
# Bipolar Oil Markets Torn Between Weakening Fundamentals and Rising Supply

Senate Committee on Energy and Natural Resources

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# Oil Markets Torn Between Weakening Fundamentals and Rising Supply Risk

- Tension between geopolitical risks to supply on the one hand and macroeconomic/financial risks emanating from the Eurozone on the other will remain a feature of the market through 2013 and will weigh against previously expected price softening.
- Forward-looking balances indicate that the acute market tightening experienced in 2011 is not likely to be in store for 2012, and we are believe that the opposite is far more likely. Amid softening oil demand, rising non-OPEC supply will prevent any growth in the Call on OPEC crude until 2013. Without a reduction in OPEC production by some members in order to offset the recovery in Libyan output, commercial inventories are likely to build .
- While significant downside risks to demand persist, the risks to supply will be driving market perception in 2012 and will offset the bearishness inherently embedded in the large projected stock builds over the next two quarters. Furthermore, a significant portion of the projected rise in global inventories will be located in China and India, where the streaming of new refining capacity will necessitate the building up of working inventory in the first half of the year. Both countries' crude imports are expected to accelerate sharply in the months ahead as a result.
- Our 2012 price forecast for Brent stands now at $111.25/b, with the last two quarters of the year being when we anticipate the greatest impact of anti-Iranian sanctions. WTI (Cushing) will average $10/b lower in 2012, a discount to Brent that reflects our belief that improving refinery complexity in the Midwest cuts demand for light sweet crude in the region. Even with the reversal of the Seaway pipeline and its planned expansion, the marginal barrel of US inland crude will still be shipped by rail through much of 2013, and possibly beyond if Bakken production continues to surprise expectations.

**PFC Energy Crude Oil Price Forecast**

| *$/barrel* | 1Q11 | 2Q11 | 3Q11 | 4Q11 | 1Q12 | 2Q12 | 3Q12 | 4Q12 | 2013 |
|---|---|---|---|---|---|---|---|---|---|
| **WTI** | $94.60 | $102.70 | $89.62 | $94.10 | $99.00 | $98.00 | $103.00 | $105.00 | $99.00 |
| **Brent** | $105.52 | $117.13 | $112.09 | $109.02 | $109.00 | $108.00 | $113.00 | $115.00 | $108.00 |

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# Global Oil Demand Is Slowing, But By How Much?

- With few exceptions, oil demand is expected to either contract or decelerate in most markets: overall, oil demand will effectively grow by 900,000 b/d at most even though our top line demand growth forecast show a higher number: this is due to the anticipated rebound in Libyan demand to near pre-civil war levels as well as the post-flood recovery in Thailand.
- Significant downside risks to demand still remain from the unresolved Eurozone debt crisis, but the chances of a world-wide recession have diminished due to stepped-up efforts by the European Central Bank to support the banking system.
- Virtually all of the growth in oil demand this year will be concentrated in three market regions: Emerging Asia, the Middle East and Latin America. As in the past decade, Emerging Asia will be the chief oil demand growth region, led by China and India. While world trade has dampened prospects for net exports of manufactured goods from China, economic growth spurred by monetary and fiscal easing will be supportive of higher fuel consumption.
- The Middle East – the second largest demand growth region – is also slated to see accelerated growth this year (rising another 250 mb/d compared to 2011's growth of 200 mb/d). The main driver is Saudi Arabia, where residential construction is leading to greater power use.
- The bulk of the near-term weakness is in Europe and the US: Europe is likely to see a decline of 200 mb/d in 2012 with the markets most heavily affected have been those that have undergone some degree of fiscal austerity (Greece, Spain, Portugal, Ireland and the United Kingdom) or have seen a sharp rise in their cost of borrowing (Italy).
- The United States will witness a small contraction in demand by about 90 mb/d for 2012, where tight household budgets have led motorists to cut back discretionary vehicle use and gasoline consumption. Meanwhile, middle distillate consumption remains supported by positive commercial activity.

