

“The World Oil Outlook: From new reserves revolution to new oil price uncertainties”



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*Fourth IEA-IEF-OPEC Symposium
on Energy Outlooks*

Riyadh, January 2014

The views and opinions expressed in this presentation are those of Antonio Merino and do not necessarily reflect the official policy or position of Repsol.

“It sometime almost seems as if the techniques of science were more easily learnt than the thinking that shows us what the problems are and how to approach them”

Hayek (1974).

- What do we know about oil price behavior since the 90's?
- How will oil prices behave? The unconventional revolution: surplus of resources? At what price?
- Two questions: new regulations and monetary policies
- Conclusions

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What do we know about oil price behavior?

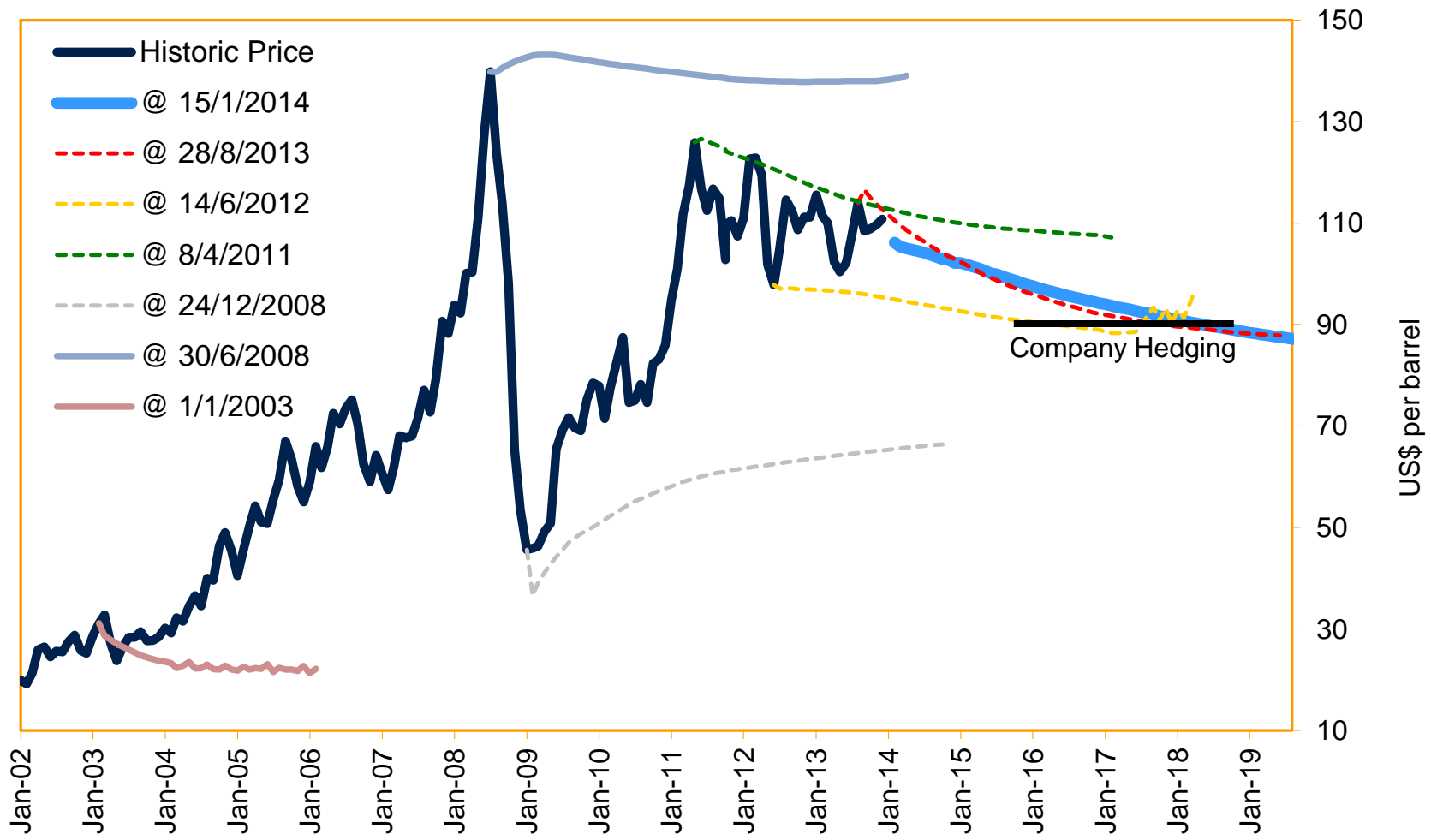
Some stylized fact on past oil price behavior... Oil behaves differently!

		US Dollar			Deutsche Mark - Euro		
		1957-1970	2013	Ratio 2013 / (1957-1970)	1957-1970	2013	Ratio 2013 / (1957-1970)
NOMINAL	CRB	85.6	206.8	2.4	82.0	73.0	0.9
	CRB Metals	106.9	995.5	9.3	101.9	351.7	3.5
	WTI	106.3	3402.1	32.0	95.3	1111.7	11.7
DEFLATED	CRB	76.7	25.0	0.3	72.1	16.7	0.2
	CRB Metals	94.2	120.3	1.3	87.9	80.3	0.9
	WTI	94.5	411.3	4.4	83.1	253.8	3.1

What do we know about oil price behavior since the 90's?

Looking to the future curve what we see is a future marginal oil price around 90\$? Is this shale oil's future marginal price? Or is it only hedging?

