Decision Point

A WELL-SUPPLIED GLOBAL OIL MARKET WILL MAKE 2013 THE YEAR TO DEAL WITH IRAN

Issue Brief

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Securing America's Future Energy

roubini GLOBAL ECONOMICS

Summary

- For much of the past decade, tight oil markets and concerns regarding fuel-price volatility have served to limit the willingness of Western nations to deal assertively with Iran's nuclear program. The economies of the United States, Japan, and much of the European Union are highly oil-dependent, and Iran's significant role in global oil trade often undermined the implementation of truly effective sanctions. Meanwhile, with few options for alternative supplies, emerging economies like China and India were generally unwilling to limit their purchases of Iranian crude.

- In 2012, this dynamic began to change. With global oil demand slow to recover from the 2007-2009 economic recession and oil production outside of the Organization of the Petroleum Exporting Countries (OPEC) steadily rising, the opportunity arose to tighten sanctions on Iran's petroleum sector, which is the largest source of its export and government revenue. As a result of more assertive sanctions enacted by the United States and several European nations—and implemented by key allies—Iranian crude oil production fell to 3.0 million barrels per day (mbd) in 2012, its lowest level since 1989.

- The coming months will provide a critical window in which oil markets will support further action on Iran. In fact, surging non-OPEC oil production and weak oil demand growth in the United States and Europe could help the global oil market temporarily absorb the loss of the majority of Iran's remaining 1.0 to 1.5 mbd of crude exports, whether through additional sanctions or other means. The International Energy Agency (IEA) currently expects the 'call on OPEC' crude oil production to average 29.7 mbd in 2013, the lowest level since 2009. Meanwhile, spare production capacity in Saudi Arabia is expected to average at least 2.5 mbd throughout 2013.

- This opportunity will not last indefinitely. The second and third quarters of 2013 will provide the best opportunity for further action on Iran, with oil markets tightening slightly toward the end of the year and into 2014 as oil demand growth in emerging markets—particularly China—begins to accelerate.

- Any action that removes further Iranian supplies from the global oil market has the potential to generate oil-price volatility. Transparency by the United States, European nations, and other Gulf oil producers will be critical for minimizing such volatility. Policy intentions should be clearly signaled to the oil market, including assurances that: 1) all supply losses would be covered by increased production from Saudi Arabia and other Gulf countries; 2) Western governments would swiftly utilize public stocks if needed; and 3) the Strait of Hormuz would remain open and secure, and all tankers would be insured.

- The challenges and costs associated with further action designed to persuade Iran to abandon its nuclear program must be weighed against the cost of inaction. The presence of a nuclear Iran in a Middle East region already fraught with instability would likely lead to higher long-run oil prices and significant long-term costs for the United States and the global economy.

Background: Iran Sanctions and Energy Markets

After more than a decade of monitoring, coercion, and—thus far—fruitless negotiation, the international community is rapidly approaching a decision point on Iran's nuclear program. Estimates vary, but there is convincing evidence that Iran is already capable of producing enough highly-enriched uranium (HEU) for one nuclear device in as little as two to four months.[1] While the processes utilized in such a 'breakout' effort would likely be detectable by Western governments today, Iran continues to move toward establishing the capability to produce weapons-grade uranium in a far more secretive, rapid manner. According to one recent analysis, Iran is likely to reach a point where it could covertly produce enough HEU for one nuclear device in as little as seven to ten days sometime in mid-2014.[2]

Successive U.S. administrations have stated that preventing Iran from crossing this threshold is one of America's most urgent national security priorities. Most recently, President Obama has made it clear that American policy is not to contain a nuclear Iran, but to prevent it.[3] National security analysts warn that a nuclear Iran endangers vital U.S. interests, not just because it would pose an unacceptable threat to Israel and our key Gulf allies, but because it would result in a Middle Eastern nuclear arms race and the collapse of the global non-proliferation regime, elevating the possibility that nuclear materials could find their way into the hands of non-state actors. Such developments would represent an unprecedented, daunting threat to governments around the world.

For the past several years, Western governments have imposed upon Iran an economic sanctions regime designed to pressure Tehran into giving up its uranium enrichment program. U.S. sanctions date back to 1979 and were originally focused on forcing Iran to eliminate its support for terrorist groups. By the mid-1990s, however, Iran's emerging nuclear program became the focus of the sanctions. In 2006, after it was clear that Iran did not intend to comply with a litany of outstanding requests for more information about its activities, the International Atomic Energy Agency (IAEA) referred Iran to the United Nations Security Council, and the first round of United Nations sanctions were implemented. These sanctions provided the basis for additional bilateral sanctions imposed by governments around the world.

Despite widespread support for the sanctions and their implementation by a broad group of countries, they were generally ineffective at achieving their intended outcome. After sanctions were put in place, Iran successfully constructed several facilities designed to further its nuclear ambitions, including secret installations that were only discovered long after they had already become operational. In fact, between 2006 and 2012, Iran installed 10,000 new centrifuges for enriching uranium and produced a total of 7,611 kilograms (kg) of uranium enriched to 5 percent and 233 kg of uranium enriched to 20 percent (which is 90 percent of the way to weapons-grade material).[4]

1 William C. Witt, Christina Walrond, David Albright, and Houston Wood, "Iran's Evolving Breakout Potential," Institute for Science and International Security (October 2012)

2 David Albright, Mark Dubowitz, Orde Kittrie, Leonard Spector and Michael Yaffe, "U.S. Non-Proliferation Strategy for the Changing Middle East," The Project on U.S. Middle East Non-Proliferation Strategy (January 2013)

3 See, e.g., "Biden, Netanyahu set tone on Iran for Obama visit to Israel," Reuters, March 5, 2013

4 International Atomic Energy Agency (IAEA), November 2012 Board Report

Historically, the key weakness in the Iran sanctions regime was its inability or unwillingness to successfully target Iran's petroleum sector. Exports of crude oil and natural gas liquids (NGLs) accounted for well over 70 percent of Iran's government revenues during the past decade, making it an ideal target for truly coercive sanctions.[5] Between 2002 and 2011, Iranian crude oil export earnings totaled $540 billion.[6] Yet, while successive rounds of sanctions implemented by the United Nations as well as European and other governments targeted a range of Iranian financial and economic activities, constricting measures aimed at the oil and natural gas industry were generally not enacted or enforced by key countries through 2011. Three critical factors prevented more assertive efforts to sanction the Iranian energy sector: reliance by some European and Asian countries on Iranian oil supplies; investment by international oil companies in Iran's oil and gas sector; and the role of Iranian oil production in an era of rising emerging market demand and slow non-OPEC supply growth.

