

## Session Four: Global Energy Markets 2010-2015

4 Nov 2009

**APPEC - Bunker Asia 2009**

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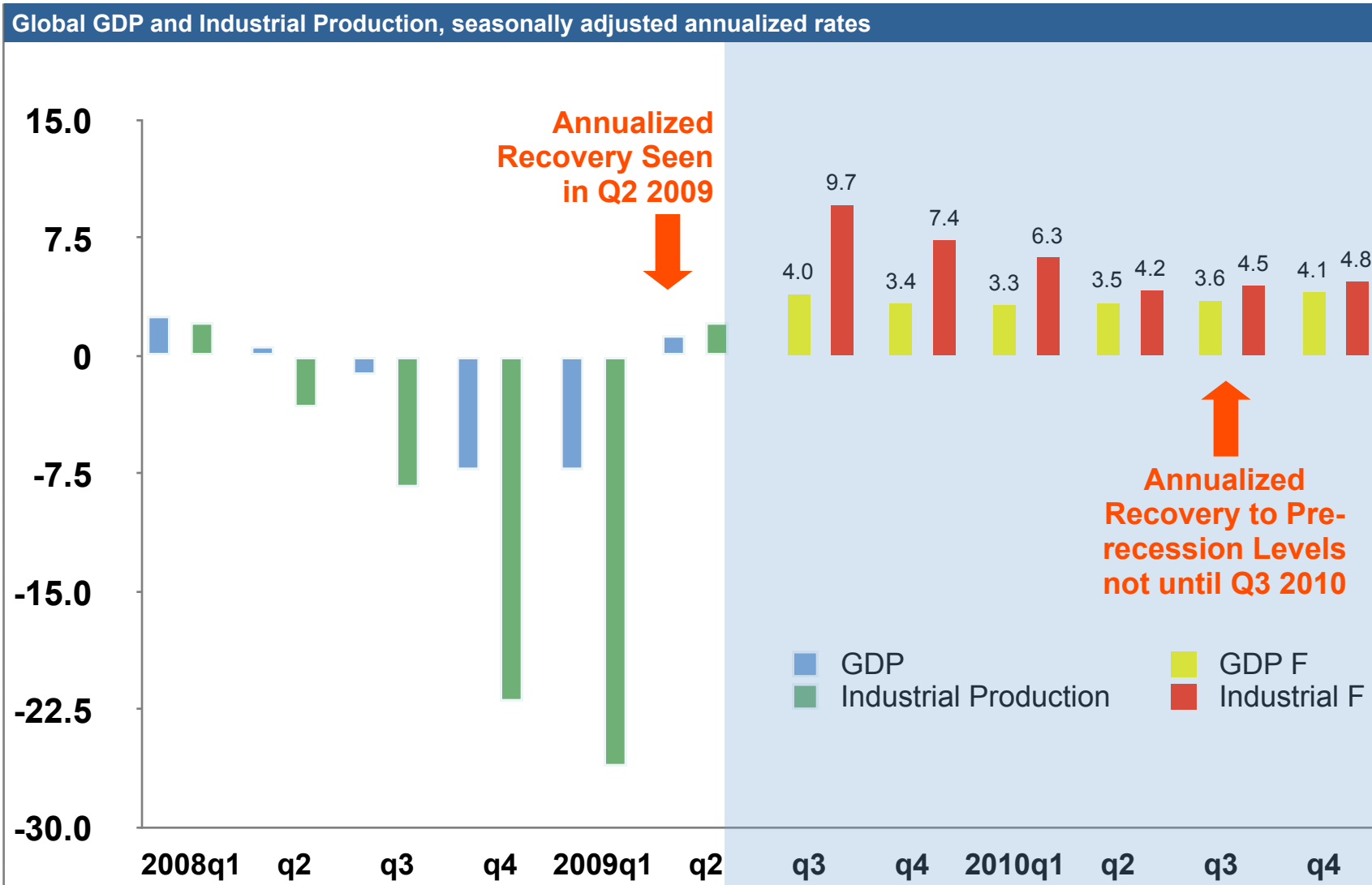
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# Introduction

## Agenda and Considerations

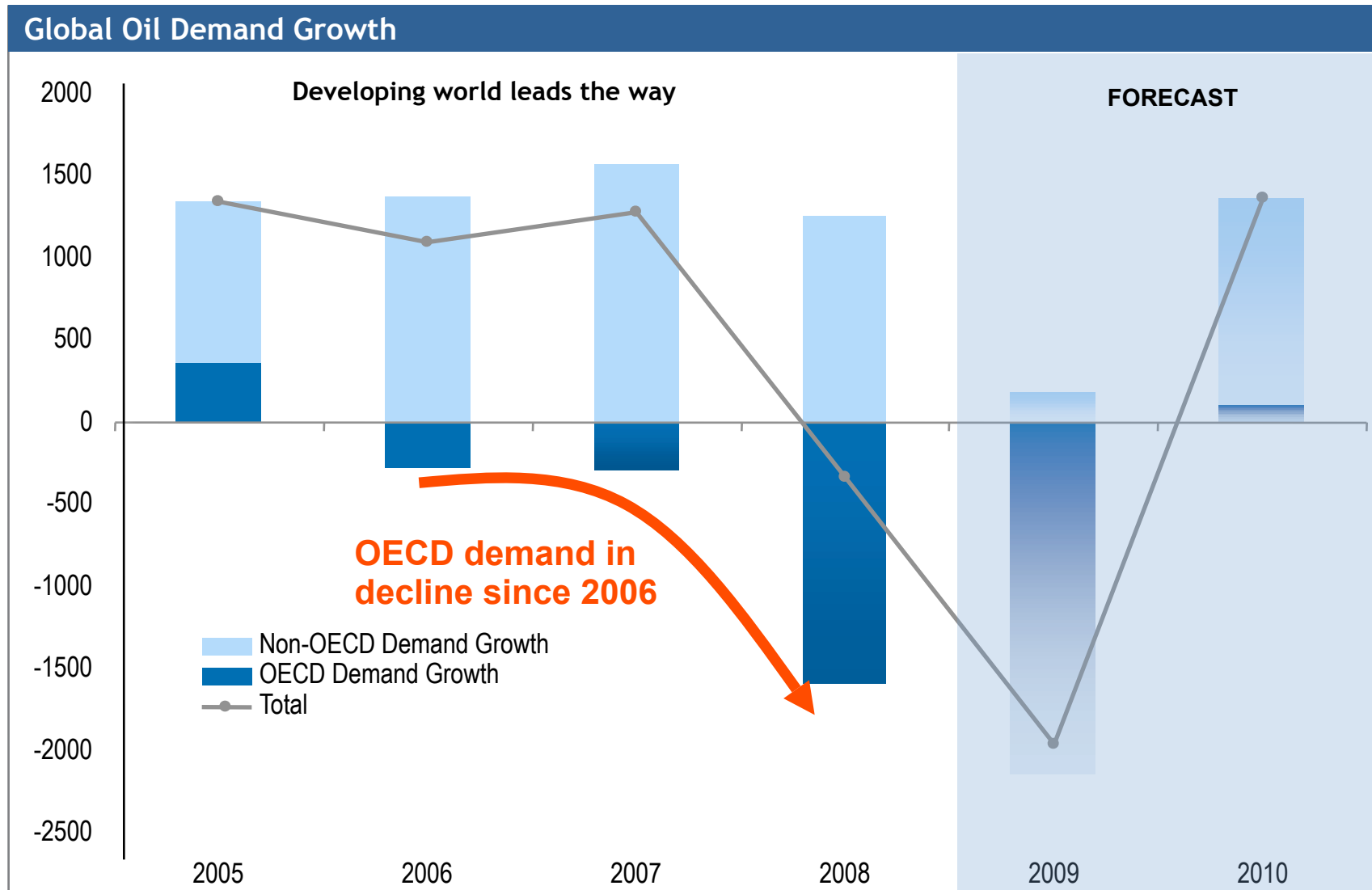
- **State of the Economy**
  - **Depth of recession and speed of recovery**
  - **Impact on immediate oil demand**
- **Short-term Oil Market Conditions**
  - **Inventory status**
- **Oil Forecasts**
  - **J.P.Morgan Forecast and the view on the street!**
  - **Forwards – what do the producers say!**
- **Longer-term Oil Market Drivers**
  - **Forecast demand growth, China and beyond!**
- **Impact on Fuel Oil and Bunker Fuel**
  - **Refinery Supply and increasingly stringent sulfur regulations**