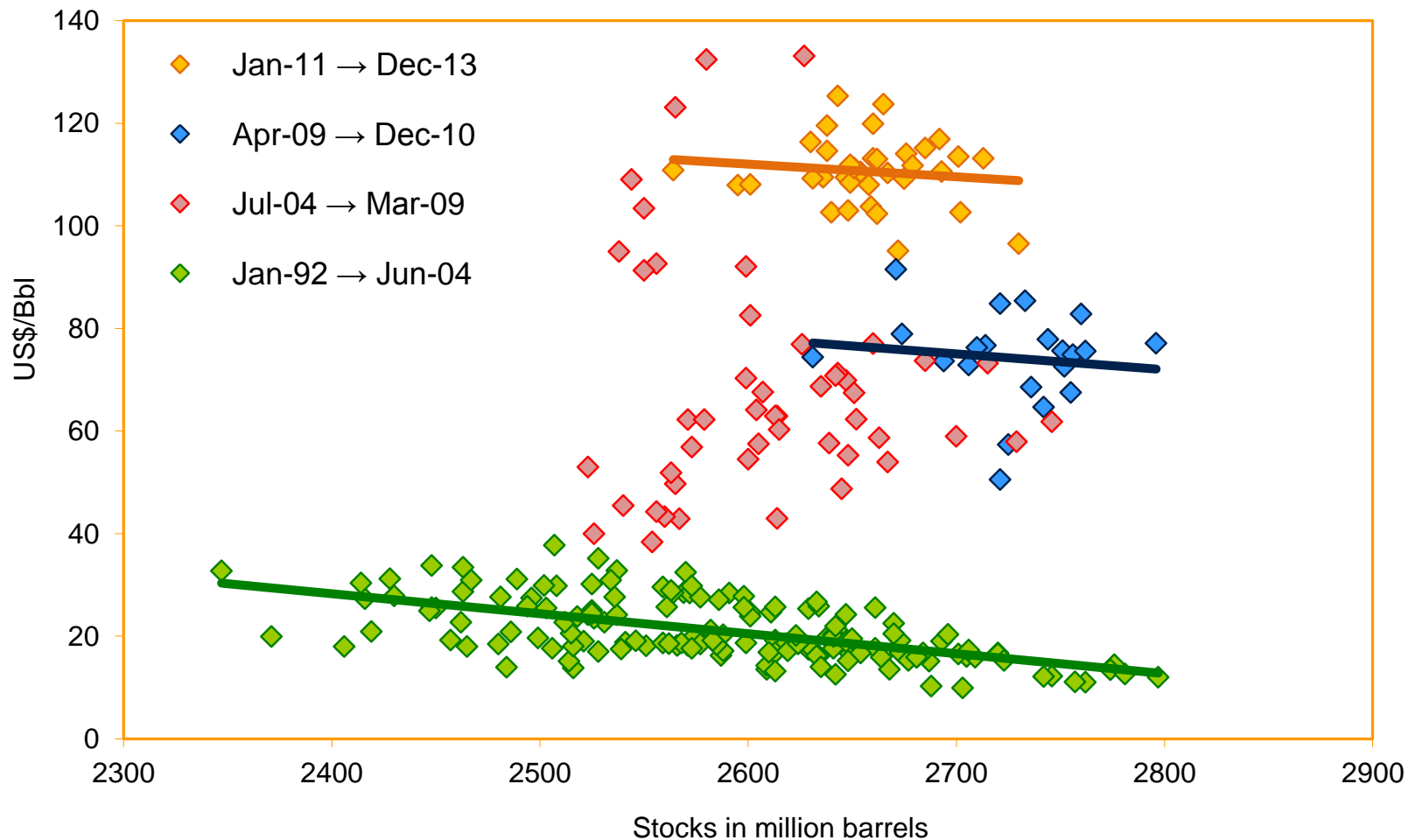
Changes in the Future Market Crude Oil Price Perspectives



What do we know about oil price behavior since the 90's?

After 2010: New relation explained by supply and demand balance at higher prices

Brent Crude Oil Price vs. OECD Petroleum Industry Stocks



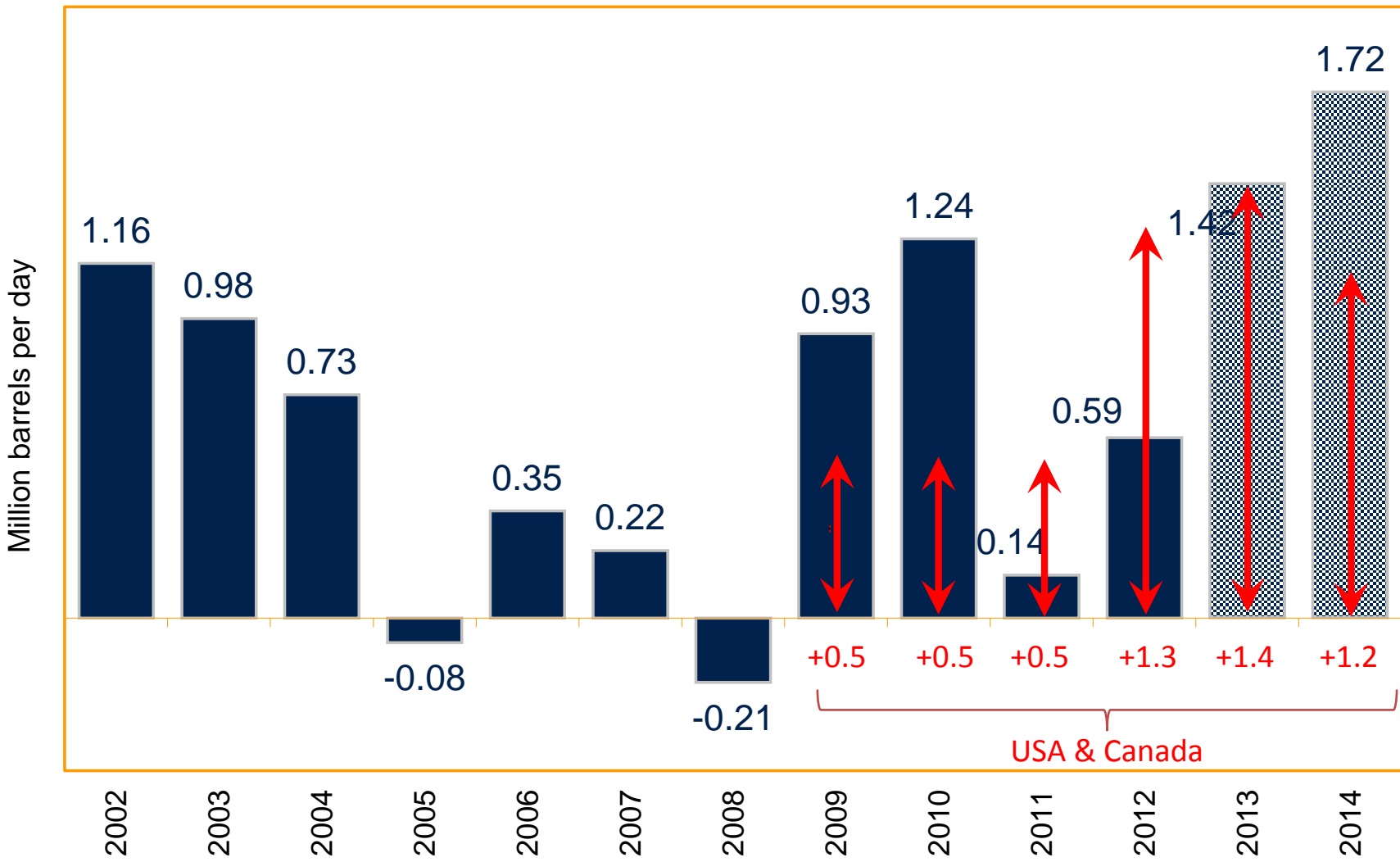
A new price-inventory relationship has been established. Implicitly the new supply curve is indicating that we need higher prices to get more production, but what prices do we expect in the future?