European and Asian Reliance on Iranian Oil Supplies

Iran's exports of crude oil averaged 2.5 million barrels per day between 2006 and 2011.[7] And though a substantial share of these exports were destined for emerging market economies—most notably China and India—members of the Organization for Economic Cooperation and Development (OECD) accounted for more than 50 percent of Iran's oil exports over the same period.[8] Admittedly, OECD imports of Iranian crude generally began to decline after 2007. However, prior to 2012, a sizeable portion of the decrease was related to reduced oil demand during the global financial crisis as opposed to any particular change in policy.

FIGURE 1

IRAN SHARE OF OIL IMPORTS FOR SELECT OECD COUNTRIES & IRANIAN EXPORT REVENUES

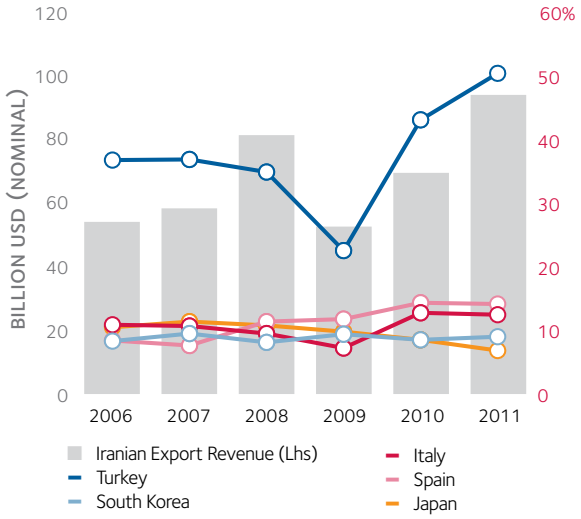
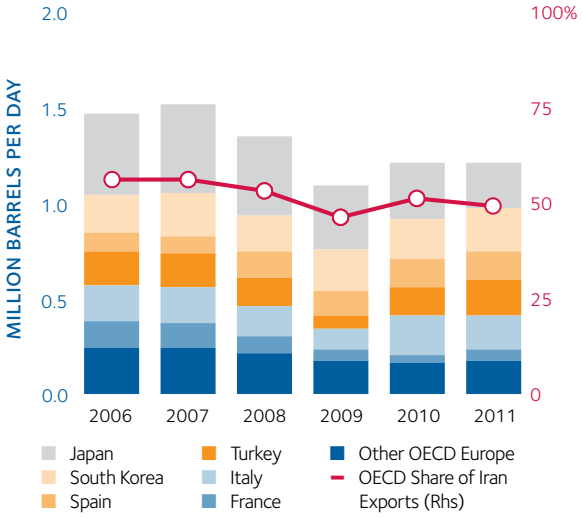


FIGURE 2

OECD IMPORTS OF CRUDE OIL FROM IRAN



Source: Figure 1—SAFE Analysis based on data from IEA; Figure 2—SAFE Analysis based on data from IEA

5 SAFE analysis based on data from: International Monetary Fund (IMF), Regional Economic Outlook: Middle East and Central Asia (November 2012)
6 U.S. Department of Energy (DOE), Energy Information Administration (EIA), "OPEC Revenues Fact Sheet," December 2012
7 SAFE analysis based on data from: International Energy Agency (IEA), February 2013 Oil Market Report (OMR) and Online Data Service
8 SAFE analysis based on data from: IEA, Oil Information 2009, 2011, 2012, February 2013 OMR, and Online Data Service

On a country-specific basis, Turkey has depended on Iranian oil supplies more than any other OECD nation, with Iranian cargoes accounting for an average of nearly 40 percent of Turkish crude oil supplies in recent years.[9] On average, however, Iranian crude also accounted for between 9 and 11 percent of foreign oil supplies for Japan, South Korea, Italy, and Spain between 2006 and 2011—a modest, but not easily replaceable, share.

International Oil Company Activity in Iran

Investments in Iran's domestic oil and natural gas reserves by international oil companies headquartered in several European and Asian countries were an additional factor that undermined support for sanctions. Standing at more than 150 billion barrels as of year-end 2011, Iran's proved reserves of crude oil are the third largest in OPEC and fourth largest in the world, and break-even production costs there are estimated to be less than $20 per barrel.[10] Iranian proved reserves of natural gas currently stand at nearly 1,200 trillion cubic feet (tcf)—equal to nearly 16 percent of the global total and second in size only to Russia.[11] And though companies active in developing Iranian resources were not awarded concessions or production sharing agreements, they were generally able to negotiate favorable supply contracts. Access to low-cost, conventional oil and natural gas at a time when the non-OPEC global resource base was becoming more complex and costly to develop was a powerful incentive for several European and Asian governments and companies to stay economically engaged with Iran.

