capex, eroding long-term growth and risking longer-term economic and social instability. In the short term, we expect deficits to be financed by accumulated savings and possible increases in debt. However, only GCC countries, such as Saudi Arabia, are able to do this for more than a few quarters.
- This dynamic could pose broader market risks as major exporters become more economically fragile, adding uncertainty to both short- and long-term oil supplies. This fiscal environment will put further pressure on national oil companies, many of which have already been forced to turn to the debt markets to finance capex.
- An OPEC supply cut appears unlikely given current market conditions, which would mute the effects of even a moderate cut, and the fact that most members will turn to Saudi Arabia. Riyadh appears willing to test the effect of sub-\$90 Brent on high-cost U.S. supplies, a strategy it is uniquely positioned to afford. A drop in Brent closer to \$70/bbl before the November OPEC meeting could change this calculus.

INTRODUCTION

As of earlier this week, global crude benchmarks have tumbled by a stunning \$30 per barrel (bbl) from their mid-summer highs of \$115/bbl, and are approaching a psychological threshold at \$80/bbl. The reasons are myriad, but a handful of core drivers stand out: (1) the return to the market of Libyan supplies, which recently surpassed 1 million barrels per day (mbd) after spending periods of the past three years far below this level; (2) the continued upward march of liquids production in the United States, which will be the world's largest

producer in 2014; and (3) a collapse in the 2014 global oil demand growth outlook, which the International Energy Agency (IEA) has now revised down to a paltry 700,000 b/d year-over-year—just half of what it predicted earlier this year.

As several observers have noted, this reduction in prices is welcome news for major oil consumers, which stand to benefit mightily from more affordable fuel prices. In the United States alone, annualized Brent at \$80/bbl is the equivalent of a nearly \$100 billion stimulus, roughly similar in value to the 2011 payroll tax cut.

But there is a potentially darker side of the recent drop in prices, namely its effect on oil producers, many of which are dealing with periods of intense social, political, and economic frailty, from the lasting effects of the Arab Spring throughout the Middle East and North Africa to political transitions in Nigeria and Venezuela.

Higher levels of instability and social unrest in exporters could affect the security of global oil supplies both in the short term.

In this report, we ask the question: are today's low prices sowing the seeds of future discord in oil markets? To answer that question, we have updated estimates of fiscal break-even oil prices for major OPEC members and Russia in order to assess their vulnerability to economic and political instability amid declining global oil prices. Higher levels of instability and social unrest in exporters could affect the security of global oil supplies both in the short term, due to threats to production infrastructure, and in the long term, as these nations increasingly divert upstream investments to maintain social benefits, perpetuating a recent trend. This dynamic would have direct implications for major oil consumers and the global economy.

These concerns are amplified by an increasingly unstable geopolitical climate. Increased oil production in the United States has helped reduce price volatility in the global market despite multiple supply outages in major exporters, such as Libya, Iran, Iraq and Nigeria and has more recently contributed to a sharp decline in global oil prices as those supply shocks partly reverse in an atmosphere of weaker demand. Future disruptions, however, would once again bring the gap between supply and demand perilously close, testing OPEC spare production capacity and increasing the risk of price spikes.

The likelihood of such disruptions rises when countries are unable to meet their social or military spending obligations, a challenge that is set to emerge rapidly in an unsettling number of major oil producers that over-extended themselves between 2009 and 2014, an era of high oil prices and flush revenues. The shift to low prices and reduced revenues is set to cause a painful adjustment that will affect exporters accounting for 45 percent of global oil supplies.

FISCAL BREAK-EVENS: WHAT ARE THEY AND WHY DO THEY MATTER?

A country's fiscal break-even price is defined as the oil price required to balance the central government's budget at given production and export levels. Estimating fiscal break-evens typically involves calculating the ratio between government spending that cannot be financed by non-oil revenues and oil export revenues accrued by the government in royalties after production costs are excluded. We have assumed that production costs remain very low in most Middle Eastern countries, but a sharp increase in cost, which reduces net government revenues from oil, could in turn raise break-even costs. Legally mandated transfers to sovereign funds are excluded from the calculations as they represent costs or savings that are not available to meet government spending needs without a change in policy.