# JPMorgan global GDP and industrial production forecasts...It's a "V"



Source: JPMorgan Global Commodity Research

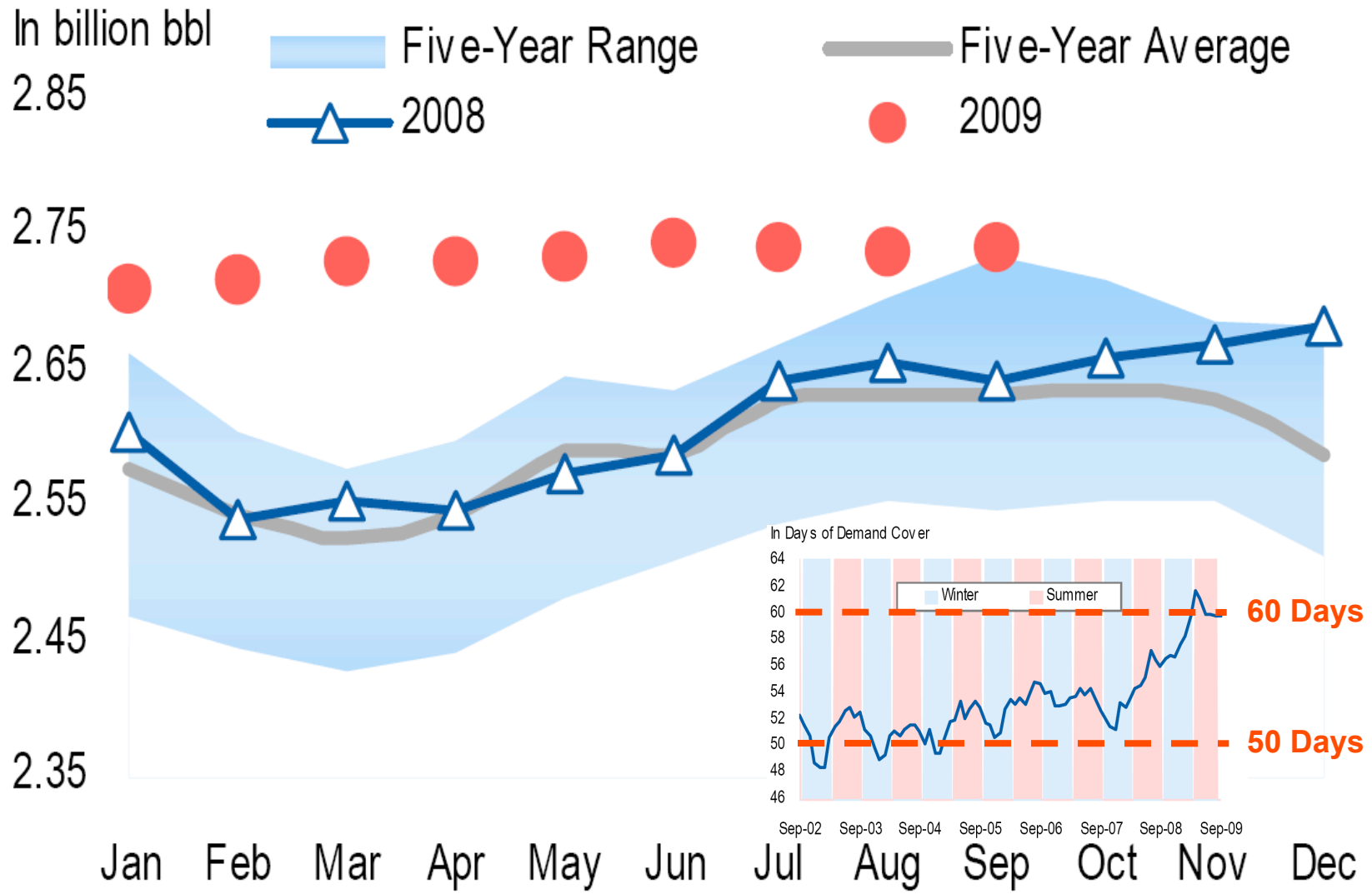
# Developing world leads the way - but recession has given us a breather!