The Role of Iranian Oil Production in the Market

Over the past decade, the global oil market has typically been characterized by three dominant trends: rapidly rising oil demand, particularly in emerging market economies like China and India; slow or stagnant non-OPEC production growth outside of the Former Soviet Union; and generally underwhelming increases in OPEC crude oil production capacity. The net result of these trends was the steady erosion of spare oil production capacity within OPEC, especially from 2003 to 2008 and again from 2011 to 2012.[12] Markets are generally comfortable with OPEC spare capacity equal to at least 4 percent of global oil demand.[13] When spare capacity falls below this level, fears rise that the market is susceptible to imbalances from relatively small perturbations in individual countries or regions. In such an environment, disruptions from weather, domestic political instability, or military conflict can generate highly damaging oil price volatility.

The tightness of the global oil market over the past decade meant that any action designed to substantially reduce Iranian oil production would come with significant price impacts and potentially devastating economic impacts for oil-dependent countries in both the industrialized world and emerging markets. The physical market simply could not afford to lose any meaningful portion of oil exports throughout most of the past decade. Furthermore, the market had a general sense of uncertainty about 'where the next barrels would come from' in an era when conventional

9 SAFE analysis based on data from: IEA, Oil Information 2009, 2011, 2012, February 2013 OMR, and Online Data Service

10 SAFE analysis based on data from: BP Statistical Review; and IEA, World Energy Outlook 2011 (WEO 2011)

11 BP Statistical Review

12 OPEC spare capacity is defined by the International Energy Agency as idled production capacity that can brought online in 30 days and maintained for at least 90 days. Only OPEC members maintain such capacity, which they use as part of the cartel's broader efforts to influence global oil prices. The vast majority of OPEC's spare production capacity is held by Saudi Arabia.

13 SAFE analysis based on industry research.

resources were believed to be in permanent decline outside of OPEC and any new supplies seemed to be prohibitively expensive. This uncertainty would likely have extended the duration of any price increase from Iranian oil sanctions, a development that would have been resolved only by demand destruction and global economic recession. More than any other factor, concerns about oil price volatility and economic growth dissuaded serious efforts to sanction Iran's petroleum industry in the years leading up to 2012.

A New Paradigm in Oil Markets

The trends governing oil market dynamics throughout much of the past decade have recently evolved in important ways. Some of the changes are structural and likely to have long-lasting effects on the market, while others are likely to be more temporary. In either case, the oil market of 2012 was starkly different than the market of 2003-2011, and the oil market of 2013 is likely to witness further shifts. The implications for Western policy on Iran have been—and will continue to be—critically important.

FIGURE 3

ANNUAL GROWTH IN NON-OPEC AMERICAS LIQUID FUEL PRODUCTION (2008-2013)

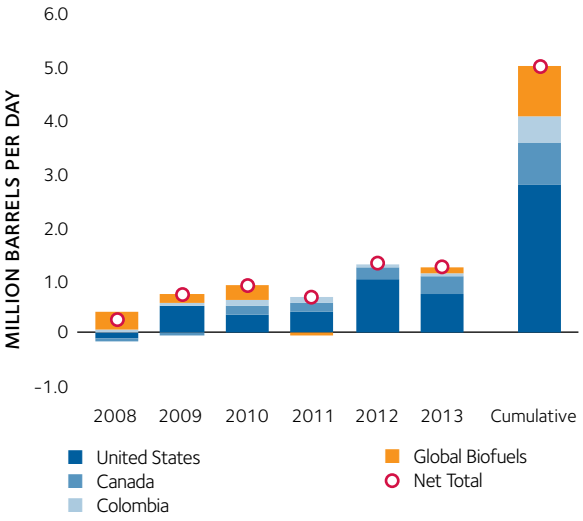
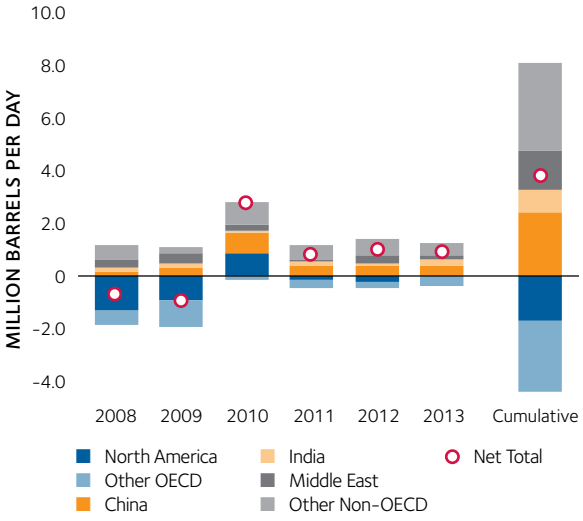


FIGURE 4

ANNUAL GROWTH IN GLOBAL LIQUID FUEL DEMAND (2008-2013)



Source: Figure 3—IEA; Figure 4—IEA

The most significant change in global oil market dynamics has been a sharp increase in non-OPEC oil production, particularly from the United States, Canada, and Colombia. Driven by surging output of tight oil, U.S. oil production increased by nearly 1.0 mbd in 2012 alone, building on smaller gains that occurred between 2008 and 2011.[14] Cumulatively, the United States, Colombia, and Canada added nearly 3.0 mbd of new oil production to the global market between 2008 and 2012.[15] Based

14 IEA, March 2013 OMR and Annual Statistical Supplement 2011

15 Id. Figure excludes biofuels.

on current estimates, the United States is likely to increase production of crude oil and NGLs by an additional 0.8 mbd in 2013 while combined output in Colombia and Canada grows by 0.3 mbd.[16]

At the same time that non-OPEC oil production has been rising, global oil demand growth has generally been restrained. Following two consecutive years of demand contraction during the global financial crisis in 2008 and 2009, oil demand surged by 2.7 mbd in 2010 driven largely by the recovery in China.[17] However, global demand increased by just 0.8 mbd in 2011 and 0.9 mbd in 2012 as fuel consumption in North America and other OECD regions actually contracted and emerging market demand moderated.[18] Current estimates suggest that global demand will grow by another 0.8 mbd in 2013, a rate of growth that will be completely offset by increases in non-OPEC liquids production.