In order to calculate the most comprehensive and accurate break-even estimates, this report also considers the off-balance-sheet spending of local governments to capture real spending needs. These contingent liabilities of oil exporting governments and their other revenues—

property receipts, dividends from domestic enterprises—tend to increase as oil prices fall, increasing capital needs.

In countries where the oil and natural gas industry is state-run and national oil company (NOC) export revenues flow directly into central government coffers, the fiscal break-even price can form a kind of political cost curve to supplement the geology-driven marginal cost curves prevalent in the industry. Theoretically, these political cost curves can increase the willingness of producers to invest more funds in increased energy production or draw on surplus capacity if they have it. In practice, only a few OPEC members have actual useable surplus capacity, but fiscal capacity can shape future investment trends. Moreover, governments that run out of cash may be unable to maintain political stability, increasing security costs.

Given the role of oil exports in their fiscal outlooks, governments in OPEC countries have a direct incentive to maintain higher oil prices.

Fiscal break-even costs and production costs are often widely divergent. For example, while many OPEC countries continue to benefit from marginal production costs between \$10 and \$30/bbl, their fiscal break-even prices are far higher, averaging between \$65 and \$130/bbl in 2014. Given the prominent role of oil exports in their fiscal outlooks, the governments in these countries have a direct incentive to maintain higher oil prices, particularly those countries that have little short-term capacity to increase production. Others, like Saudi Arabia may take a longer view, preferring to maintain strong demand, which will keep both the call on OPEC robust and support prices.

Several factors can drive a change in a country's fiscal break-even oil price: a change in government spending (net of non-oil revenues), a change in government revenues (including a change in exchange rate that changes the local currency value of foreign currency resource earnings), or a change in oil production. During the past several years, a rapid increase in spending—and spending commitments—occurred in many oil exporting nations as they became increasingly flush with oil revenues during a period of high prices. More than any other factor, this increase in spending has contributed to rising fiscal break-even oil prices for several key exporters, though unexpected declines in production certainly affected a handful of large exporters, most notably Libya and Iran.

Figure 1: 2014 FISCAL BREAK-EVEN OIL PRICES AND OIL PRODUCTION

Country	Oil Share of Budget Revenue	Break-Even (\$/bbl)	Production (mbd)	Share of Global Production
Algeria	75%	118	1.6	1.8%
Angola	51%	118	1.8	2.1%
Iran	85%	120	2.8	3.3%
Iraq	86%	105	3.3	3.8%
Kuwait	81%	70	3.1	3.6%
Libya	82%	130	0.9	1.1%
Nigeria	80%	118	2.3	2.7%
Qatar	54%	65	2.0	2.3%
Russia	50%	105	10.8	12.5%
Saudi Arabia	91%	82	11.5	13.4%
UAE	38%	72	3.6	4.2%
Venezuela	60%	125	2.6	3.1%

Relatively low levels of government debt provide resilience to these oil exporting economies, since they tend to be net creditors and have sizeable savings (especially those in the Gulf Cooperation Council). On average, government debt levels are less than 15 percent of GDP in key OPEC members and Russia. In part, this reflects their experience in the previous oil bust in the 1990s when many producers incurred high levels of debt, which they only paid back in the early 2000s.

However, Russia, UAE and Qatar all have significant contingent liabilities as government owned entities, including energy companies, took on debt to finance expansion and might need capital injections in a downturn if their projects fail to meet expected returns. In Russia, the private sector also took the opportunity to borrow heavily on the back of a strong government balance sheet, which now means that its total foreign debt outstrips its foreign reserves. While little of this debt is due in 2014, it will come due in coming years and debt service payments will eat away at Russia's creditor position.