Source: JPMorgan Energy Strategy, IEA, JODI

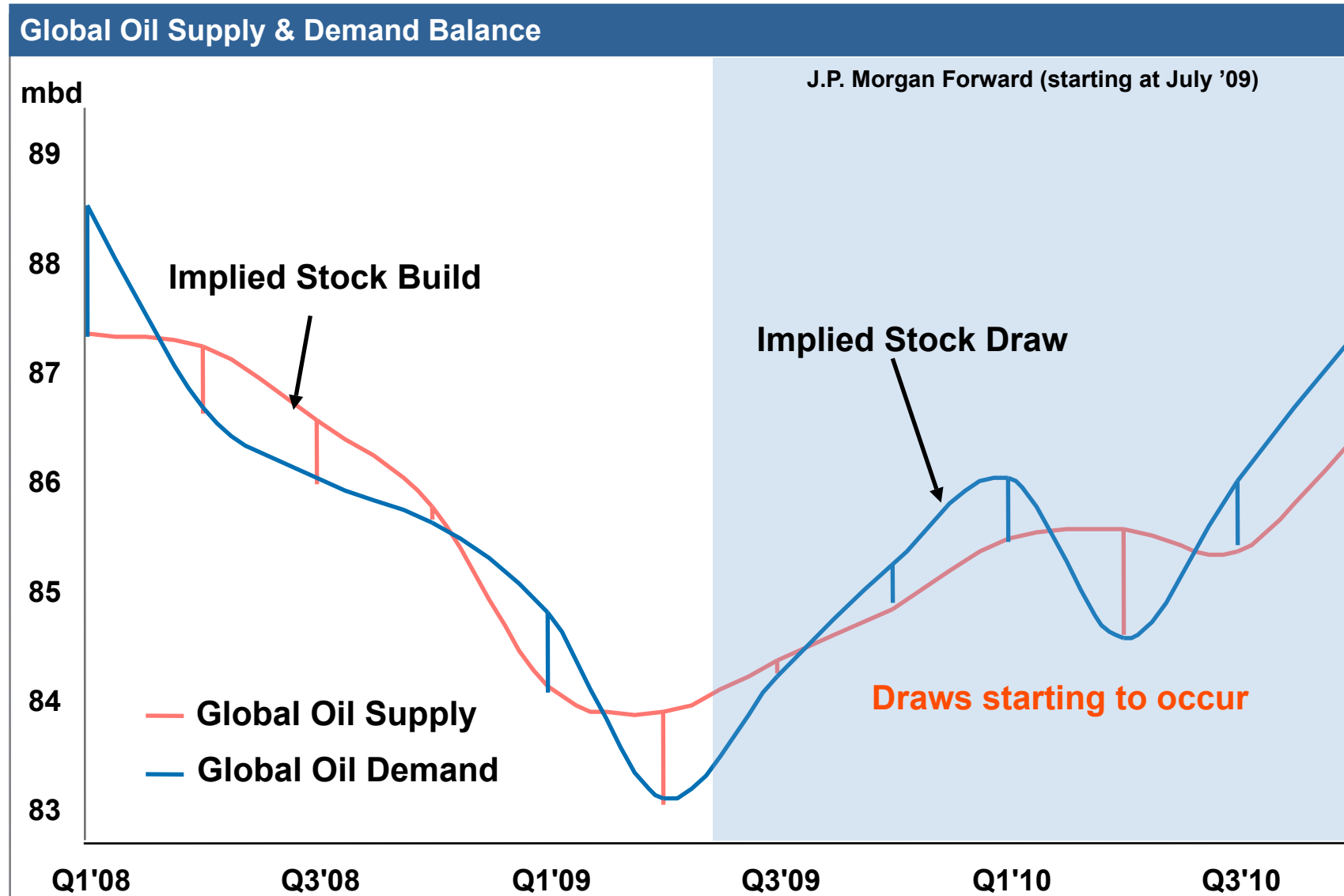
# Stocks are high and will take some time to work down...

Total OECD Commercial Inventories (also Expressed in Days of Demand Cover)



Source: JPMorgan Energy Strategy, IEA, government and industry sources.

# Demand rebounds in recovery, but supplies likely to improve



Source: JPMorgan Energy Strategy, IEA, government and industry sources.

# J.P.Morgan crude oil price forecast

## Detailed JPMorgan Crude Oil Price Forecast

\$/bbl	2008	3Q09	4Q09	2009	1Q10	2Q10	3Q10	4Q10	2010
<b>Current WTI Forecast</b>	-	68.00	70.00	60.28	70.00	65.00	70.00	70.00	68.75
Previous Forecast	-	68.00	65.00	59.03	65.00	65.00	70.00	70.00	67.50
Actual To Date	99.75	68.31	-	-	-	-	-	-	-
<b>Brent Forecast</b>	-	70.00	72.00	61.91	72.00	67.00	71.00	70.00	70.00
Brent Actual To Date	98.52	69.13	-	-	-	-	-	-	-

Source: J.P. Morgan Research



### Risks for the downside

- Smaller projected deficits leading to stock overhang persisting to the end of 2010
- Russia's supply growth has potential to post growth both in 2009 and 2010
- US demand growth still tepid



### Risks for the upside

- Global economic recovery
- Lower biofuels supplies
- Decline rates in crude producing areas could be more aggressive than the benchmark agencies predict

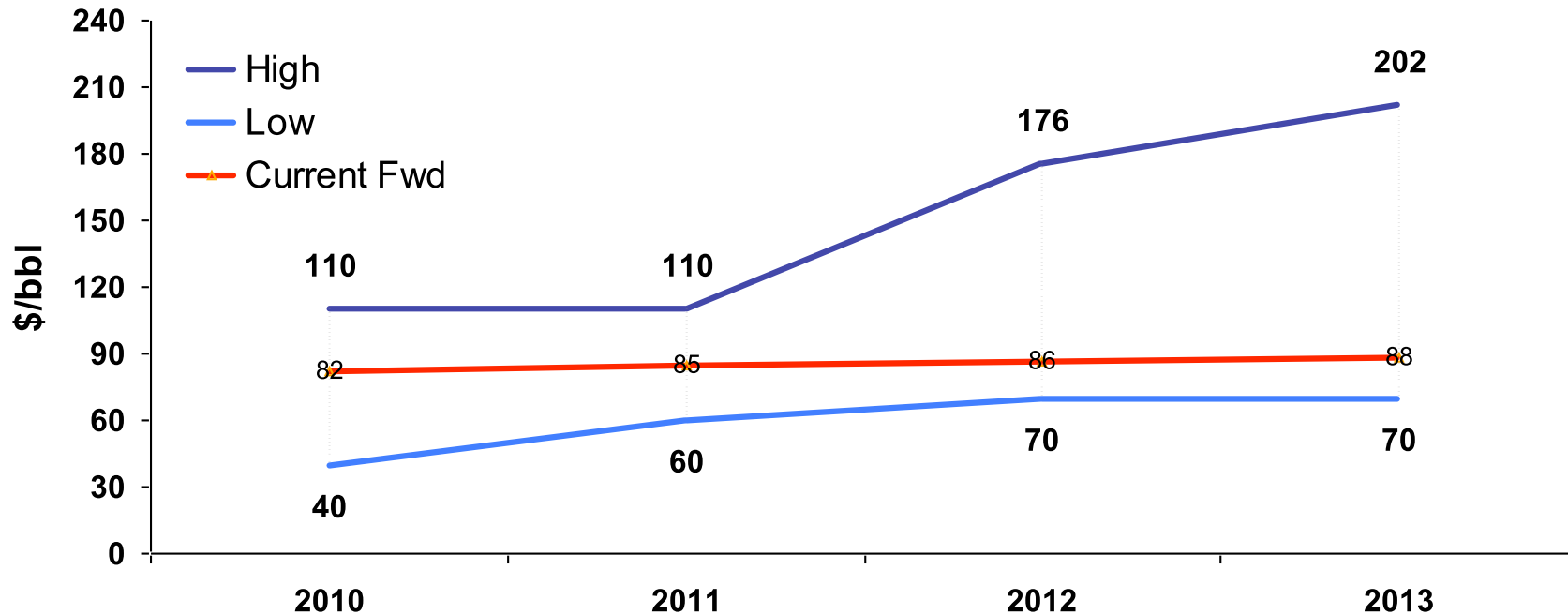
# View on the street - Bank analysts' crude oil forecast consensus