**Total Final Demand Growth**

| *mb/d* | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|
| **Americas** | | | | |
| North America | 485 | -211 | -91 | -67 |
| *United States* | 411 | -225 | -86 | -60 |
| Latin America | 334 | 175 | 148 | 135 |
| *Brazil* | 234 | 102 | 73 | 84 |
| **Total Americas** | **819** | **-36** | **57** | **68** |
| **Europe & FSU** | | | | |
| OECD Europe | -74 | -222 | -198 | -81 |
| Other Europe | -25 | 7 | -4 | 1 |
| FSU | 283 | 167 | 60 | 74 |
| **Total Euro & FSU** | **184** | **-48** | **-142** | **-5** |
| **Asia-Pacific** | | | | |
| OECD Pacific | 130 | 65 | 13 | -311 |
| *Japan* | 59 | 39 | 51 | -279 |
| Non-OECD Asia | 1,132 | 802 | 829 | 807 |
| *China* | 765 | 610 | 421 | 536 |
| *India* | 147 | 136 | 126 | 139 |
| **Total Asia Pacific** | **1,262** | **866** | **843** | **497** |
| **Middle East/Africa** | | | | |
| Middle East | 266 | 196 | 253 | 300 |
| *Saudi Arabia* | 237 | 132 | 118 | 131 |
| Africa | 67 | -62 | 93 | 39 |
| **Total ME/Africa** | **333** | **135** | **347** | **339** |
| **World** | **2,598** | **917** | **1,104** | **898** |



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# Supply Rising in the West, Growth at Risk in Iraq

- Although non-OPEC supply growth (crude, gas liquids and biofuels) continued to disappoint in 2011, we expect gains to resume in 2012. Final 2011 data for all countries is still a few months away, but our current estimate is for a paltry increase of 0.1 mmb/d after a long list of outages spanning many countries.

- The year 2012 is forecasted to show a recovery in non-OPEC liquids growth and is led by these countries: the US, Canada, Colombia, Brazil and Russia.

- The United States will lead the growth in Liquids growth in 2012 led by a rise in oil shale output from the Bakken and the Eagle Ford shale. There are several other shale areas that are just starting to be drilled and if those prove as prolific then our forecast is likely to be raised. We have also penciled in an end to output losses in the Gulf of Mexico after the Macondo spill.

- An area of considerable uncertainty is gas liquids. Volumes have been growing rapidly as drillers turn to exploiting the wet gas parts of the many shale plays, especially the Marcellus. We saw that September gas liquids production reached 2,274 mb/d, roughly 73 mb/d above the all-time high of the prior August. This is far higher than what we estimated and may mean a material revision is in order if subsequent months hold to this level.

- A sizeable increase in 2012 liquids is due to the ramp-up to full capacity of Shell's 140 mb/d Pearl GTL project in Qatar. That facility will process 1.6 bcf/d of natural gas that will yield 120 mb/d of gas liquids accounting for nearly all of 2012's unusually large gain.

- Iraq's production levels will remain one of the key supply uncertainties over the next 18 months. Baghdad maintains an optimistic outlook on production growth, anticipating a 500-600 mb/d increase in output for 2012. In our view, the Iraqi government's forecasts are overly optimistic given deteriorating security conditions on the ground. We believe that . output increases are more likely to be in the 200-250 mmb/d range, with risks to this forecast weighted firmly on the downside.