WHAT DROVE THE INCREASE IN SPENDING?

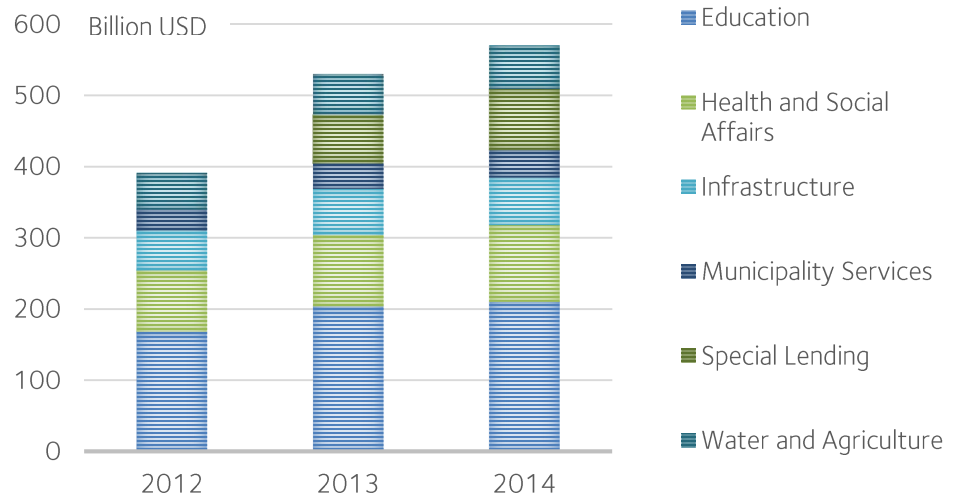
Oil-exporting nations have taken advantage of higher oil prices over the past decade to increase social transfer and hike public wages and pensions.

The drivers of increased government spending have largely been political in nature, with oil-exporting nations taking advantage of higher oil prices in the last decade to increase social transfer, and hike public wages and pensions as well as publicly funded investment. The global financial crisis (and the succeeding European financial crisis), which hit financial returns, certainly amplified the demand for stimulus. However, the primary catalyst for increased spending in Gulf Cooperation Council (GCC) exporters, for example, was the cycle of regional and domestic political instability associated with the Arab Spring, which exacerbated a broader trend towards greater spending. Domestic instability necessitated large, short-term increases in social spending to placate restive populations (sometimes successfully so, sometimes not) in member states including Saudi Arabia, Kuwait, and UAE. More broadly, the cycle of violence that engulfed several nations, most notably Syria, Egypt and Libya, stressed regional political divides, and contributed to a cycle of rising military expenditures in several nations, notably in Saudi Arabia and, to a lesser degree, Iran (Figure 2).

FIGURE 2: MILITARY SPENDING, SHARE OF TOTAL SPENDING



FIGURE 3: SAUDI SPENDING BY TYPE



Source: RGE, Ministry of Finance

Meanwhile, Russia's government spending doubled from 2005 to 2013, even as non-energy revenue remained under pressure due to the global recession and tax changes. The Russian government responded to a sizeable budget shortfall in 2013 by cutting non-military spending and capping pension increases, hitting consumption and public investment unrelated to the Sochi Olympics. With public and private investment constrained, these policies weakened growth. However, these measures temporarily reduced Russia's fiscal break-even. Fiscal restraint did cap the fiscal deficit and bring an unexpected resilience to the Russian economy as key state companies faced financing issues under sanctions that began in March 2014. The depreciation of the Russian ruble also contributed, as Moscow benefited from a greater local currency value of its oil and gas export earnings, helping it weather the effects of sanctions. Nonetheless, sanctions resilience will be short lived, as Russia will need to draw on its limited sovereign savings to help its companies meet their refinancing needs. We expect that the government will face more pressure to spend in 2015 as the economy slips into recession, causing it to draw on its savings.

Subsidies cost the central governments within OPEC \$250 billion and Russia nearly \$50 billion in 2012 alone.