47 different bank analysts gave their predictions about WTI forward prices

		2010	2011	2012	2013
<b>Current Price</b> 78.31	<b>Bloomberg Wgt Avg</b>	75.63	87.14	98.68	100.40
	<b>High</b>	110.00	110.00	176.00	202.00
	<b>Low</b>	40.00	60.00	70.00	70.00
	<b>Current Fwd</b>	82.13	84.70	86.32	87.96

Source: Bloomberg

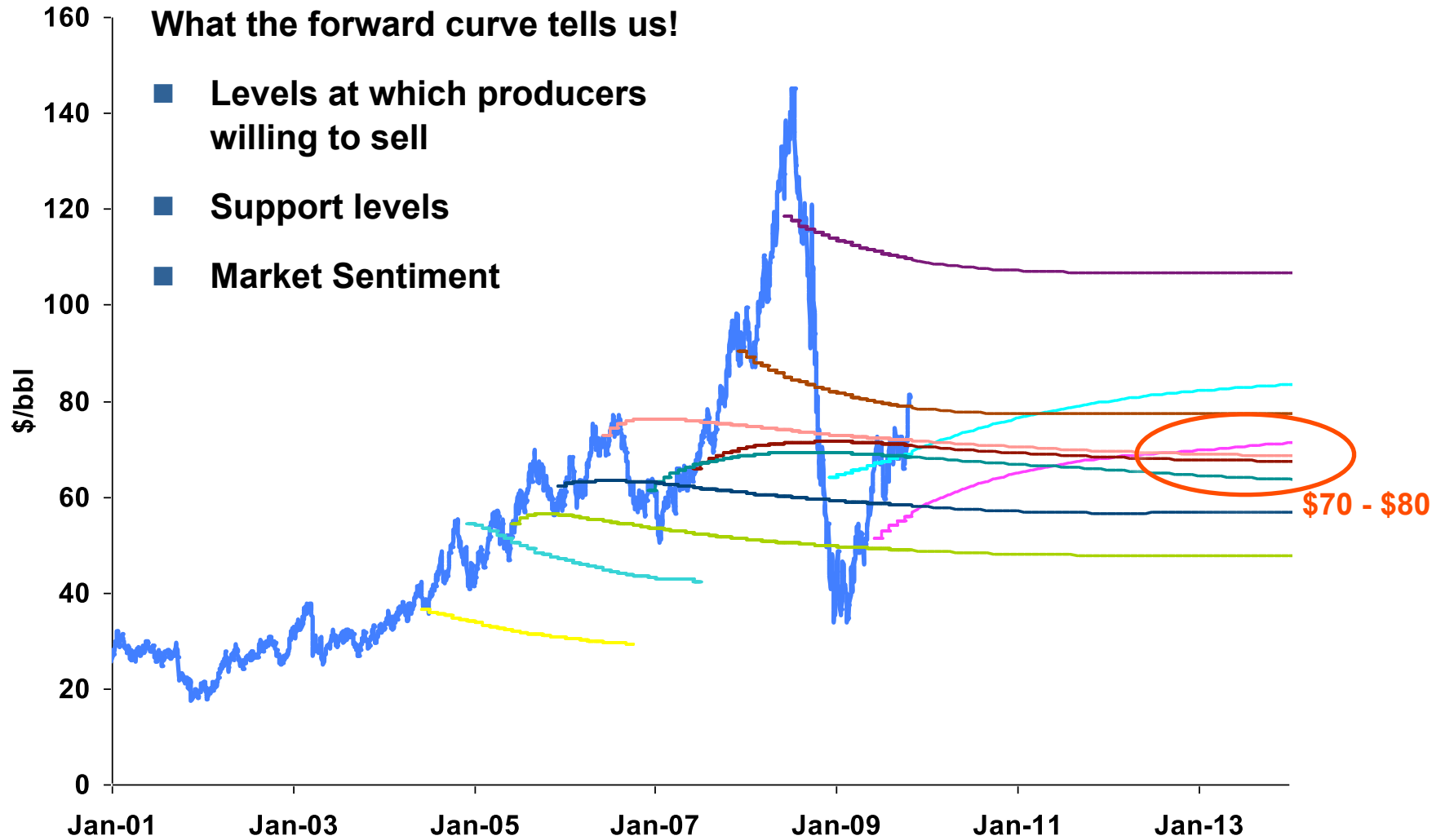
WTI Forecast Trend Among 47 Analysts 2010-2013



Source: Bloomberg

# Market has moved into Contango, increase levels of support \$70-\$80

Historical movements in the price of WTI and WTI forward curve over the past 5 years