**Total Non-OPEC Supply Growth**

| *mb/d* | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|
| **Non-OPEC Liquids** | **1,490** | **424** | **1,295** | **805** |
| *Crude* | *632* | *-182* | *565* | *218* |
| *NGLs** | *596* | *523* | *622* | *448* |
| *Biofuels* | *262* | *83* | *108* | *139* |
| **Non-OPEC Crude** | **632** | **-182** | **565** | **218** |
| **Americas** | **507** | **403** | **515** | **368** |
| *United States* | *188* | *174* | *179* | *106* |
| *Canada* | *172* | *124* | *146* | *170* |
| *Mexico* | *-26* | *-29* | *-56* | *-59* |
| *Brazil* | *98* | *51* | *166* | *125* |
| *Colombia* | *115* | *131* | *85* | *53* |
| **Europe & FSU** | **-58** | **-259** | **144** | **-43** |
| *North Sea* | *-287* | *-290* | *-15* | *-169* |
| *Russia* | *179* | *100* | *118* | *84* |
| *Kazakhstan* | *75* | *-14* | *-9* | *35* |
| *Azerbaijan* | *-7* | *-67* | *41* | *5* |
| **Asia Pacific** | **198** | **-222** | **42** | **-12** |
| *China* | *211* | *-3* | *57* | *46* |
| *India* | *69* | *22* | *-32* | *-26* |
| **Middle East/Africa** | **-14** | **-104** | **-136** | **-96** |
| *Oman* | *46* | *25* | *28* | *0* |
| *Ghana* | *1* | *76* | *23* | *33* |
| **OPEC Gas Liquids** | **417** | **357** | **472** | **357** |
| *Saudi Arabia* | *65* | *42* | *44* | *79* |
| *Qatar* | *190* | *176* | *103* | *84* |
| *UAE* | *32* | *179* | *78* | *28* |
| *Iran* | *33* | *7* | *9* | *45* |
| *Nigeria* | *81* | *4* | *27* | *6* |
| *Algeria* | *-14* | *7* | *39* | *33* |

*(*) Includes OPEC non-quota constrained NGLs and gas condensates*



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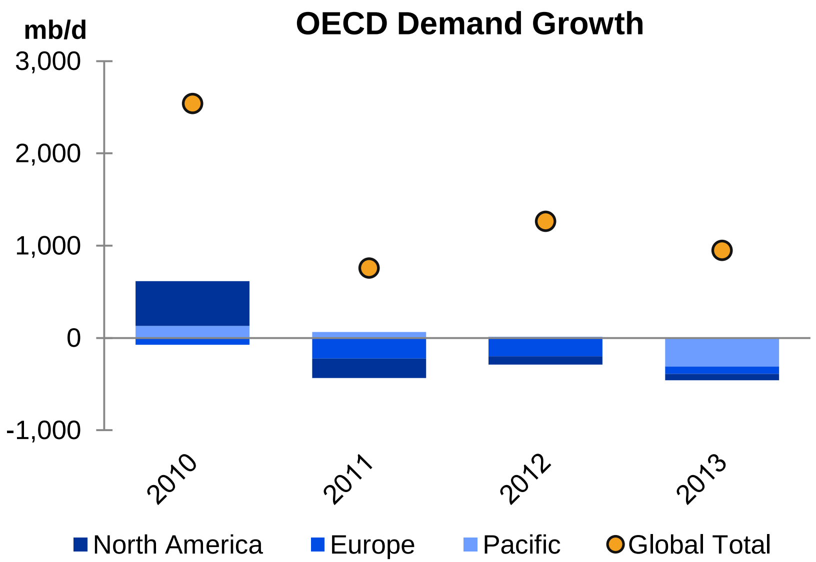
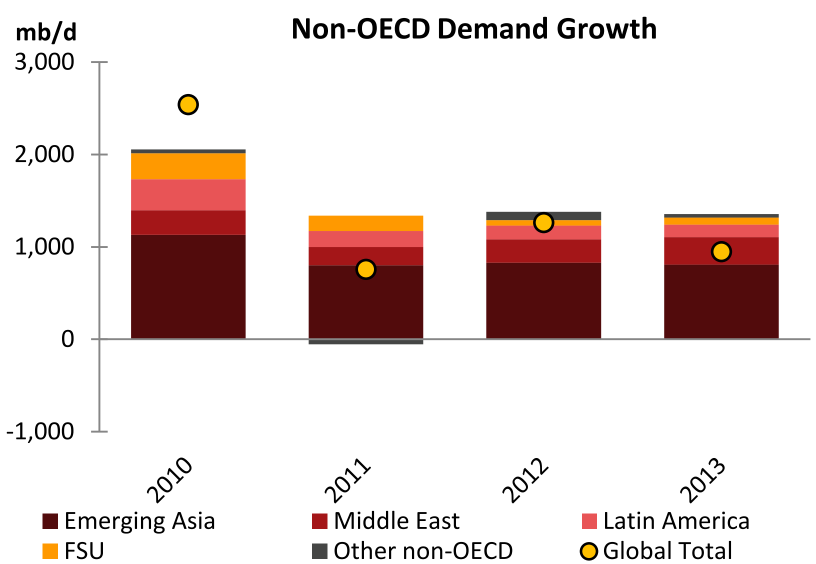
# A Weak Economy Will Drag on Oil Demand