Sizeable fuel subsidies are also eroding fiscal space in numerous countries and increasing fiscal break-even costs. Most obviously, the subsidies are expensive, costing central governments within OPEC \$250 billion and Russia nearly \$50 billion in 2012 alone. Cheap fuel also encourages more consumption, reducing export capacity and fueling the development of inefficient domestic industry and consumers. This trend is pervasive across fuel exporting nations, but is particularly problematic in two groups of countries: (1) those that lack sufficient refining capacity and must re-import refined fuels and sell them on to a domestic market at subsidized prices (Nigeria); and (2) those that lack sufficient natural gas to meet domestic power needs and must either burn oil, which eats into export volumes (Saudi Arabia, and Iraq), or import and subsidize gas (UAE).

Even in countries that have sufficient supplies, subsidies reduce the ability to gain domestic or export revenue and put an onus on investing in new capacity to maintain or increase export capacity. Some OPEC members including Nigeria and Iran have tried to phase in fuel subsidy cuts in recent years – to different degrees of success. Nigeria's government was forced to partly reverse these price hikes after public pressure and unrest, meaning that its subsidy bill remains high, limiting its ability to spend on public investment.

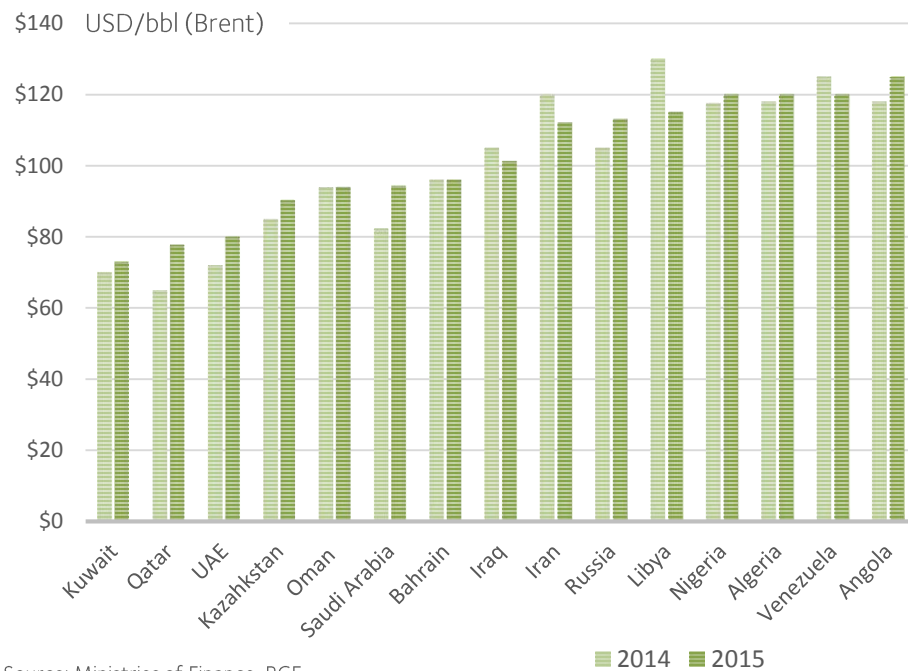
WHICH COUNTRIES ARE THE MOST AND LEAST VULNERABLE?

Within OPEC, the most fiscally vulnerable countries today include Iran, Iraq, Algeria, Libya, and Venezuela, all of which will be unable to meet government spending requirements in 2014 based on current production levels and prices. All require a Brent crude oil price of more than \$105/bbl to balance their budgets. Notably, these nations historically rank among the OPEC hawks, calling on other members, such as Saudi Arabia, to cut production to stabilize prices, though they themselves tend not to voluntarily cut production.

A further decline to \$80/bbl would bring all OPEC countries but Qatar and Kuwait into fiscal deficit.