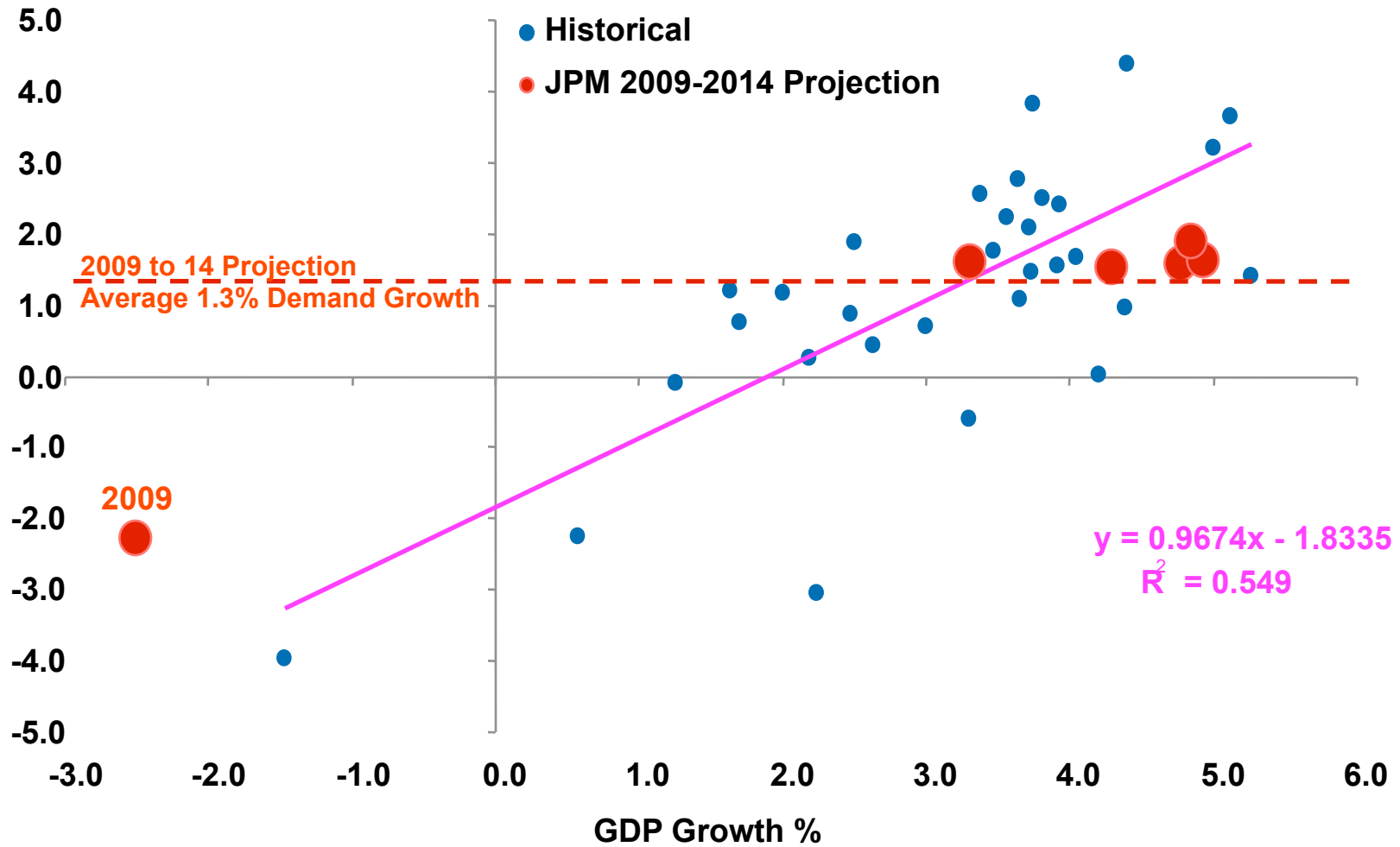


Source: JPMorgan Internal Athena Data

# GDP Models signal return to growth, but below trend

Global GDP Growth vs.. Global Oil Demand Growth, 1977-2010

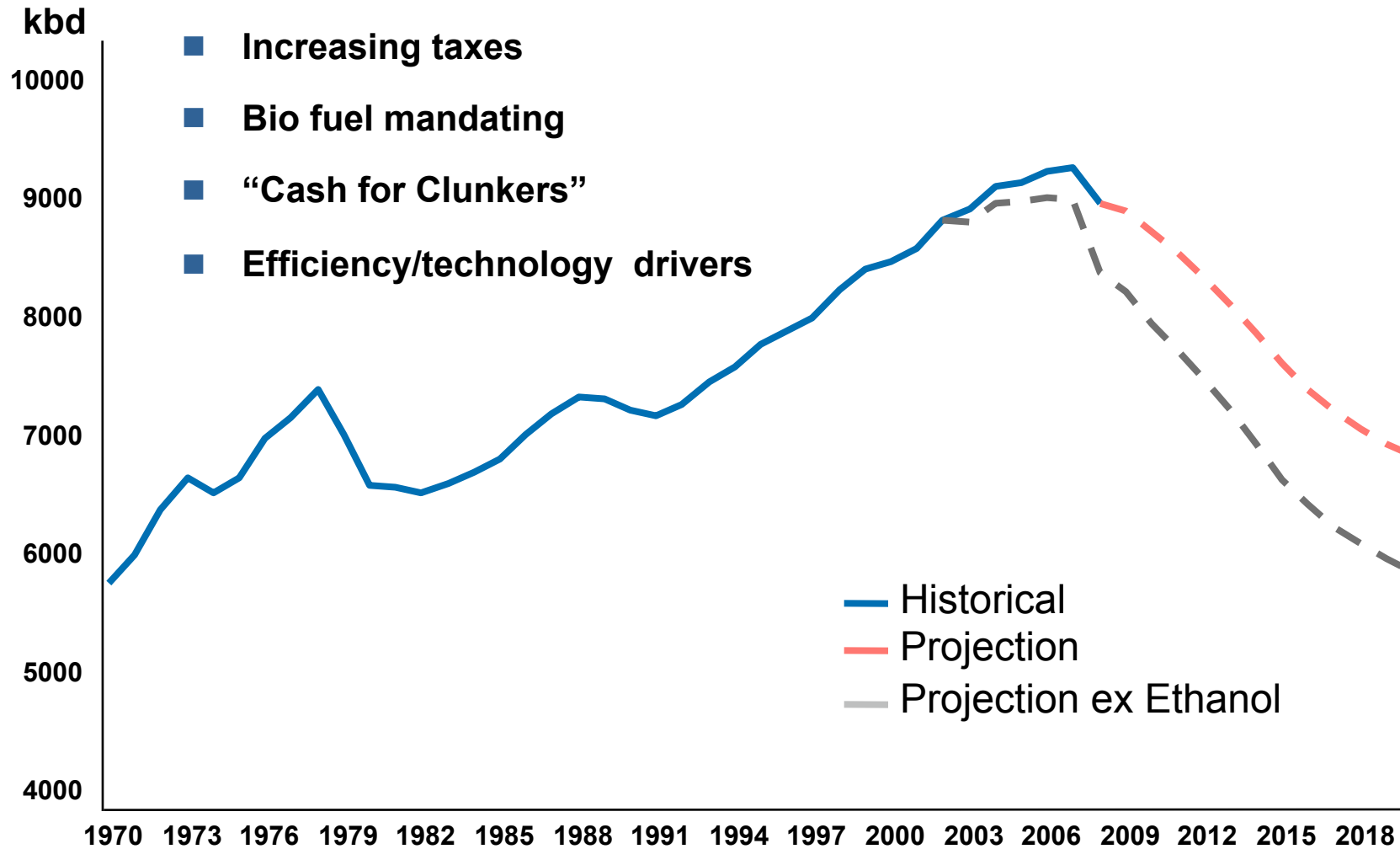
Demand Growth %



Source: JPMorgan Energy Strategy, JPM Economics, IEA

# Policy and price are a powerful force for fuel efficiency

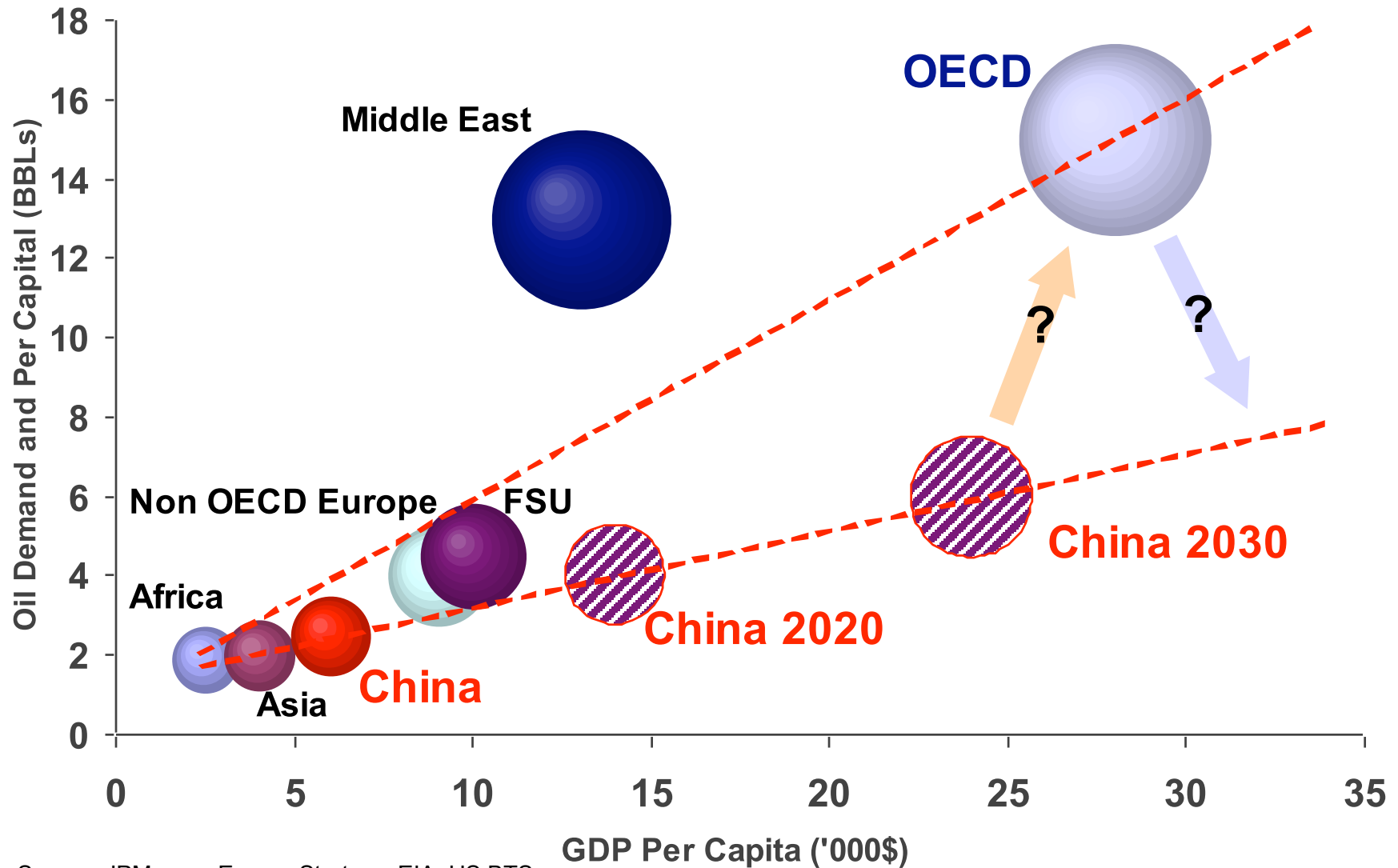
## US Gasoline Demand Forecasts



Source: JPMorgan Energy Strategy, EIA, US BTS