- Global oil demand growth is forecast to rise 1.1 mmb/d in 2012 when accounting for 0.2 mmb/d of growth resulting from year-on-year base effects due to the return of Libyan demand to pre-civil war levels as well as post-flood recovery in Thailand.
- In effect, oil demand is slowing down from 2011 levels, and we expected to the growth delta to remain sub-one million b/d in 2013.
- Demand in the advanced economies will continue to be challenged by macroeconomic headwinds, with a mild recession expected for Europe.
- Japanese crude burning is forecast to continue offsetting underlying structural declines in OECD Pacific through 2012. In 2013, new gas-fired generating capacity will push liquids out of the fuel stack.
- As international trade cools, key emerging markets will also be affected, especially in Emerging Asia and Latin America.
- Non-OECD demand will nevertheless remain the key growth driver, offsetting recession-related and structural declines in OECD demand. Growth remains concentrated in China and the Middle East.



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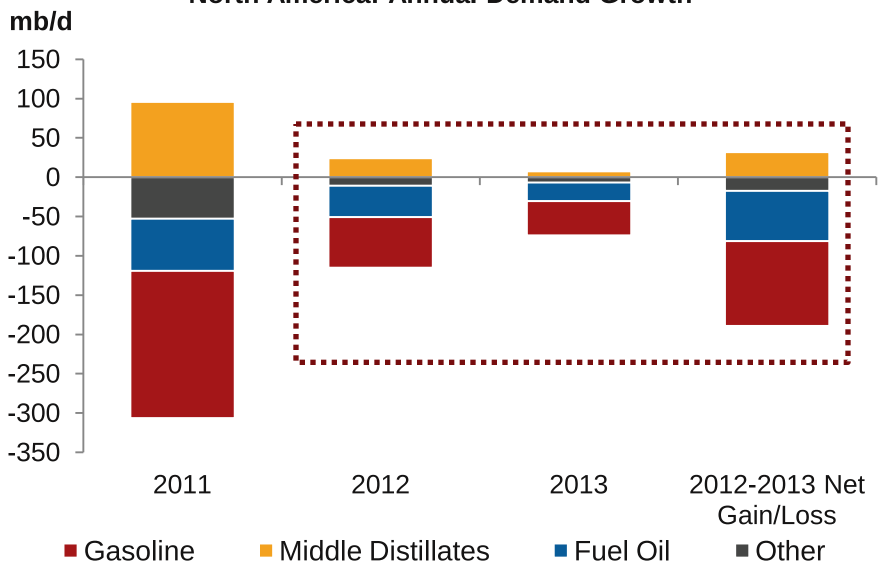
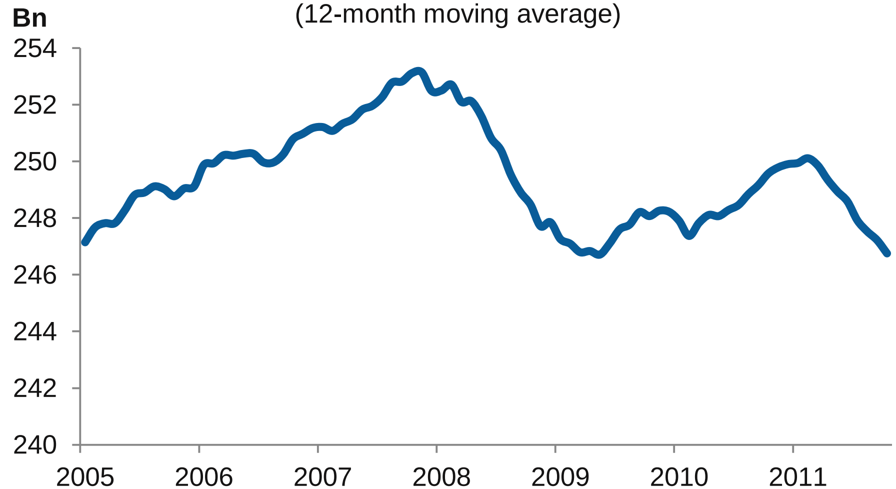
# In North America, Heightened Price Sensitivity Will Dampen Oil Demand Growth