What do we know about oil price behavior since the 90's?

Right now, the key question seems to be how marginal price will evolve if more/less oil is needed. Can we draw any lesson from the past? Which type of price behavior?



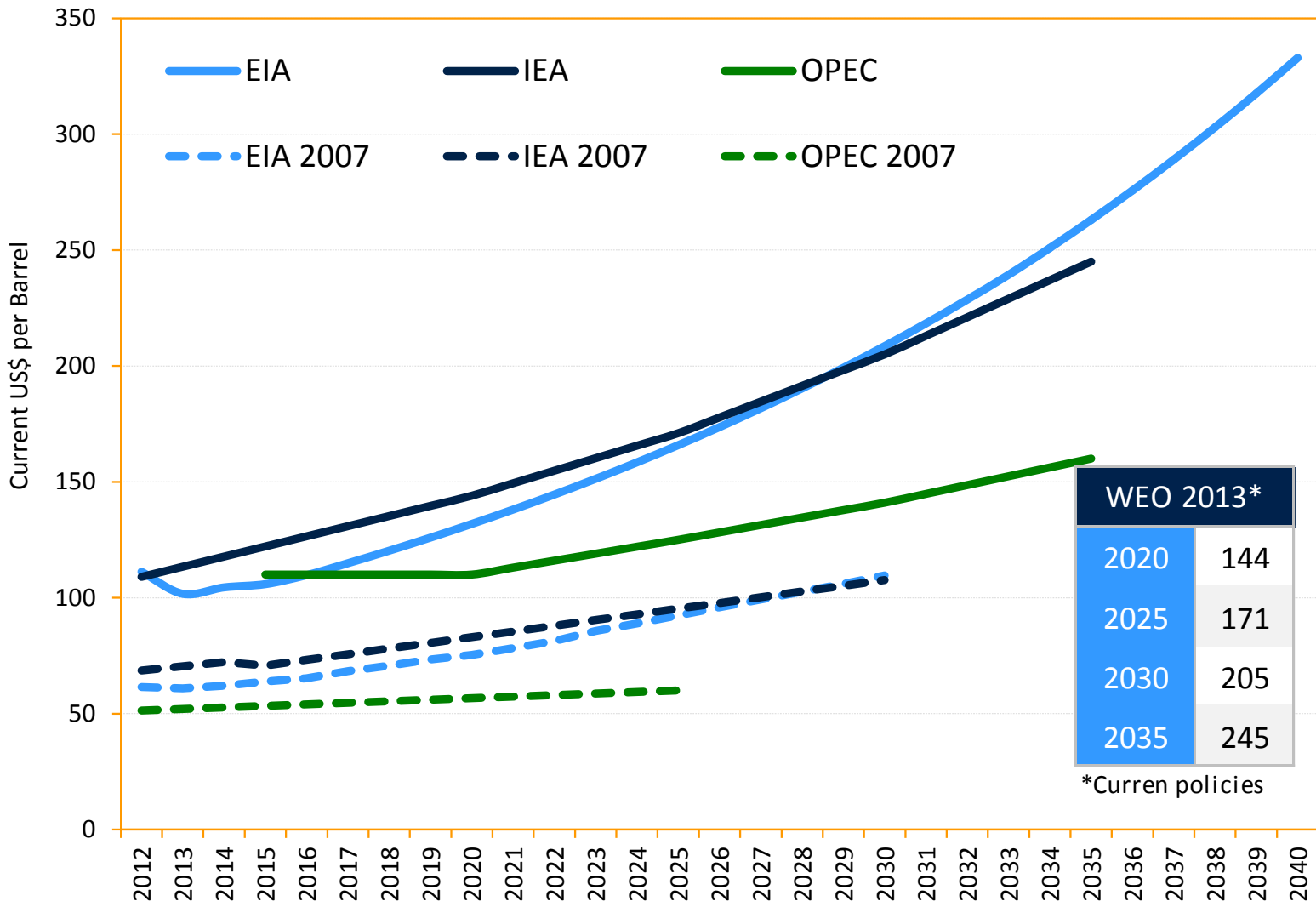
Non-OPEC Supply Annual Growth



What do we know about oil price behavior since the 90's?

What will happen to the future curve if the price forecast by the IEA or EIA is correct. Will we have a market reaction like in 2004-2009? Or will it be different this time