Effect on Iran Policy

The net effect of significant increases in non-OPEC liquids production and moderate global oil demand growth was that the market's requirement for OPEC crude oil—the so-called 'call on OPEC'—remained flat in 2012, even as total OPEC production capacity increased by 0.7 mbd due to the return of Libyan crude oil production and higher capacity in Iraq.[19] As a result, the market gained an added degree of flexibility that allowed Western nations to successfully implement the first ever truly effective sanctions on Iran's energy industry. New U.S. sanctions announced early in 2012 had an almost immediate effect, reducing Iran's year-over-year crude exports by nearly 0.4 mbd in the first quarter of 2012. A complete European embargo on Iranian oil imports implemented on July 1 had an even larger impact, driving Iran's year-over-year exports down by 1.5 mbd in the third quarter and 1.1 mbd in the fourth quarter.[20]

FIGURE 5

IRAN EXPORTS OF CRUDE OIL

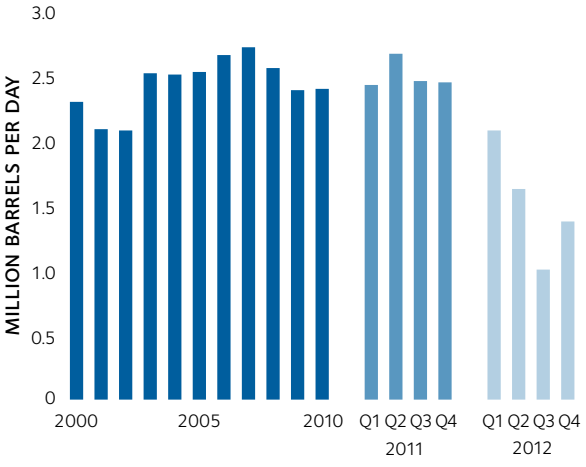
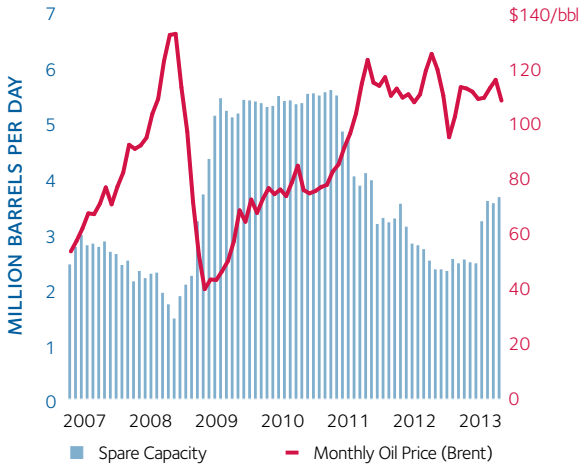


FIGURE 6

OPEC EFFECTIVE SPARE PRODUCTION CAPACITY AND OIL PRICES



Source: Figure 5—IEA; Figure 6—IEA

16 Range of estimates are provided by: IEA, March 2013 OMR and DOE, EIA, March 2013 Short Term Energy Outlook
17 IEA, March 2013 OMR and Online Data Service
18 Id.
19 IEA, March 2013 OMR and 2012 Medium Term Oil Market Report
20 SAFE analysis based on data from: IEA Monthly Oil Market Reports 2011-2012 and media reports

It is important to underscore the fact that the majority of Iranian exports removed from the market in 2012 were associated with OECD countries. Due in part to country waivers for Iranian imports provided by the United States, India and China remained relatively heavy importers of Iranian crude throughout the year. There were, however, periods where Chinese demand pulled back, particularly when Asian tanker companies had difficulty obtaining reinsurance from the International Group of Protection and Indemnity Clubs, which provide liability coverage for 90 percent of the world's ocean-going tonnage. And recent reports suggest that Indian imports of Iranian crude will decline by 17 percent in the fiscal year ending March 31, 2013.[21]

Despite the loss of such a significant amount of Iranian crude oil, global oil prices did not exhibit particularly damaging volatility throughout much of 2012. Compared to their fourth quarter 2011 average, Brent crude prices were up by as much as 16 percent during the first quarter of 2012 and down by as much as 17 percent during the second quarter. However, the average weekly change in oil prices over this period was just 2.2 percent. Prices did rebound substantially in July as the European embargo on Iranian oil came into effect during a period of high summer demand. But, prices throughout most of the second half of the year—the period of time when significant Iranian volumes began coming off the market—were exceptionally stable despite a year-over-year global demand increase of 1.5 mbd in the fourth quarter. Over the final five months of 2012, Brent crude prices traded in a narrow band between $107 and $116 per barrel, and the average weekly price change was just 1.6 percent.[22]