- The brighter US economic outlook is not expected to support oil demand growth in 2012-13.
- Structural declines in residential heating oil, fuel oil and other products demand are expected to outweigh gains in diesel and jet fuel.
- Gasoline consumption will remain under pressure from tight household balance sheets and high gasoline prices, as seen in 2011 with the collapse in discretionary vehicle use.
- The main reason for lower vehicle miles traveled in the United States in 2011 was the sharp increase in retail gasoline prices (reaching $4/gallon) early into the US driving season. This will be repeated this year, and prices will continue to dampen demand.
- Although notable efficiency gains are being made, price elasticity is still expected to play greater roll in reducing near-term demand prospects.
- Given inadequate pipeline capacity from the US Gulf Coast, further reductions in refining capacity planned for the East Coast will tighten regional balances and lead to higher gasoline prices during the peak demand periods of 2012-2013.
- As a result, total final oil demand growth in North America is expected to contract 90 mb/d in 2012 and another 70 mb/d in 2013. Risks are on the downside, with prices potentially impacting demand further.

North America: Annual Demand Growth




United States: Total Vehicle Miles Traveled
(12-month moving average)



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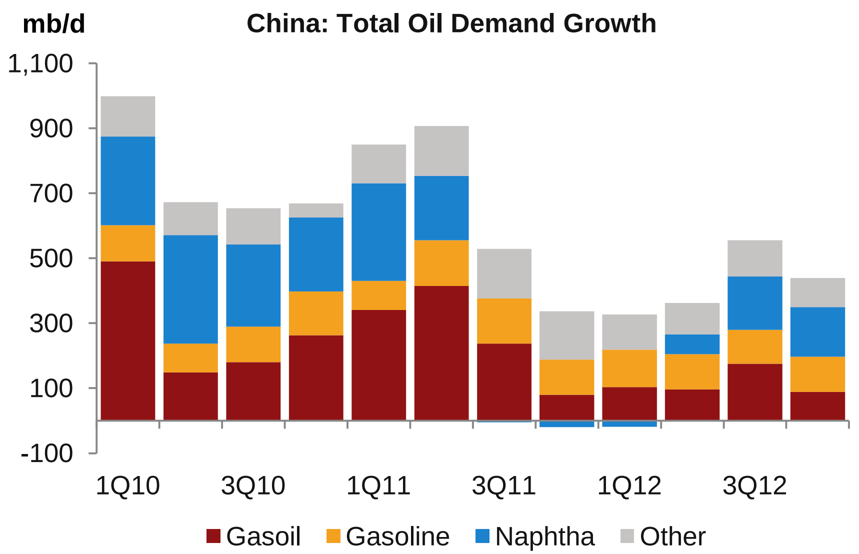
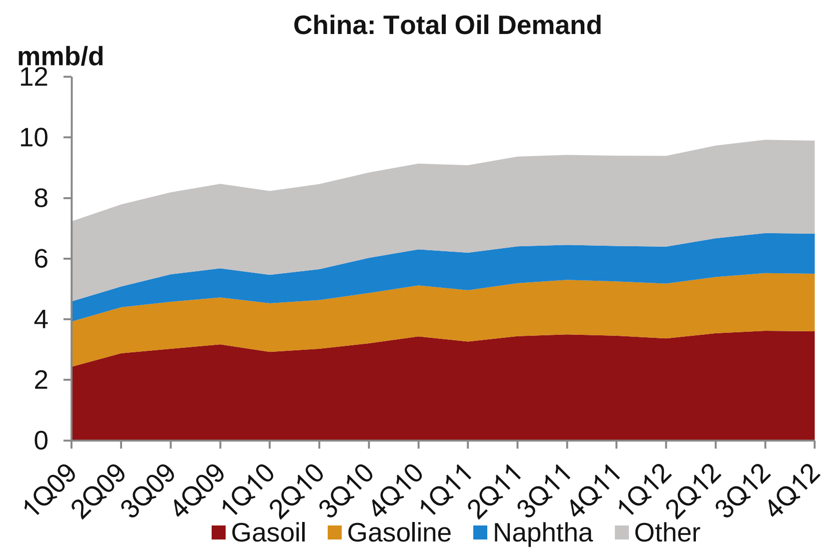
# In China, Final Demand Growth Should Slow through 2013