Official Energy Agencies price outlook changes

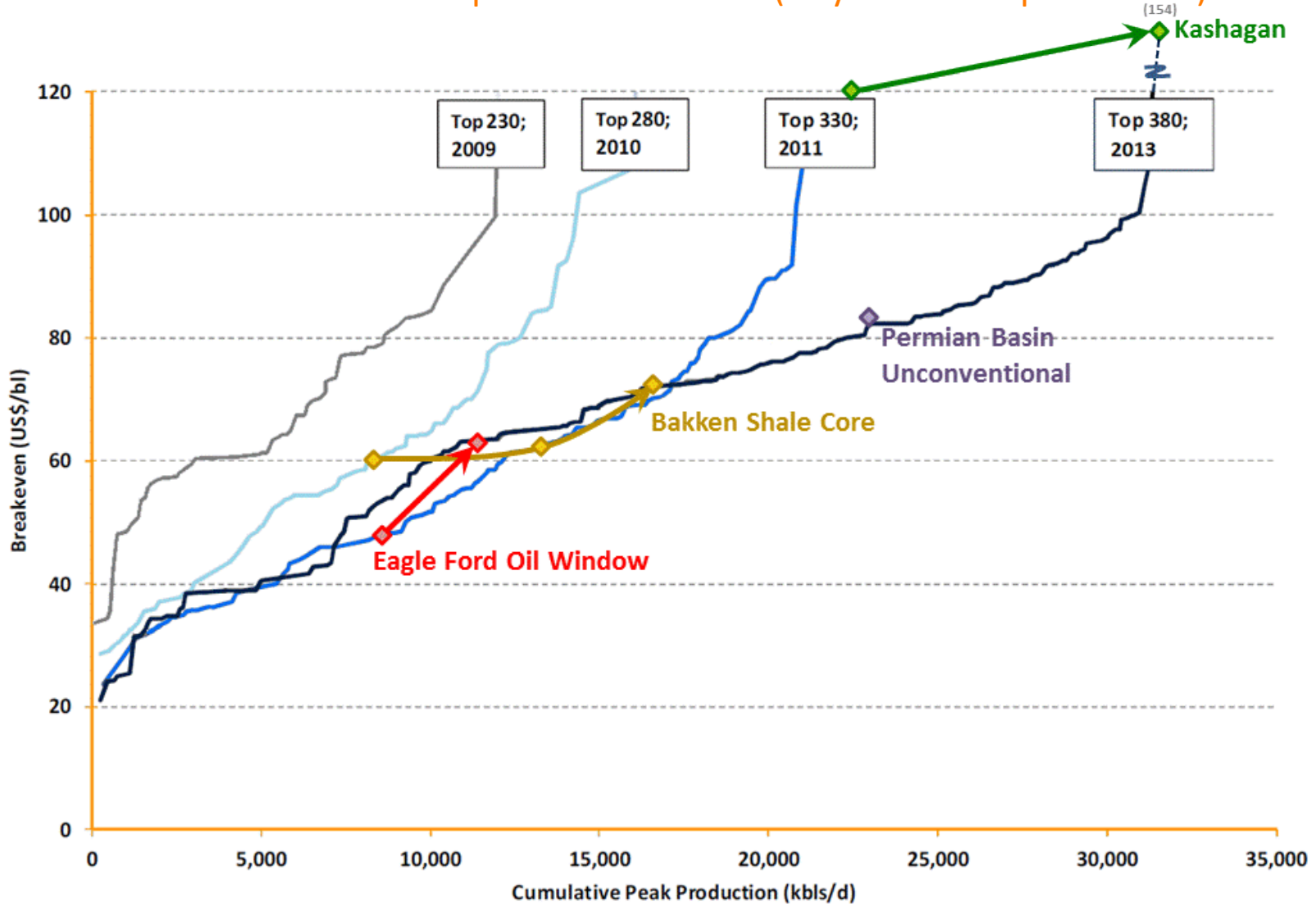


- What do we know about oil price behavior since the 90's?
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How will oil prices behave? The unconventional revolution

Resources are there but marginal cost is moving up. Cost and depletion are key

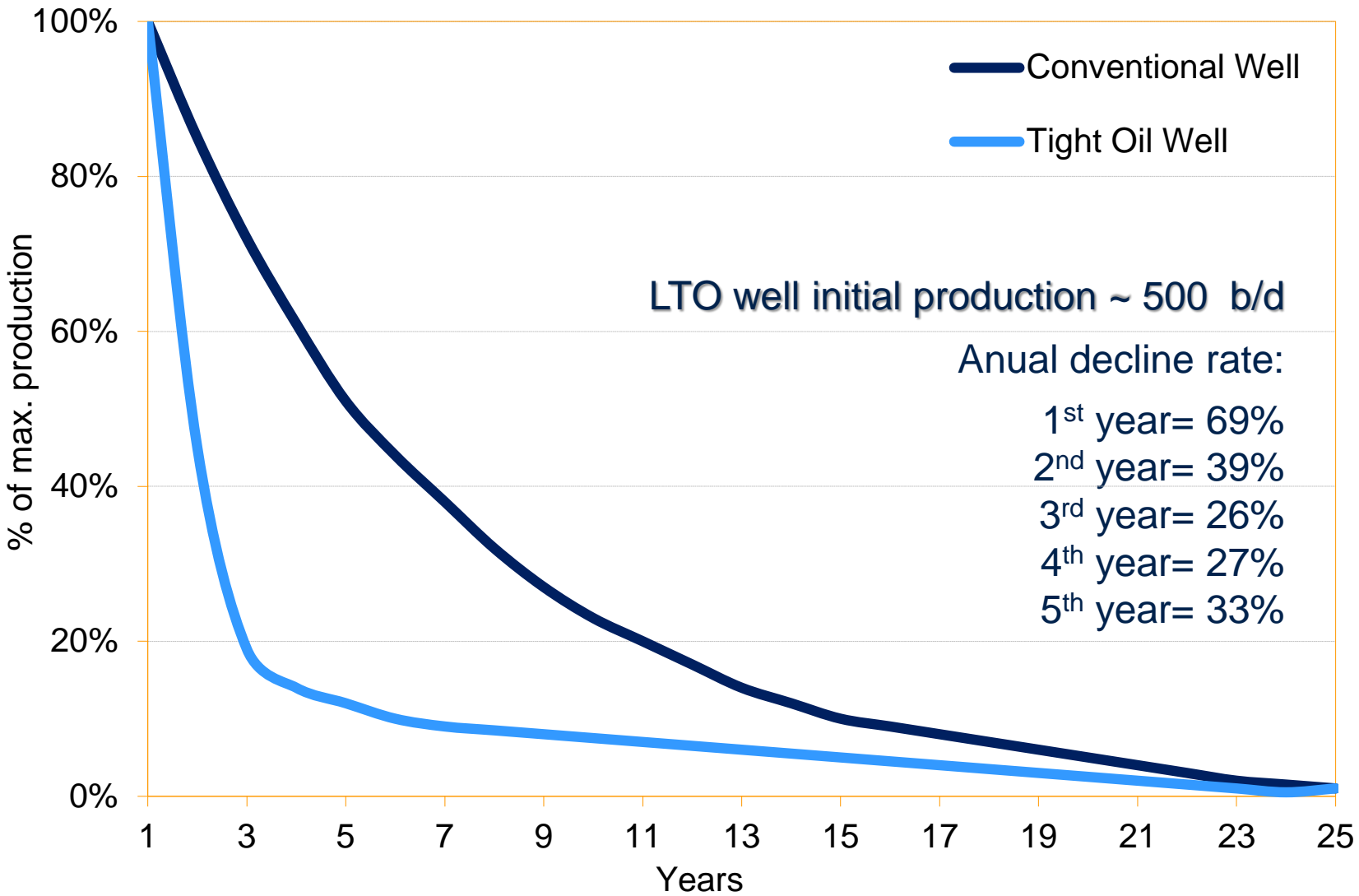
Breakeven of non-plateau oil assets (key for future production)