At an average Brent price of \$95/bbl, each of these countries will continue to run fiscal deficits in 2015, while Saudi Arabia and other GCC members will eke out narrow fiscal surpluses. However, based on current market dynamics, global oil prices are likely to average between \$85 and \$90 per barrel in 2015. A further decline to \$80/bbl would bring all OPEC countries but Qatar, Kuwait, and UAE into fiscal deficit.

FIGURE 4: FISCAL BREAK-EVEN, 2014-2015



Although somewhat less vulnerable, the GCC countries have also sharply increased government spending on subsidies and wages, particularly after the Arab Spring. This spending

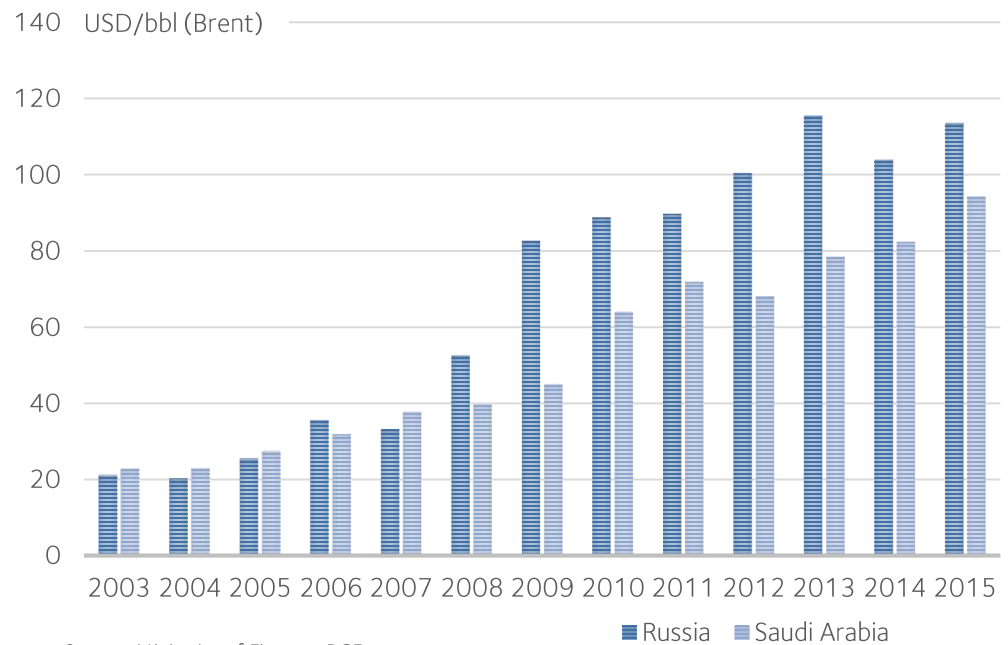
is politically difficult to cut, particularly since oil exporters are reluctant to engage in the sort of political reforms that might facilitate a reduction in subsidies. If oil prices—and therefore revenues—enter a period of sustained decline, GCC countries with entrenched social and military commitments will find themselves between a rock and a hard place.

Russia requires \$105/bbl to balance its budget in 2014, but that figure will rise above \$110/barrel in 2015 as non-oil revenues decline due to sanctions and a near economic recession. Sanctions on energy technology are not expected to have much effect on Russia's oil output during 2015, which should remain near 10 million barrels a day (7.5 million barrels a day in exports), but they will jeopardize much-needed, already costly investment to replace maturing fields in the years to come.

It is interesting to note that both Russia and Saudi Arabia actually experienced a temporary reduction in their fiscal break-even price in 2013 and early 2014 due to fiscal conservatism (spending caps in both countries) and higher production (Saudi Arabia). This capped break-even prices at \$82/bbl for Saudi Arabia and \$105/bbl for Russia. These trends will reverse in 2015. Moreover, off-balance-sheet spending adds another \$10/bbl, taking the 2015 break-even for Saudi Arabia and Russia to \$105/bbl and more than \$120/bbl respectively.