- Slower naphtha and gasoil demand growth together with base effects weighed on year-on-year product demand growth in 4Q11 and will continue to depress the first two quarters of 2012.

- But growth should speed up in the second half of 2012 on expected stimulus measures, bringing annual product demand growth to 420 mb/d, a sharp drop from the 610 mb/d seen in 2011.

- The longer term effect of the stimulus measures and a ramp up in domestic petrochemical production capacity (which will find a market by backing out imports) will carry total product growth momentum into 2013. Annual demand growth then is expected to average 540 mb/d.



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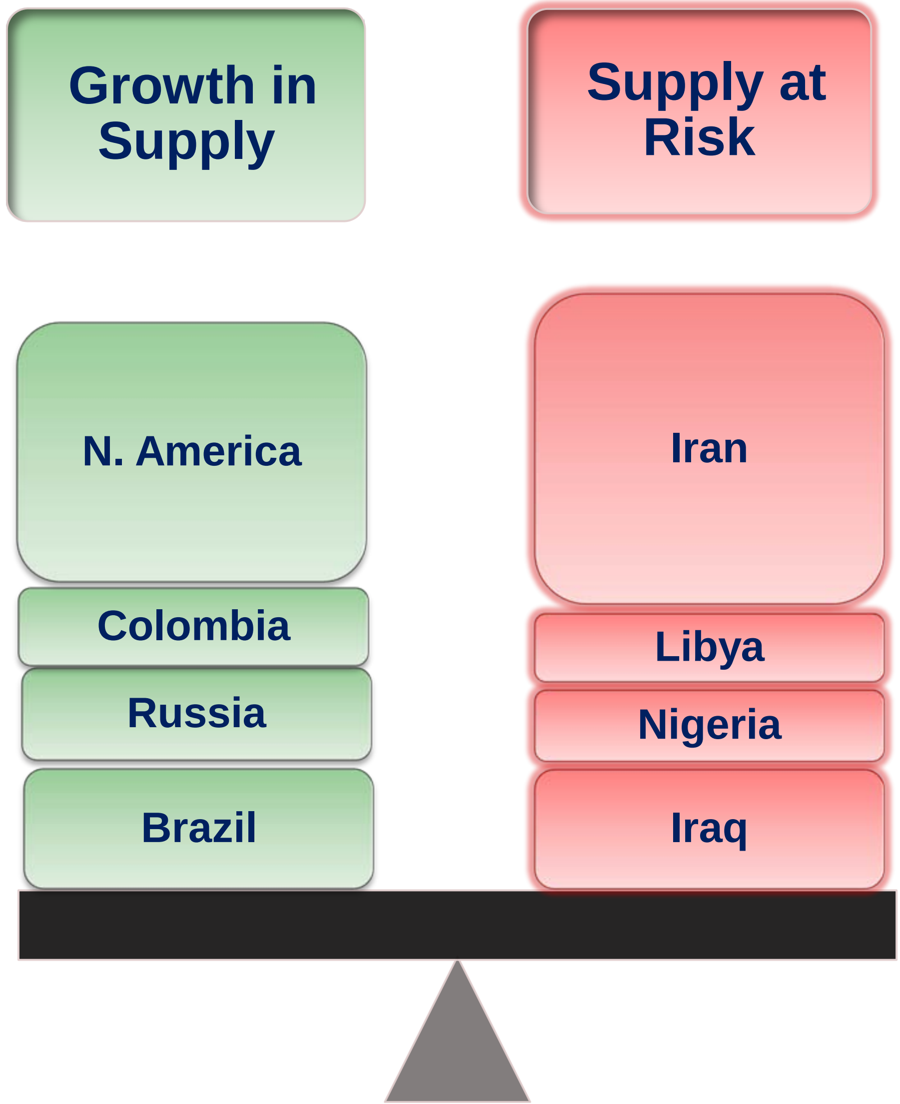
# Heightened Geopolitical Tensions Put Significant Production at Risk