FIGURE 7

IRAN CRUDE OIL EXPORTS BY DESTINATION

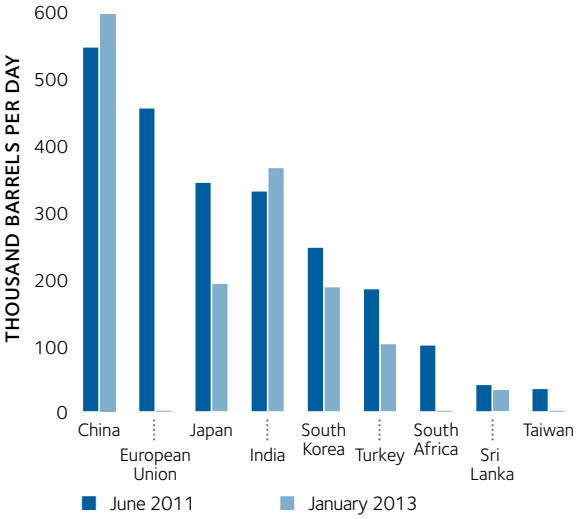
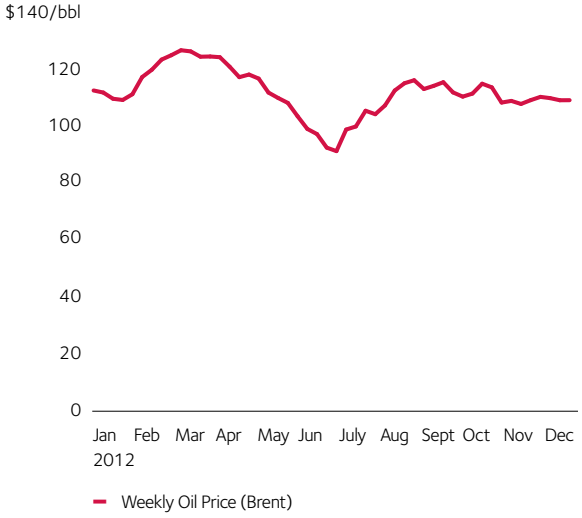


FIGURE 8

WEEKLY BRENT CRUDE (2012)



Source: Figure 7—Roubini Global Economics based on data from DOE, EIA, and public; Figure 8—DOE, EIA

In sum, from an energy market perspective, the initial transition away from Iranian crude should be viewed as highly successful and relatively smooth. Ample non-OPEC supply growth, moder-

21 Prasenjit Bhattacharya and Biman Mukherji, "New U.S. Sanctions Hamper India-Iran Oil Trade," Wall Street Journal, February 6, 2013

22 SAFE analysis based on data from: DOE, EIA, January 2013 STEO

ate demand growth, and the return of lost Libyan capacity meant that the global oil market was able to absorb the loss of roughly 1.0 mbd of Iranian exports without driving OPEC spare production capacity to levels that were viewed as dangerous, such as those seen in 2007 and 2008. In fact, IEA data suggest that the global oil market remained well supplied throughout 2012, with OECD commercial inventories recording net increases in three of four quarters and a net build for the year.[23]

Intensive U.S. diplomacy also played an important role. The State Department successfully persuaded some countries to make cutbacks in Iranian imports in exchange for waivers on the balance and also prevented embargoed Iranian crude from being consumed elsewhere, despite Iranian discounts. However, significant loopholes still exist and need to be addressed. Iran has increased exports of oil products (fuel oil) for instance and some governments in Asia have stepped in to replace private sector insurers. Chinese and Indian imports of Iranian oil continue to provide an important financial lifeline to the regime, which suggests that the approach to sanctions must continue to evolve and improve.

The Market Can Absorb the Loss of Additional Iranian Oil in 2013

Developments in 2012 proved that a long-standing dynamic in dealing with Iran's nuclear activities may not be applicable in the current oil market environment. Specifically, the United States and its allies did not face a stark trade-off between taking assertive action on Iran and maintaining oil prices at levels that support economic growth. As important as this tipping point may have been, it appears likely that it represented only the beginning of a rare opportunity to deal more decisively with Iran. That is, the global oil market in 2013 could withstand the loss of the remainder of Iran's crude oil exports, whether through tighter sanctions or other means.

An easing supply outlook and weak demand in developed nations over the next 12 months will keep crude oil markets (relatively) loose. In fact, growth in non-OPEC oil supply is expected to meet 100 percent—and possibly more—of the increase in global oil demand in 2013, and the IEA currently expects the call on OPEC crude to decline by 0.6 mbd in 2013 compared to 2012.[24] This would place the call on OPEC at its lowest level since 2009. Meanwhile, non-Iranian OPEC production capacity in 2013 is expected to be higher by nearly 1.0 mbd due to growth in Iraq, Angola, Libya, and UAE.[25]

The 2013 outlook for OPEC spare capacity looks fairly promising. Effective spare capacity—which does not include Iran, Iraq, Libya, Nigeria, or Venezuela—increased to 3.3 mbd at year-end 2012, up from 2.4 mbd in May, almost back to levels predating the Arab Spring.[26] Estimates for March 2013 place spare capacity at 3.7 mbd.[27] This gives the world far more room to absorb further supply losses. Furthermore, the Arab Gulf states in general, and Saudi Arabia in particular, demonstrated in the wake of the Libya crisis that they can increase output fairly quickly.

23 IEA, March 2013 OMR
24 Id.
25 IEA, Medium Term Oil Market Report, October 2012
26 IEA, January 2013 OMR
27 IEA, March 2013 OMR

FIGURE 9

NON-IRANIAN OPEC CRUDE CAPACITY AND CALL ON OPEC

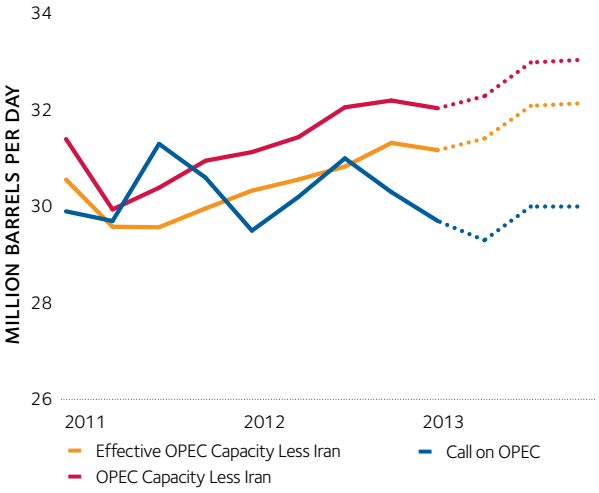
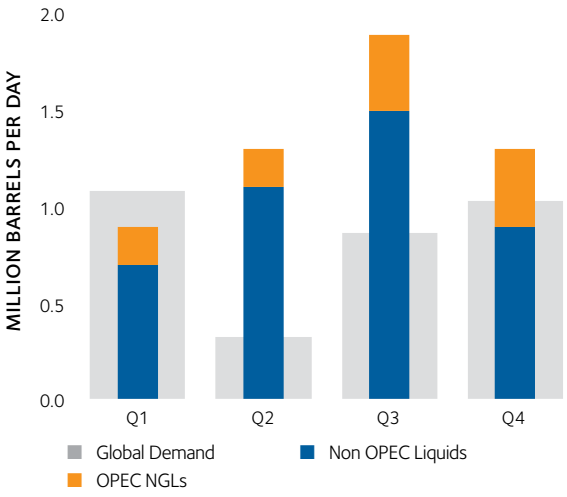