At the other extreme is Qatar, whose gas revenues reduce its reliance on crude oil to meet government spending needs, and the UAE, whose non-oil revenue is nonetheless correlated with high oil prices. Qatar's fiscal break-even oil price currently stands at \$65/bbl, and it is expected to remain below \$80/bbl in 2015. The price for UAE remains roughly flat, increasing slightly from \$72/bbl in 2014 to \$80/bbl in 2015. These countries, unlike their peers, have also been more willing to encourage domestic actors to issue debt to finance investment projects, leading to Dubai's debt crisis. Moreover, their investment returns from their sovereign funds provide an intermittent stream of government revenues.

FIGURE 5: FISCAL BREAK-EVEN OIL PRICES, RUSSIA AND SAUDI ARABIA (2003-2015)



WHY CAN'T THESE COUNTRIES JUST TAKE ON DEBT?

The saving grace for key oil exporters is that sovereign debt levels are generally low and savings are high.

The saving grace for most key oil exporters is that current sovereign debt levels are generally low and savings are high. In fact, countries like Saudi Arabia, Nigeria, Russia and Iraq have been careful to avoid a repeat of their experience in the 1990s, when they took on massive debt levels that took a decade to unwind (domestic in the case of Saudi Arabia and Kuwait, foreign in the case of other countries). Most OPEC members paid down their sovereign debt in the mid-2000s before sharply ramping up spending, and they have generally been cautious about taking on debt that could increase service costs in the case of a slowdown. A notable exception is Venezuela, where the combined debt of the government and PDVSA equates to more than 80 percent of GDP, including a sizeable \$4 billion due before the end of 2014.

However, contingent liabilities of most oil exporting governments have risen as publically owned banks, property developers and state-owned enterprises have levered up to finance investment projects. These liabilities are particularly high in Russia, UAE and Qatar, though some government-linked entities have reduced their liabilities or lengthened the maturities of their debt since the global financial crisis in 2008-2009. National oil companies are some of the most indebted and increasingly reliant on foreign funding and partners to finance their new investment. Meanwhile, energy sale and export proceeds go to finance the government budget. While some debt can be healthy, this bargain suggests that national oil companies in Nigeria, Iran, Russia, among others, will struggle to meet capex plans, while foreign partners face strong local contribution and local content regulations.

HOW LONG COULD SAVINGS LAST?

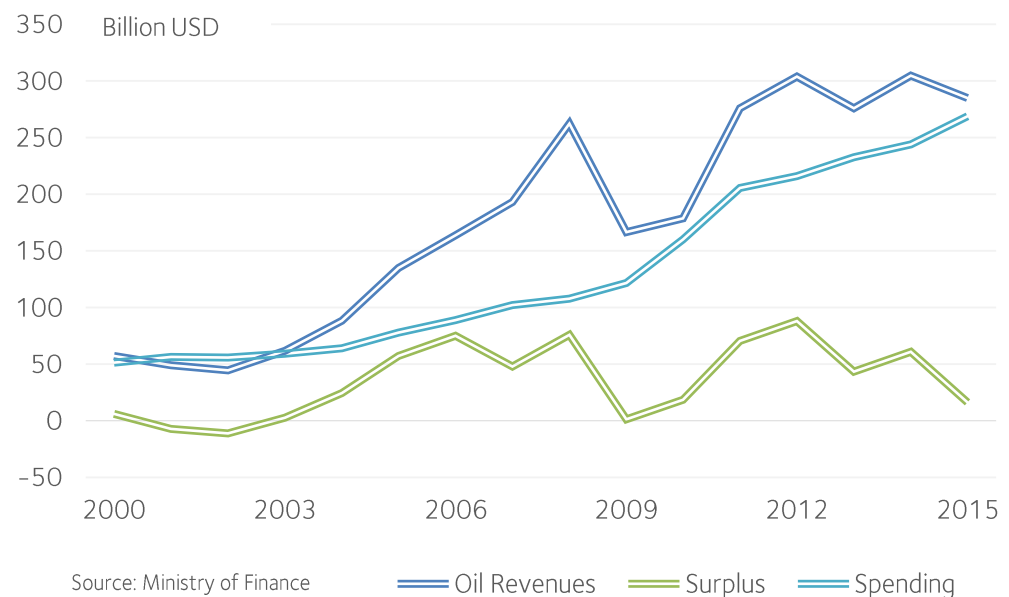
Saudi Arabia has ample savings on which it could draw to help fill the fiscal gap for a period of years. If current spending plans persist (5 percent spending increase annually), Saudi Arabia could cover three years of deficits before being forced to cut back, assuming Brent at \$90/bbl and exports at 7.5 million barrels per day. Saudi Arabia nonetheless faces key choices between supporting domestic spending needs and maintaining domestic security, and maintaining the status quo in neighboring countries, such as Egypt, Bahrain, Jordan, and Morocco among others. Abu Dhabi (UAE) will also face some of these challenges, though its lower break-even costs and greater sources of non-oil revenue (investment and construction taxes) will require more time to adjust.