How will oil prices behave? The unconventional revolution

All the data point to a very rapid and continuous decline

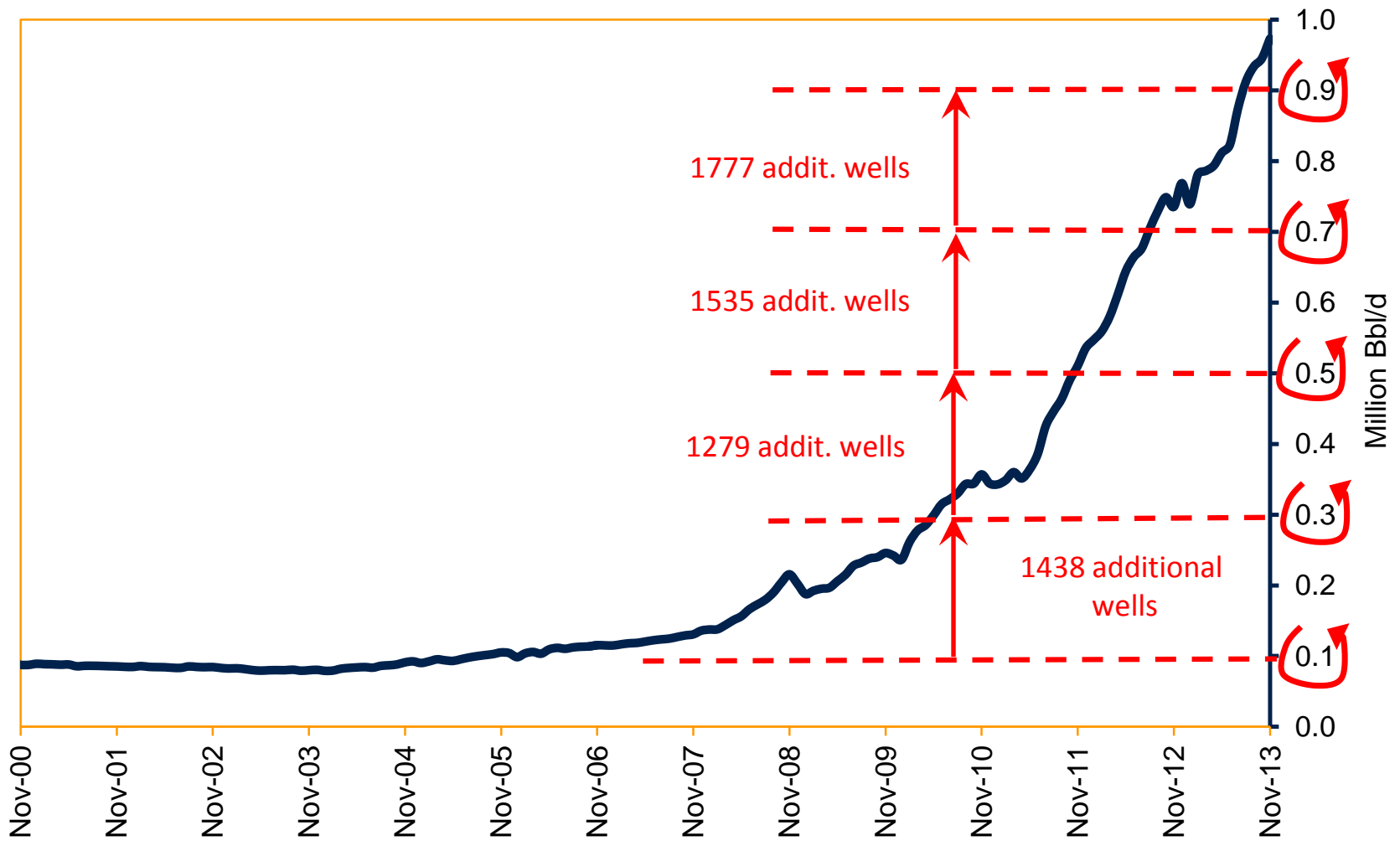
Typical production curve: Light Tight Oil (LTO) well vs. conventional oil well