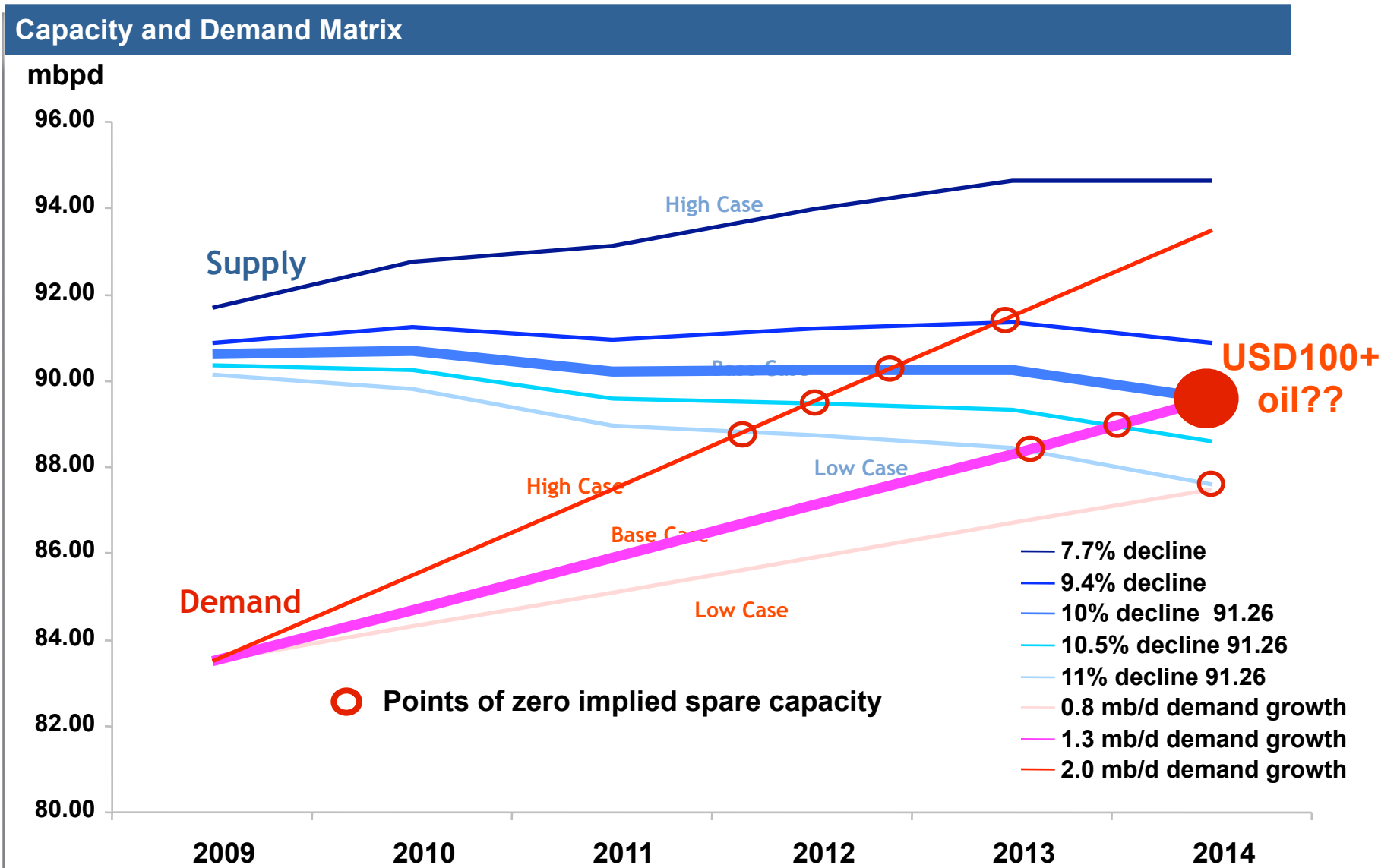
# And the demand side looks relentless.....

Oil Demand and GDP Per Capita Relationships – China moves up or OECD moves down?



Source: JPMorgan Energy Strategy, EIA, US BTS

# Tightness again in 4-5 years, but market will ration supply



**Case for Non-conventional, Coal, NatGas, LNG is strong!**

Source: J.P. Morgan Energy Strategy

# Fuel Oil Fundamental Price Drivers

## Supply Factors

- Refinery Runs
  - Turnarounds
  - Refining margins