FIGURE 10

2013 VERSUS 2012: YEAR-OVER-YEAR CHANGE IN OIL SUPPLY AND DEMAND



Source: Figure 9—IEA; Figure 10—IEA

Therefore, global oil supplies appear sufficiently robust to absorb the loss of further Iranian crude oil exports. Based on current estimates, the second and third quarters of 2013 will present the most substantial opportunity, with OPEC's non-Iranian crude production capacity exceeding the call on OPEC by an average of 3.0 mbd throughout the period. Admittedly, this gap incorporates excess production capacity from countries that should be viewed as unreliable in terms of their ability to ramp up oil supplies from current levels, including Nigeria, Iraq, Venezuela, and Libya. Yet, even after discounting for these countries, *effective* non-Iranian OPEC production capacity would exceed the call on OPEC by an average of approximately 2.1 mbd during the period from April to September of 2013. By year-end 2013, the gap becomes slightly tighter, though the physical market would still be well supplied barring any additional disruptions.

Implications for Policymakers

New U.S. sanctions that took effect in February 2013 are likely to begin removing additional Iranian barrels from the market soon, and much more can be done—including, at a minimum, reduced flexibility on waivers and zero-tolerance for cheaters. However, the window of opportunity in which the market can comfortably withstand the loss of additional Iranian oil while minimizing oil price volatility and damage to the global economy is small, extending no farther than mid-2014. While non-OPEC supply growth in 2014 is currently expected to meet or exceed growth in 2013, global oil demand will likely accelerate, leading to a tighter oil market. For example, while an estimate is not yet available from IEA, DOE currently expects global demand to grow by 1.3 mbd in 2014 compared to 1.0 mbd in 2013. Accelerated economic growth in the United States, Eurozone, or China would present upside risk to oil prices in this scenario (these

and other scenarios are discussed in *Appendix One*). In other words, the longer policy action is delayed, the tighter crude oil markets will become, and the risk of a spike in crude oil prices that damages the global economy will rise.

The global oil market is cognizant of the potential loss of additional Iranian exports, and Saudi Arabia has demonstrated its willingness and ability to cover such a loss. Nonetheless, significant uncertainty could be generated by further action on Iran. When oil prices have reacted to events in Iran over the past several years, it has primarily been as a result of market uncertainty regarding potential U.S. or Israeli actions and a lack of clarity about shifting supply channels as opposed to the actual loss of Iranian exports. The management of uncertainty in crude oil markets, replacement of lost Iranian exports, and adjustment of supply chains are all key to minimizing crude oil price volatility and potential damage to the global economy. The following steps must be taken by U.S., European, and other policymakers in order to mitigate oil price shocks, avoid unnecessary surprises, and to ultimately succeed.

RECOMMENDATION ONE

Be prepared to utilize public stocks to keep markets well supplied.

By the end of 2013, the complete loss of Iranian crude exports would likely reduce OPEC spare production capacity to approximately 1.5 to 2.0 mbd, a relatively low level that was last seen in 2008 when U.S. oil prices reached historical highs. This slim margin would be equal to approximately 2 percent of global oil demand and would drive the market to build additional risk premium into the price of crude (in the near term), as the ability to cover another loss would become more difficult. This highlights the crucial importance of strategic stockpiles and the world's ability to respond to supply shocks. Policymakers must continuously assure the market of the availability of strategic stockpiles "at any time and for any duration needed" and prove their efficacy in an effort to reduce oil price volatility in the face of inevitable future supply shocks.

RECOMMENDATION TWO

Manage market logistics and provide confidence to Iran's customers.

The majority of Iran's remaining exports go to China, Japan, South Korea, India and Turkey. Alternative sources of supply will need to be found for these countries, likely from members of the Gulf Cooperation Council (GCC) who might have to be convinced to accept a cheaper price for their crude in the interest of damaging Iran and avoiding a regional arms race. This should be framed as a need to place their long-term interest for regional security ahead of their near-term desire for higher oil prices. The GCC countries have already expanded their share of the crude oil market at the expense of Iran. In fact, additional losses of Iranian exports in 2013-14 might allow the GCC countries to avoid cutting output during normal cyclical downturns.

RECOMMENDATION THREE

Transparently address the geopolitical risks.

The global oil market is likely to view assertive action to deal with Iran—including significantly stronger sanctions—as an escalation that could provoke Iran into disrupting crude oil flows through the Strait of Hormuz or a confrontation with its neighbors. Iran may be more likely to try to cause disruption if the prospect of losing all of its exports becomes imminent. While a handful of alternative means for shipping crude out of the Persian Gulf have come online in the last 12 months, at least 10 to 12 mbd of crude oil exports can still only reach market through the Strait of Hormuz. The United States and its allies will need to be transparent and credible in assuring the free flow of all non-Iranian crude through the Strait and may need to facilitate a public-sector guarantee of tanker insurance in the event of any disruption. A demonstration of existing bypass routes for the Strait could also prove incredibly useful, including demonstrating the capacity and functionality of the United Arab Emirates' Abu Dhabi-Fujairah pipeline and Saudi Arabia's East-West, IPSA, and Petroline pipelines.