Saudi Arabia would first make up any shortfall by drawing on its savings, which are sizeable at over \$800 billion

Saudi Arabia need not make these hard decisions in 2015's budget (due in December of 2014), but it will likely adjust spending over the course of the year if oil prices disappoint. Based on past experiences in 2008 and during the 1990s oil bust, we expect Saudi Arabia would first make up any shortfall by drawing on its savings, which are sizeable at over \$800 billion, particularly if it believes an oil slump is transitory.

If the current oil price slump is long-lasting, Saudi Arabia would likely begin to cut spending on public investment and possibly subsidies or corporations, saving any cuts to social spending a last resort. Compared to the 1990s, Saudi Arabian officials tend to increase spending at times when oil prices are climbing (as it seems they did in H1 2014, stepping up investment projects) and to cut investment projects when prices soften. These adjustments are less politically difficult than cutting social spending or subsidies. However, this pro-cyclical policy suggests that domestic demand and long-term growth would slow more. Saudi government-linked entities could also take on debt to sustain their projects, as discussed above.

FIGURE 6: SAUDI SPENDING AND OIL REVENUES



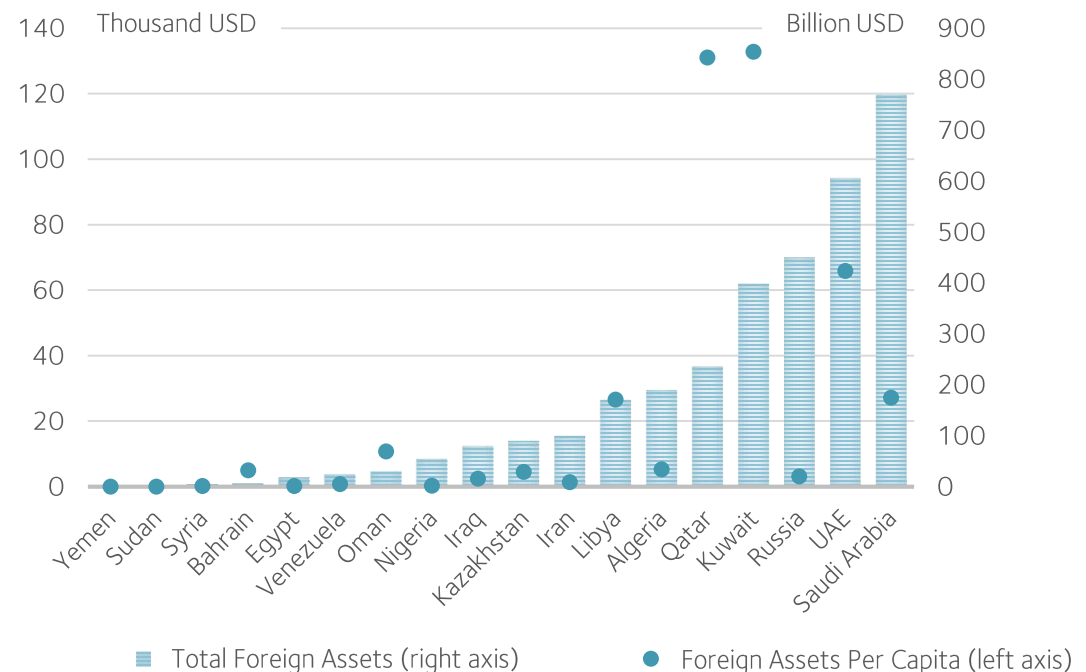
Russia, Libya, Iran, and Venezuela have limited reserves or are drawing down reserves quickly.