- Crude slate
  - Lighter crude yield lower fuel oil
- Secondary Capacity to Crack FO
  - Increasing investments in secondary capacity
  - Increasing yield of lighter products and decreasing fuel oil yield
- Inventory



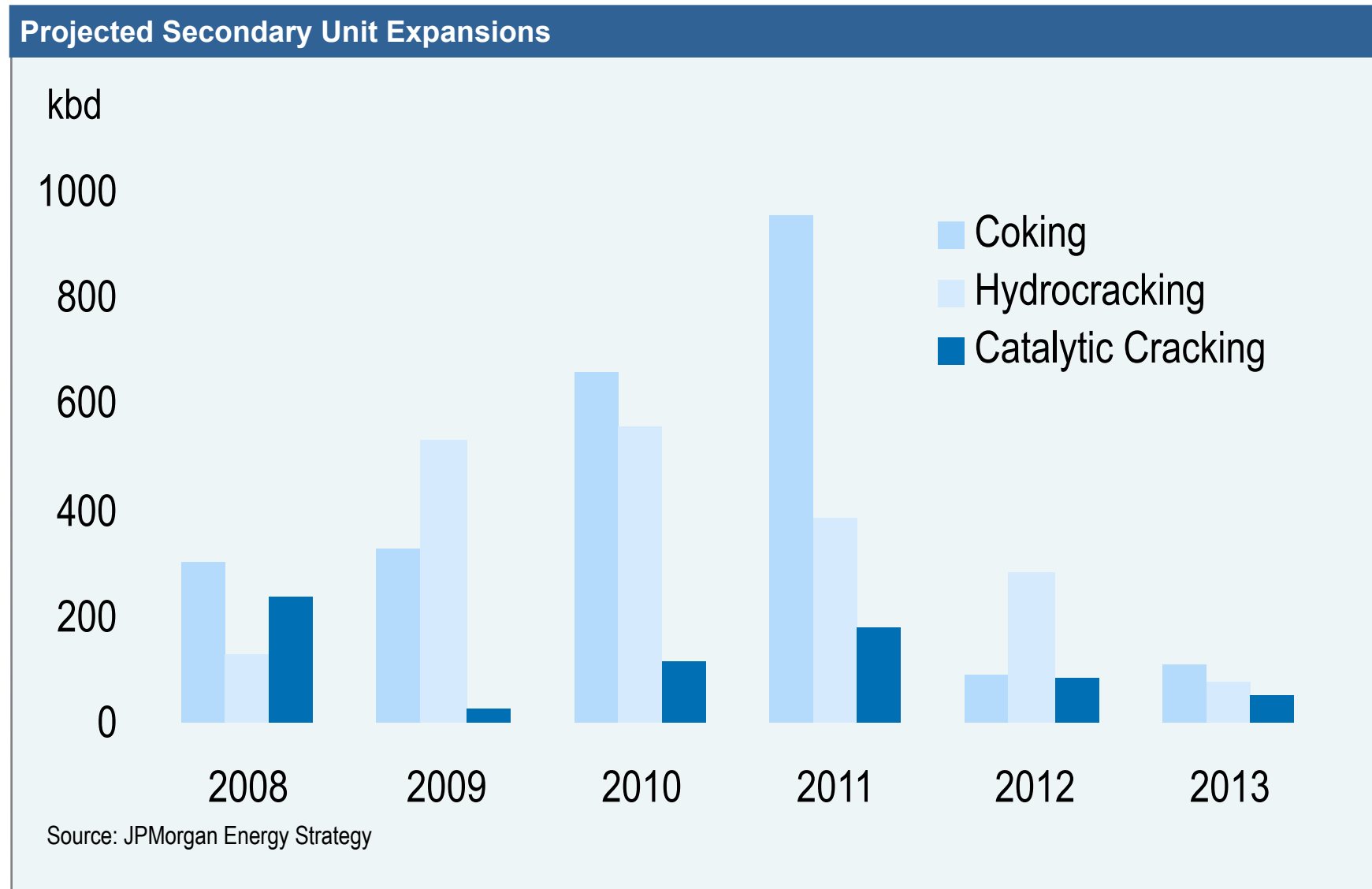
## Demand Factors

- Bunkers
  - World Trade - 90% of the world's goods are transported by sea
- Power Demand
  - Trend is for decreasing consumption of fuel oil as feedstock
- Chinese tea-pot refiners
- Emissions Regulation