RECOMMENDATION FOUR

Minimize domestic political fallout through clear communication.

More assertive action on Iran can only work if the United States and its allies remain committed. Effective policy can give oil markets confidence that the impact of any disruption to Iranian exports will be minimized and that oil markets will remain well supplied. But even the most thoughtful and well-coordinated policy steps are unlikely to eliminate a higher risk premium that elevates oil prices and domestic fuel prices around the world. This will be particularly true if the endgame in Iran includes some kind of military conflict. Therefore, consumers throughout the OECD must understand that any higher prices at the pump are part of a critical global effort to safeguard their security.

RECOMMENDATION FIVE

Stay the course.

In spite of the current opportunity provided by oil markets, any effort designed to force Iran to give-up its nuclear program is likely to come with costs, particularly economic costs. In this light, it is important for policymakers to consider the economic implications of failure—that is, the costs of a nuclear Iran. The existence of a more assertive, nuclear-armed Iran would generate a risk premium in the price of crude oil that could last for years as proxy conflicts increased and fears of direct confrontation with Israel steadily intensified. As Iran's regional adversaries moved forward with establishing their own nuclear deterrents, the market would become increasingly concerned about the stability of the broader Middle East region. Oil prices would likely test the ability of oil-dependent economies in North America, Europe, and Asia to achieve sustained economic growth over any reasonable period of time.

Conclusion

In 2012, the United States and its allies in Europe took historic steps toward convincing Iran to abandon its nuclear program. By incorporating the Iranian energy sector into the sanctions regime, the international community began to inflict serious economic pain on Iran. Oil export revenue declined by an estimated $31 billion over the first 11 months of 2012 compared to 2011, from $95 billion to $64 billion.[28] Nonetheless, Iran continues to move forward with enrichment of uranium, and credible estimates suggest that the regime will reach a critical 'point of no return' as soon as mid-2014.

Additional steps can and must be taken in 2013. The global oil market has provided a unique opportunity to deal more assertively with Iran, up to and including removing all Iranian crude exports from the market. The combination of surging non-OPEC liquids production and modest global demand growth will reduce the call on OPEC crude in 2013, even as non-Iranian production capacity grows. As a result, enough effective spare capacity will exist within OPEC to buffer global supplies as additional Iranian barrels are taken out of the equation. This opportunity, however, will not last indefinitely. Markets will be the most flexible through the third quarter of 2013, after which conditions could once again tighten. Time is therefore of the essence.

As they move forward, the United States and Europe will need to prioritize diplomacy and transparency. There is never a good time to remove 1.5 mbd of oil from the global market. Further action on Iran is likely to have at least *some* impact on oil prices and the global economy. The size and scope of the impact will in part be determined by the type of action taken and the expected duration of any disruption. But the costs of action are almost certain to pale in comparison to those of inaction, and they can largely be managed by proactive policies that provide the market with assurance of supply.

Appendix One: Economic Assumptions

Weak global growth in 2013 should restrain demand for fuel. The global economy is improving but weak, and growth will average approximately 3 percent in 2013—a pace similar to last year. RGE expects developed markets to grow below trend at 1.0 percent, with the Eurozone in outright recession as economic weakness spreads from the core to the periphery. Developed markets are still in the middle of a painful deleveraging process that is keeping unemployment elevated despite a nascent housing recovery in the United States. The weak outlook for developed economies will dampen OECD crude oil demand: the IEA currently expects OECD oil consumption to decline by 0.4 mbd in 2013.

Emerging market growth will be closer to trend, at 5.3 percent. China and to a lesser extent other emerging markets will continue to be the driver of global demand growth and the main upward driver of crude oil prices. We expect China's crude oil demand growth to remain strong in 2013

28 DOE, EIA, "OPEC Revenues Fact Sheet," December 2012

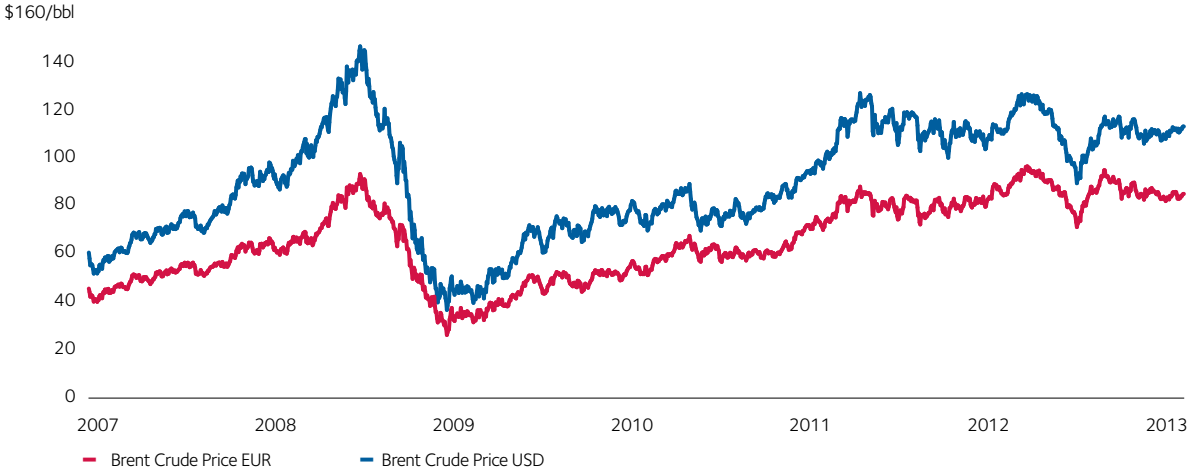
despite the first signs of a structural slowdown in growth emerging toward year-end. Oil consumption will remain robust even amid the inevitable rebalancing of its economy away from investment and toward consumption. Consistent with our outlook for the global economy, IEA and EIA expect global oil consumption growth of 0.8 to 1.0 mbd, respectively, in 2013. Given non-OPEC oil supply growth of 1.1 mbd (excluding OPEC NGLs), the oil market should remain fairly loose this year.