How will oil prices behave? The unconventional revolution

And field decline implies an increasing investment to maintain production levels

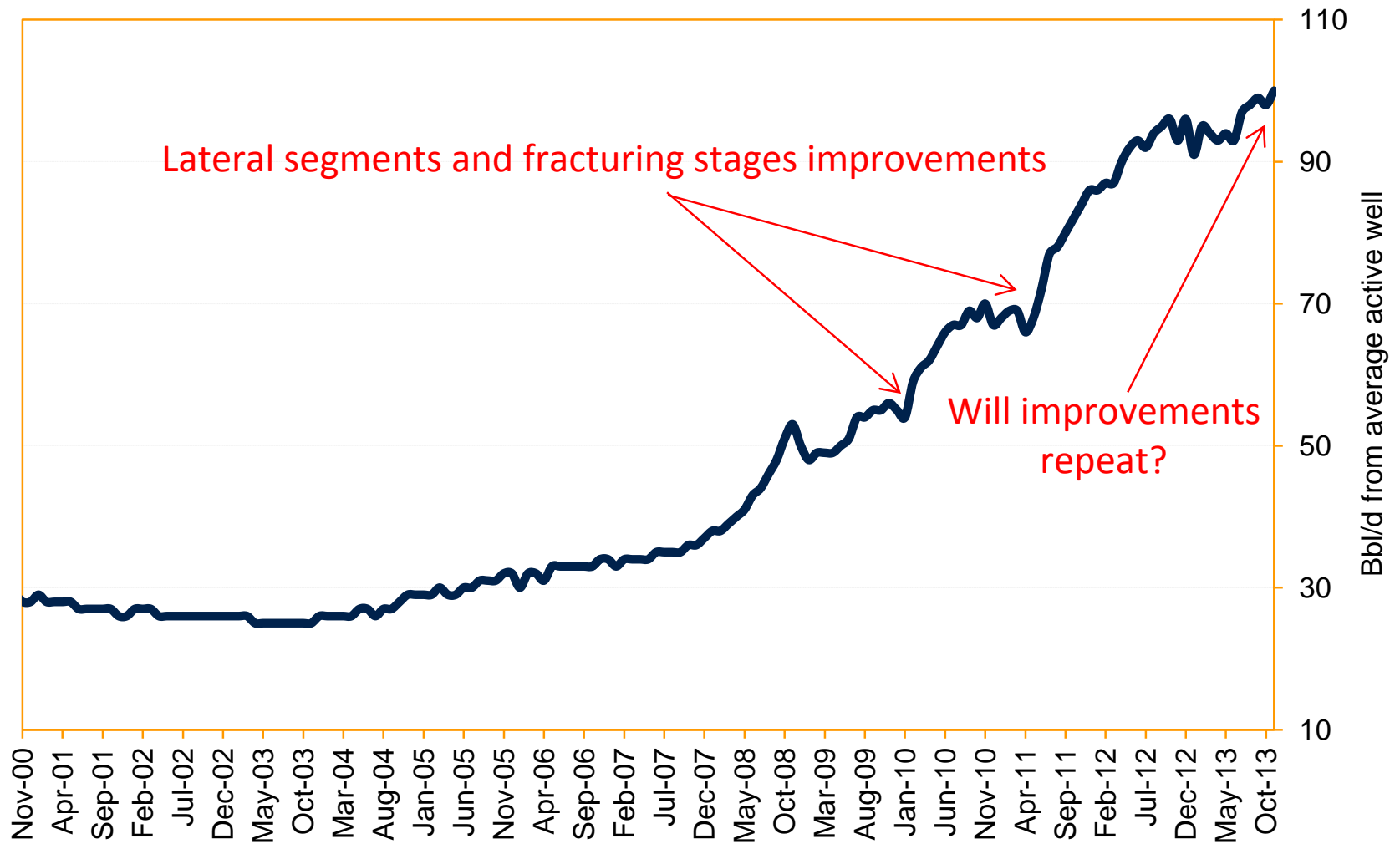
Total oil production, North Dakota



How will oil prices behave? The unconventional revolution

And field decline implies an increasing investment to maintain production levels

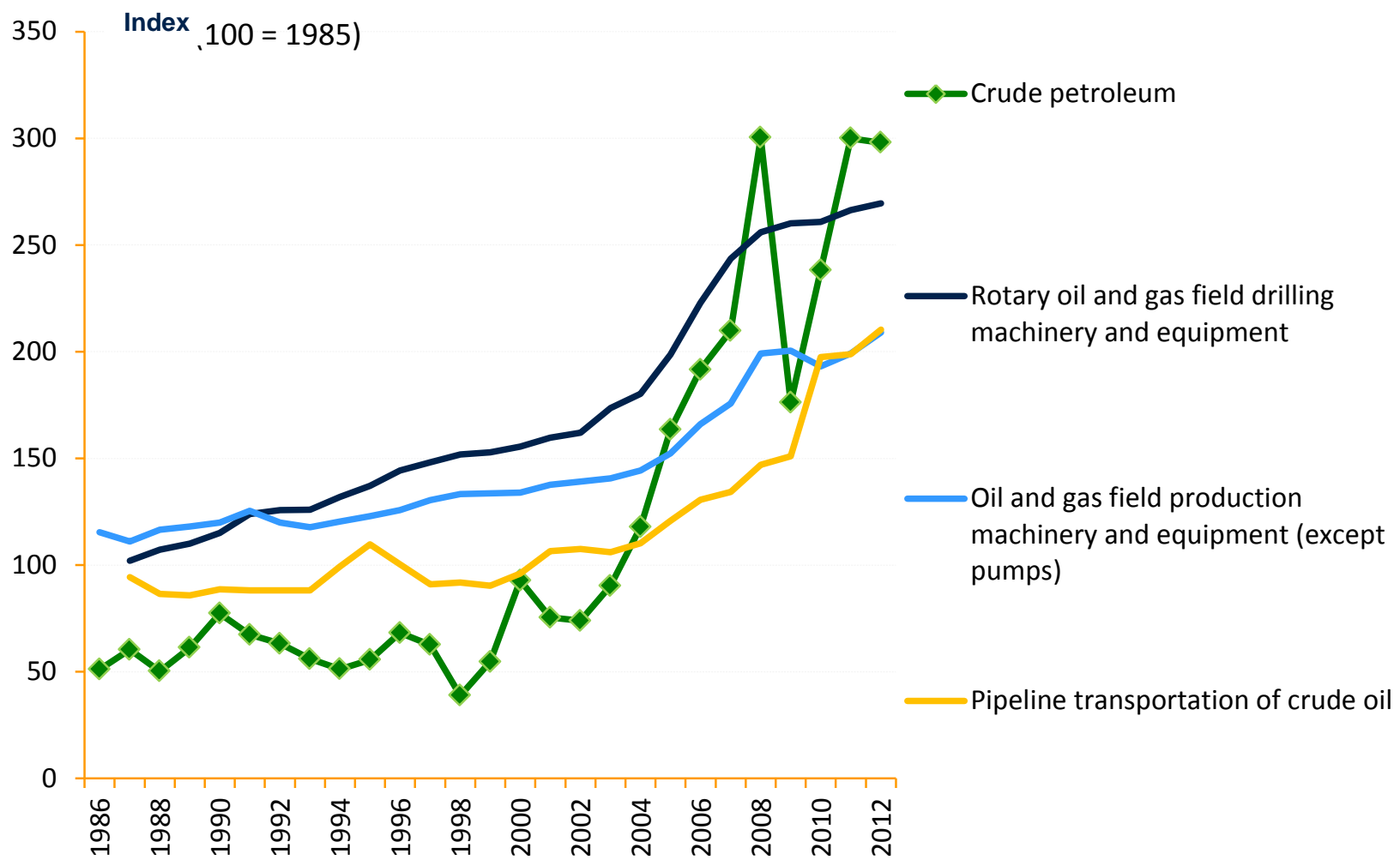
Average active well production, North Dakota



How will oil prices behave? The unconventional revolution

More wells are needed despite efficiency gains in production, so more equipment is needed to maintain plateau.