By contrast, countries like Russia, Libya, and Venezuela have limited reserves on which to draw, or are drawing down reserves quickly, suggesting they will soon find themselves without a cash buffer if oil prices drop further. Libya's foreign currency reserves fell from a peak of over \$120 billion in late 2013 to about \$95 billion in September 2014 as its oil export revenue collapsed. The recent increase in oil exports to 900,000 barrels per day should reduce the call on its savings, though we anticipate domestic demands for funds will only increase given the persistent state of conflict.

While Iran has sizeable reserves (\$100 billion), most of these are locked up in escrow accounts in Asia and Turkey and can only be used to buy goods in these countries, rather than repatriated or used for any purpose preferred by the government. As a result, they provide little buffer. It is therefore no surprise Iran has responded to sanctions by cutting government spending to build up resilience to current and future sanctions.

In fact, even some seemingly large reserves stockpiles are small when scaled by the size of the economy and foreign currency liabilities. Russia has \$450 billion in foreign exchange reserves, which include over \$100 billion in their sovereign funds. Yet on a per capita basis, Russia's official foreign assets are among the lowest of the key oil exporters, similar to those of Algeria and Oman. In H2 2014, Russian state-linked companies have been publicly fighting for a share of the \$100 billion saved in the sovereign wealth fund (National Wealth Fund). While the NWF has been allowed to invest in local assets, it has yet to allocate its resources fully. Its use as a fiscal stabilization tool, rather than for seeding pension funds or meeting other long-term needs as intended, would risk longer-term social and political tension in Russia.

FIGURE 7: TOTAL AND PER-CAPITAL FOREIGN ASSETS



CONCLUSION

The current cycle of declining oil prices and reduced revenues will undoubtedly create significant challenges for a number of major oil exporters. In general, producers with more diversified economies and export portfolios will be better-equipped to weather the cycle, but within OPEC and Russia, this is not the norm. Most countries are heavily dependent on oil revenues to finance not just economic growth, but also the expanding fiscal promises made to otherwise potentially restive populations.

In the past, exporters had better options at their disposal to counteract the effects of an oil price downturn. OPEC—principally Saudi Arabia and other GCC countries—could cut production by modest sums and expect to generate an outsized price impact, thereby shoring up reserves. This time, the situation is much different. In a way, U.S. tight oil production must seem like Frankenstein's monster to many OPEC members. Though surging emerging market oil demand played a role, the cartel's production limits and instability within member states contributed mightily to the decade of high oil prices that created the U.S. oil boom in the first place. The boom, in turn, has kept oil markets more than well supplied for three years running, eating into OPEC market share and driving oil prices lower. For the time being, the cartel has lost some power.

And while lower near-term oil prices will deliver an economic boost, oil consumers may want to postpone the celebration. Nearly half the world's oil supplies now originate in countries standing at the precipice of major fiscal adjustments with potentially profound social, economic, and geopolitical implications. Whether the return of volatility is imminent or not will depend largely on how these adjustments are made. Economists and oil market observers have often noted that the best cure for high oil prices is high oil prices. Perhaps the plague that blights low oil prices will be low oil prices.