**COMBINED STRUCTURAL BULLISH AND BEARISH CHANGES  
LEAD TO BUNKER SWITCHING FROM FUEL OIL TO DISTILLATE**

## Expansions - Lighten output at the expense of residual fuels!



# Future regulations for shipping will tighten LSFO, distillate markets

## IMO Sulfur Regulation Schedule

### Emission Control Areas

Month	Year	Sulfur Change	Predicted Impact
January	2012	1.5% to 1.0%	Tighter Hi-Lo spreads
January	2015	1.0% to 0.1%	Tighter Gasoil-LSFO spreads

### Global

Month	Year	Change	Impact?
January	2012	4.5% to 3.5%	None
January	2020	3.5% to 0.5%	Wider Gasoil-HSFO

Source: J.P.Morgan Energy Strategy, IMO

### ■ Emissions Control Areas

- Will affect areas already designated Emission Control Areas – the Baltic Sea, the North Sea and the English Channel.
- Emissions Control Areas may eventually expand to include North America and all of Europe, which would increase the impact of sulfur changes. Changes expected in 2015 would likely be bullish for LSFO as well as support distillates as higher quality fuels would be needed for blending.

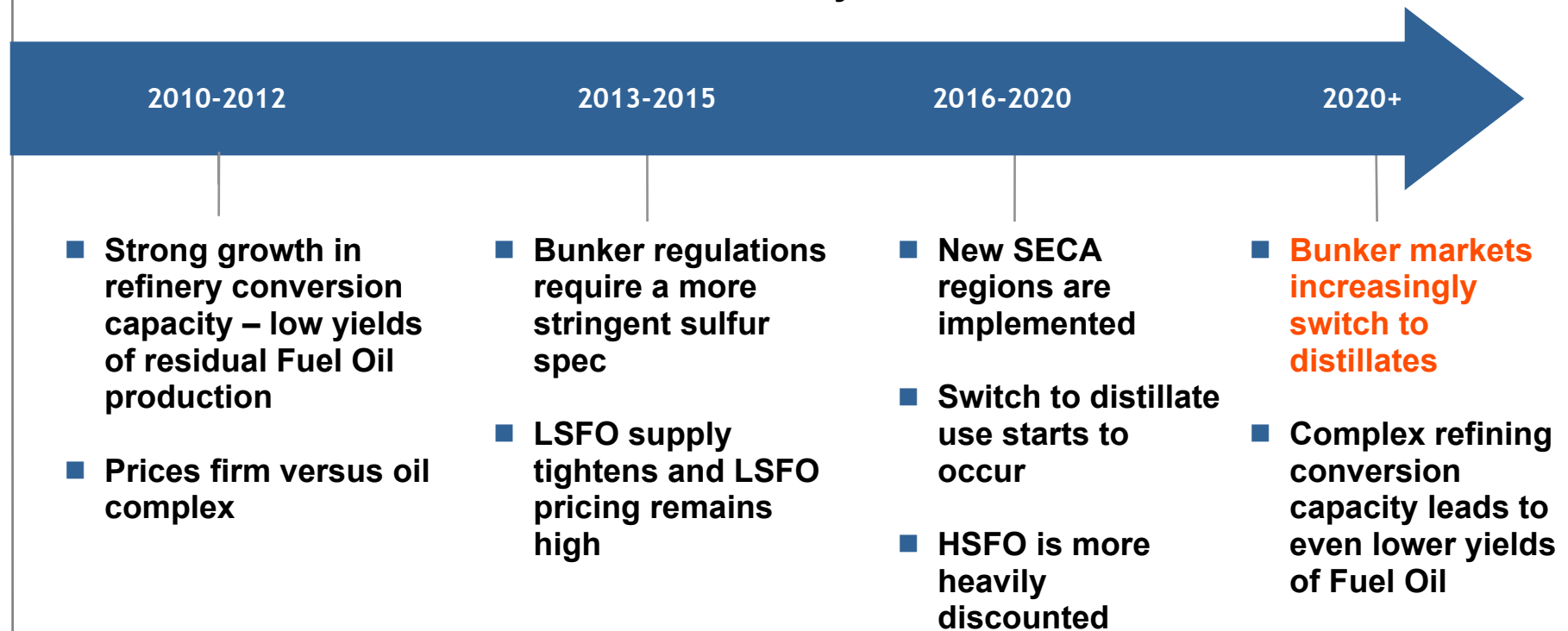
### ■ Global Regulations

- Will reduce sulfur limits from 4.5% to 3.5%. Most product already at or below 3.5% so should have little impact.
- The changes scheduled for 2020 would require majority distillate content for bunkers

# Long Term Outlook for the Fuel Oil Market - Switch to Distillates

## Projected Secondary Unit Expansions

- Fuel oil market remain well supported due to new upgrading capacities
- Low Sulfur Fuel Oil will trade at a higher premium due to emerging shipping regulations (strong sulfur premium emergence)
- Market adjusts (technology) and sulfur restrictions increasing driver the bunker market to switch to distillates for efficiency reasons



**REDUCED PRODUCTION AND INCREASED QUALITY REQUIREMENTS DRIVE STRUCTURAL MARKET CHANGE FROM FUEL OIL TO DISTILLATES**

## Take a breather but tightness on the horizon!!

### Conclusions

- The world is coming out of a recession, initial signs are oil demand recovery is lagging economy growth – given us a breather from the late 2007/2008 oil market bull run!
- Fundamentals still strong in the long term for oil – tightness predicated for 2013/14 – tempered by non-conventional supply, by demand rationing (possibly by PRICE), increasing consumption efficiency and general waning OECD demand
- Strong growth in refinery conversion capacity leads to structural decline in fuel oil supply, prices move to the ceiling condition close to oil parity.
- Key shift away from residual oils for bunkers – influences felt by 2015 – driven by fuel availability and environmental restrictions.