Absent supply shocks, RGE expects crude oil prices to moderate in 2013, with WTI averaging $93/bbl for the year (compared to $95 in 2012). Oil exporter budget balancing and high marginal costs of production will ensure that oil prices remain well supported. We note that a spike in crude oil prices could choke off the recovery in OECD Europe, where oil prices remain close to nominal highs. However, a stronger Euro this year (as money moves out of safe havens on reduced tail risk) should provide limited respite. U.S. crude oil prices also remain elevated by historical standards, making the U.S. recovery vulnerable to further rises in price. A range of academic studies point to a 0.2-0.9 percent hit to real U.S. GDP spread over a two year period for every 10 percent rise in the price of crude oil. However, here it is important to note that today's rising levels of U.S. oil production would provide a counter-balancing effect for GDP by elevating energy company profits.

Oil markets could tighten in 2014. The crude oil supply-demand balance may tighten in 2014 as OECD economic growth accelerates modestly by 1.4 percent. We see a sharp slowdown in China acting as a drag on emerging market growth, which in turn slows global growth to 2.9 percent compared to 3.0 percent in 2013. Still, we expect non-OECD oil consumption growth to remain relatively robust, at similar levels to 2013, maintaining upward pressure on crude oil prices. The EIA expect improved OECD consumption relative to 2013, declining by only 0.2 mbd, but with global oil consumption rising by 1.3 mbd on a bullish (relative to RGE) outlook for China. With non-OPEC supply growth set to meet or slightly exceed 2013 levels, a somewhat tighter supply-demand balance and higher risk of oil price volatility are both possibilities.

FIGURE 11

BRENT CRUDE PRICES IN DOLLARS AND EUROS



Source: Bloomberg

Chinese oil consumption growth is a crucial determinant of the oil supply-demand balance. Consensus expects Chinese growth to remain firm (at around 7 to 8 percent) and with it oil consumption growth. RGE expects a sizeable slowdown after 2013 to below 6 percent, but even under this scenario we expect oil consumption growth to remain firm, easing only slightly. The slowdown in China will be driven by a sharp decline in government investment, as Beijing literally runs out of money to spend. Housing market investment restrictions (designed to dampen surging prices) will drive a decline in housing and land valuations, which local government revenues depend on and which are required to service debt.

China's local governments are highly leveraged and a decline in revenues will lead to defaults that require central government bailouts, which, in turn, will restrict Beijing's ability to invest in infrastructure and public works to boost growth in the way it had done through 2012. This lack of investment will bring down Chinese headline growth as its economy rebalances away from investment and toward consumption (by default). Importantly, although China will slow, oil consumption growth is more tightly coupled to consumption and manufacturing—through vehicle use and chemicals—than investment. Therefore, even in our most bearish of scenarios, we expect crude oil demand growth and the global crude oil supply-demand balance to tighten in 2014 relative to 2013.

Risks to Our View

Strong Chinese Demand Growth

Chinese demand growth surprised to the upside in Q4 2012 and into 2013 after disappointing in the summer. RGE expects Chinese growth to remain firm in H1 2013 before structurally declining toward year-end. Even as China slows down, RGE expects oil consumption growth to remain firm; although, at the margins, oil demand will weaken as manufacturing and industrial demand weakens. There is a risk that Chinese stimulus might defer a slowdown until 2014, boosting oil consumption. Even with Iranian crude removed from market, we believe the market could absorb stronger-than-expected Chinese crude oil demand (about another 0.1 to 0.2 mbd), but upside risk to crude oil prices would increase.

Strong Growth in Developed Countries

OECD demand growth could surprise to the upside, leading to elevated oil prices, especially if financial tail risks fail to materialize (through additional U.S. fiscal adjustments, a less fractious debt ceiling debate, less political risk in Europe, etc.).

Disappointing Supply Growth

Non-OPEC supply growth (outside the U.S.) may disappoint in line with historical precedent, in particular Brazil and Kazakhstan (expected to add 0.4 mbd to the mix due to new projects). Iraqi production rose by 0.3 mbd in 2012 to 2.95 mbd, but significant increases from here on in will be difficult to achieve given domestic political uncertainty. After falling from 0.5 mbd in 2011 to 0.1 mbd in 2012, IEA forecasts Sudanese crude to return to 0.2 mbd in 2013, also an uncertain prospect.

Supply Shocks

Supply shocks elsewhere represent an ongoing concern. The recent attack on the In Amenas gas facility in Algeria highlights the risk to crude oil supply in the Middle East and North Africa from persistent terrorist activity. An Algerian crude oil outage (low probability given the security of installations) would create distortions between crude oil benchmarks given that Algerian production is sweet and light in nature, whereas Saudi (replacement) oil is sour and heavy in nature (similar to that of Iran's). Multiple supply shocks would severely strain spare capacity and drive up oil prices. Syrian and Yemeni crude oil remains offline, while Nigerian and North Sea production habitually disappoint.

Tail Risks to Oil Demand and Prices in 2013 and 2014

A number of tail risks may resurface, particularly in the Eurozone, where a Greek exit and fears of contagion could damage risk appetite and drive down crude oil prices. In addition, China's slowdown could be more severe than expected, affecting auto sales. There is also the possibility of even greater oil supply coming on to the market, particularly in North America, concurrent with demand weakness.

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