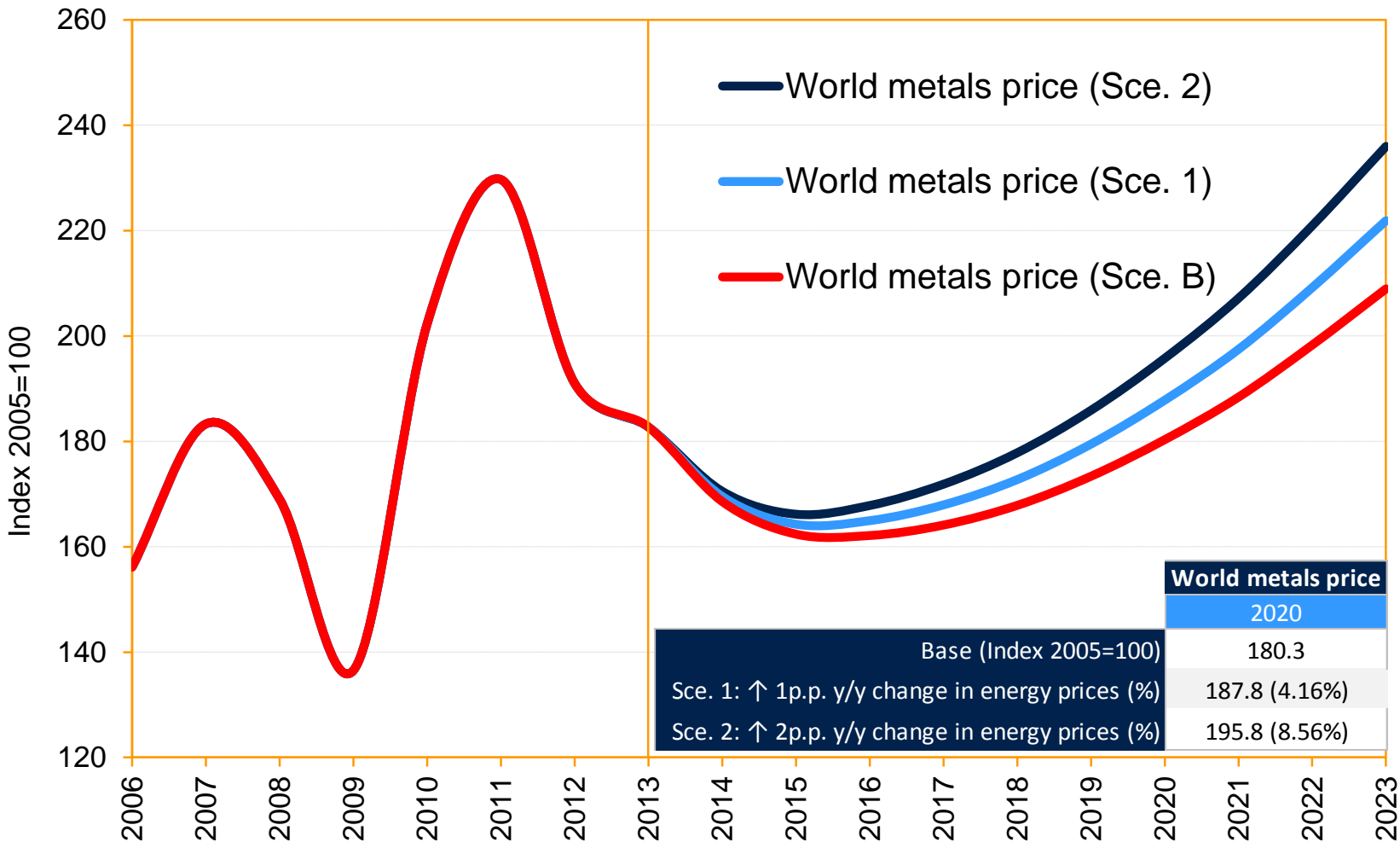
Producer Price Index (PPI) by components in the oil and gas sector



How will oil prices behave? The unconventional revolution

According to any macro economic model, energy price increases translate into higher metal prices (steel and cooper). Higher oil price implies higher metal costs