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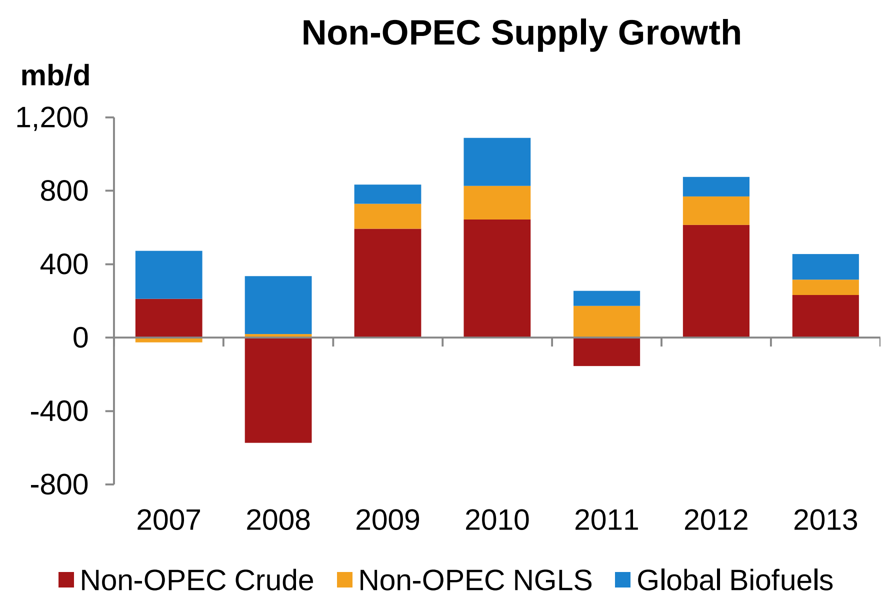
# Non-OPEC Bolsters Supply Growth

- Gains in non-OPEC supplies last year came in below expectations due to numerous outages as well as delayed project development. The outlook for 2012 and 2013, however, will show marked improvement, posting gains of 0.8 mmb/d and 0.4 mmb/d respectively.
- The year 2012 is forecasted to show a recovery in non-OPEC liquids growth and is led by these countries:  the United States, Canada, Colombia, Brazil and Russia.  Clearly, our forecast is largely a Western hemisphere story.
- Rapid development of unconventional shale plays in the United States are also yielding high liquids content and may exceed our current forecast
- GLs and condensates will see steady growth as natural gas production expands in the FSU, Asia-Pacific and MENA.
- Partially offsetting these gains will be a deceleration in global biofuels growth.
- Ethanol output will moderate as the United States approaches maximum blend levels for conventional motor gasoline (not helped by the structural decline in demand for the fuel).
- Brazil ethanol growth recedes from poor sugar harvests and lagging investment in distilleries.



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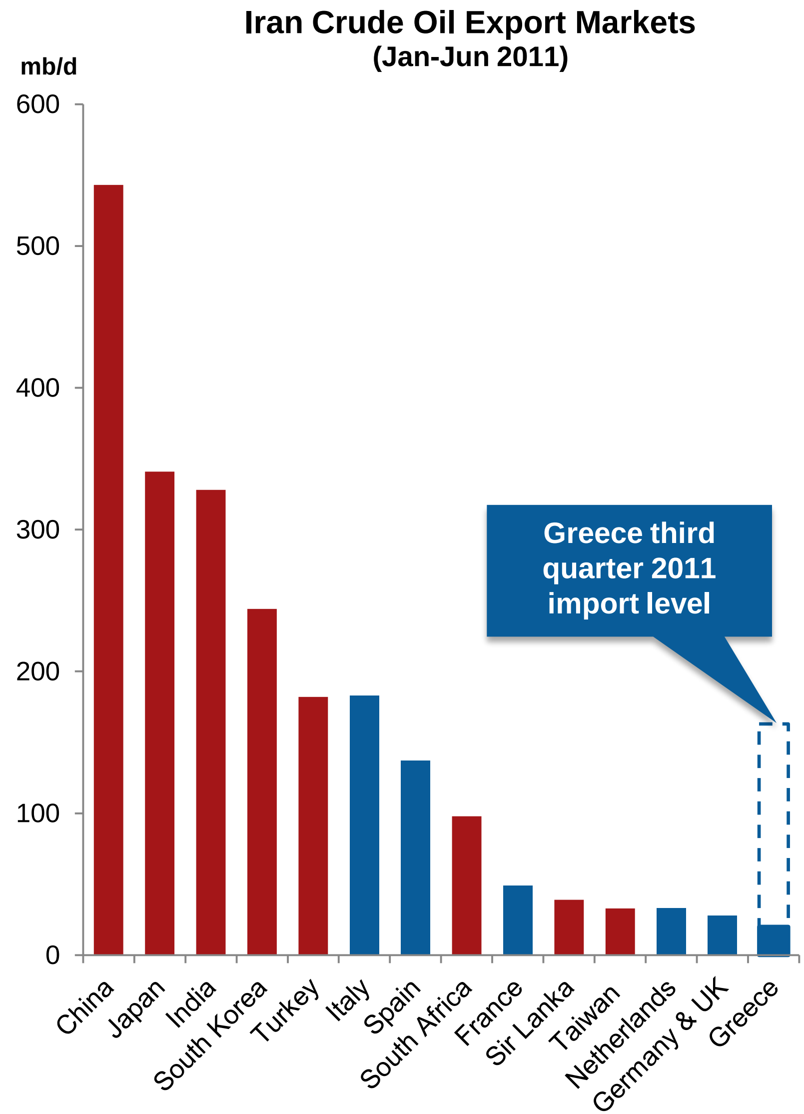
# European Embargo Would Cause Dislocations within Oil Markets

- Iran's crude oil exports averaged 2.2 mmb/d in 2011.
- EU embargo has been agreed in principle but details are yet to be worked out. Any implementation would not occur immediately.
- Complete EU embargo would require Iran to find replacement market for about 600 mb/d.
  - Italy is asking for an exception so ENI can continue to receive in kind payments for work performed in Iran.
  - Greece, cut off from normal credit markets, has greatly increased its intake of Iranian crude in recent months. Locating and financing replacement supplies presents a major financial issue for the country, despite reports it will comply.
- India, South Korea and Turkey have increased imports this year as they are less wedded to strict sanction regimes.
  - Supplies will continue but will make the case to the US that efforts have been made to reduce the volume or to find alternate crudes.
- Streaming of new refineries in India and China will see their demand for imports grow by around 600 mb/d so an EU-only embargo could be managed.
- Expecting other Middle East producers to fill void while surrendering market share allowing Iran to sell barrels into Asia – is likely unreasonable.



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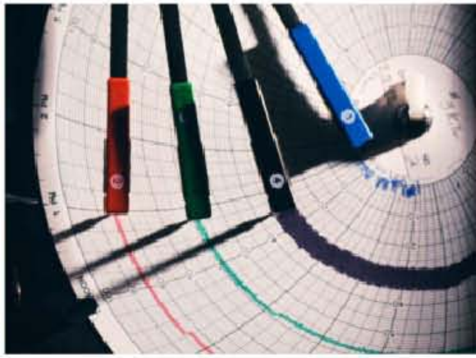


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