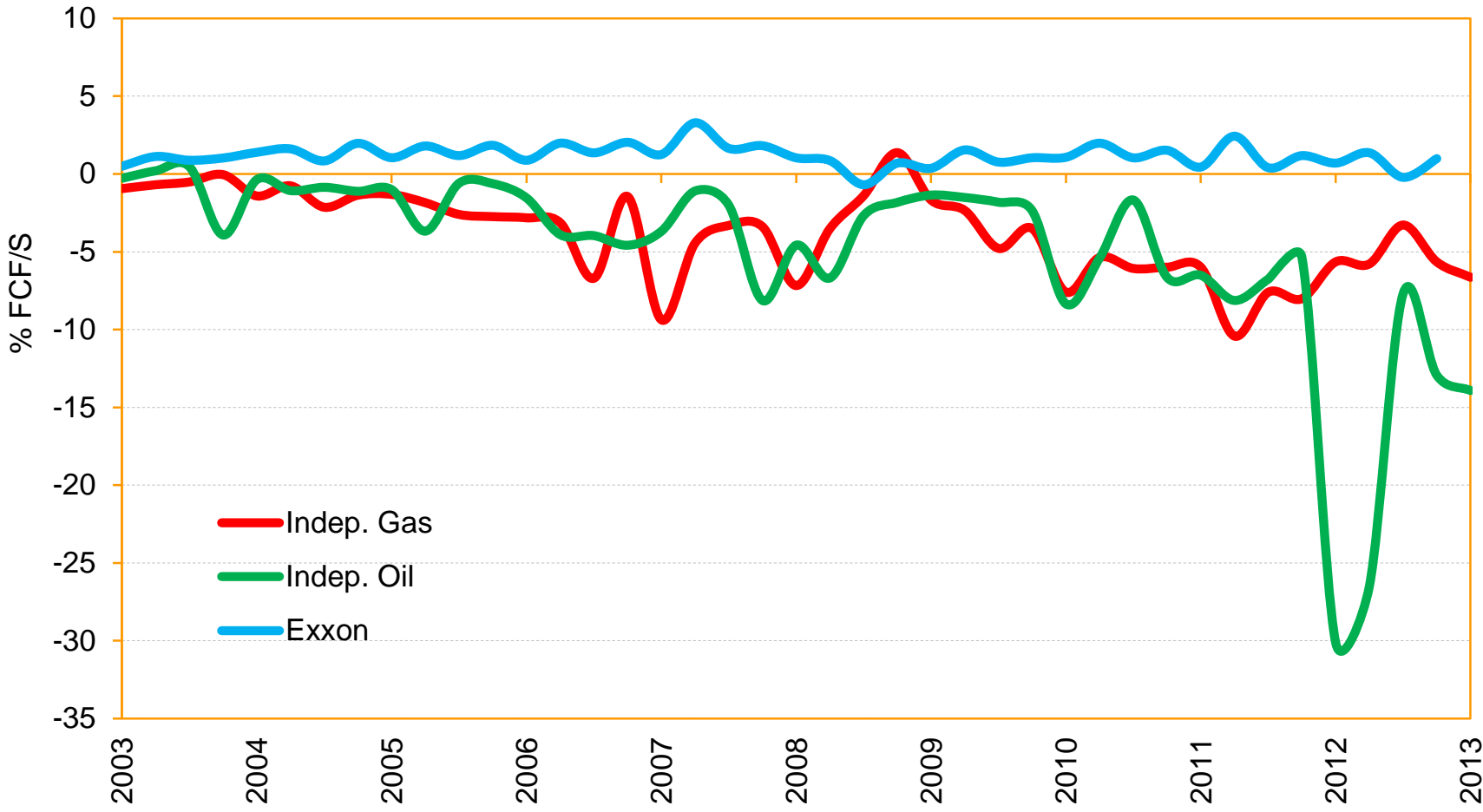
Metals price under three energy price scenarios



How will oil prices behave? The unconventional revolution

Proxy evidence supporting the unconventional production costs hypothesis

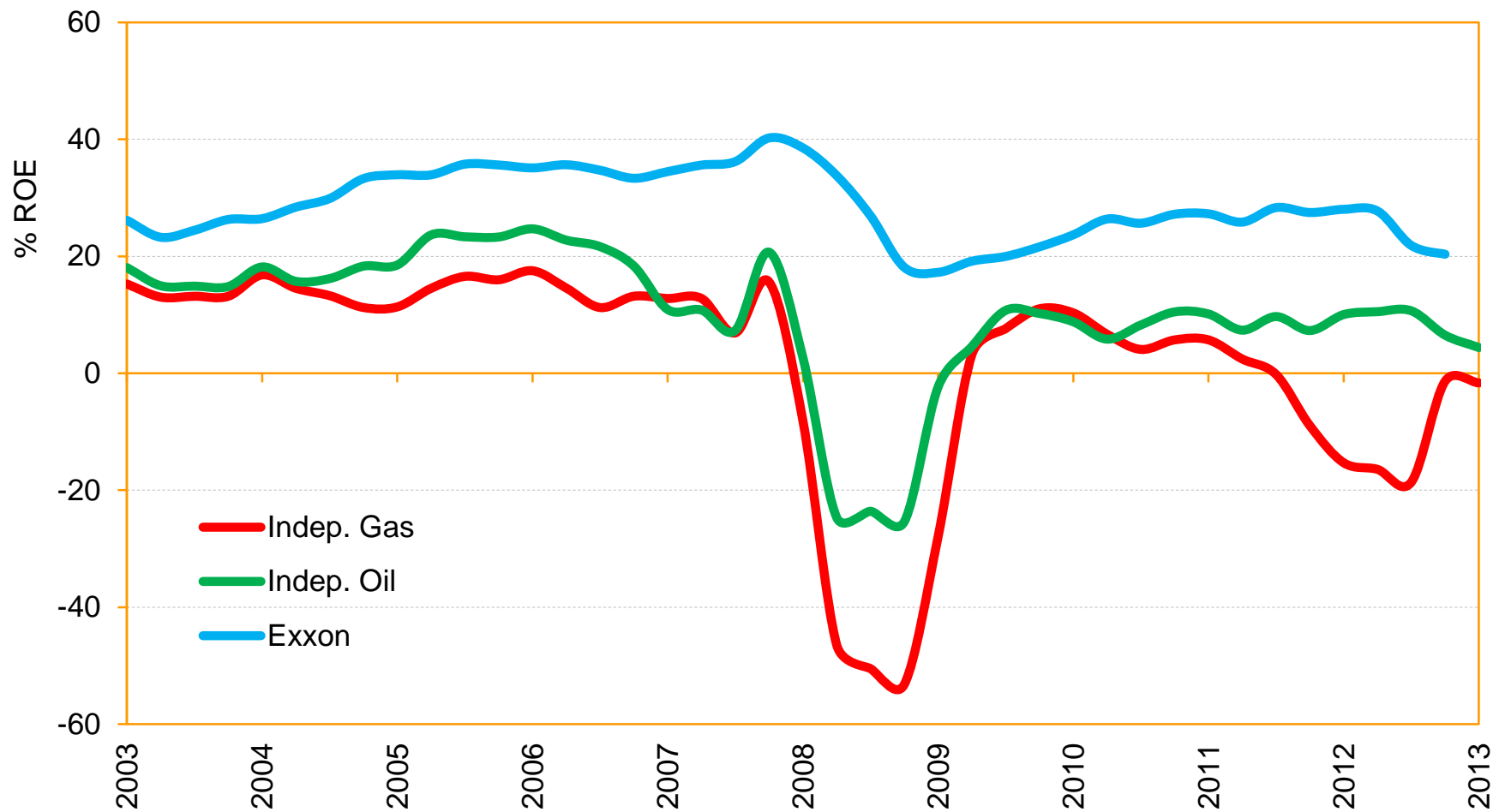
Free Cash Flow per Share



How will oil prices behave? The unconventional revolution

Proxy evidence supporting the unconventional production costs hypothesis

Return on Equity

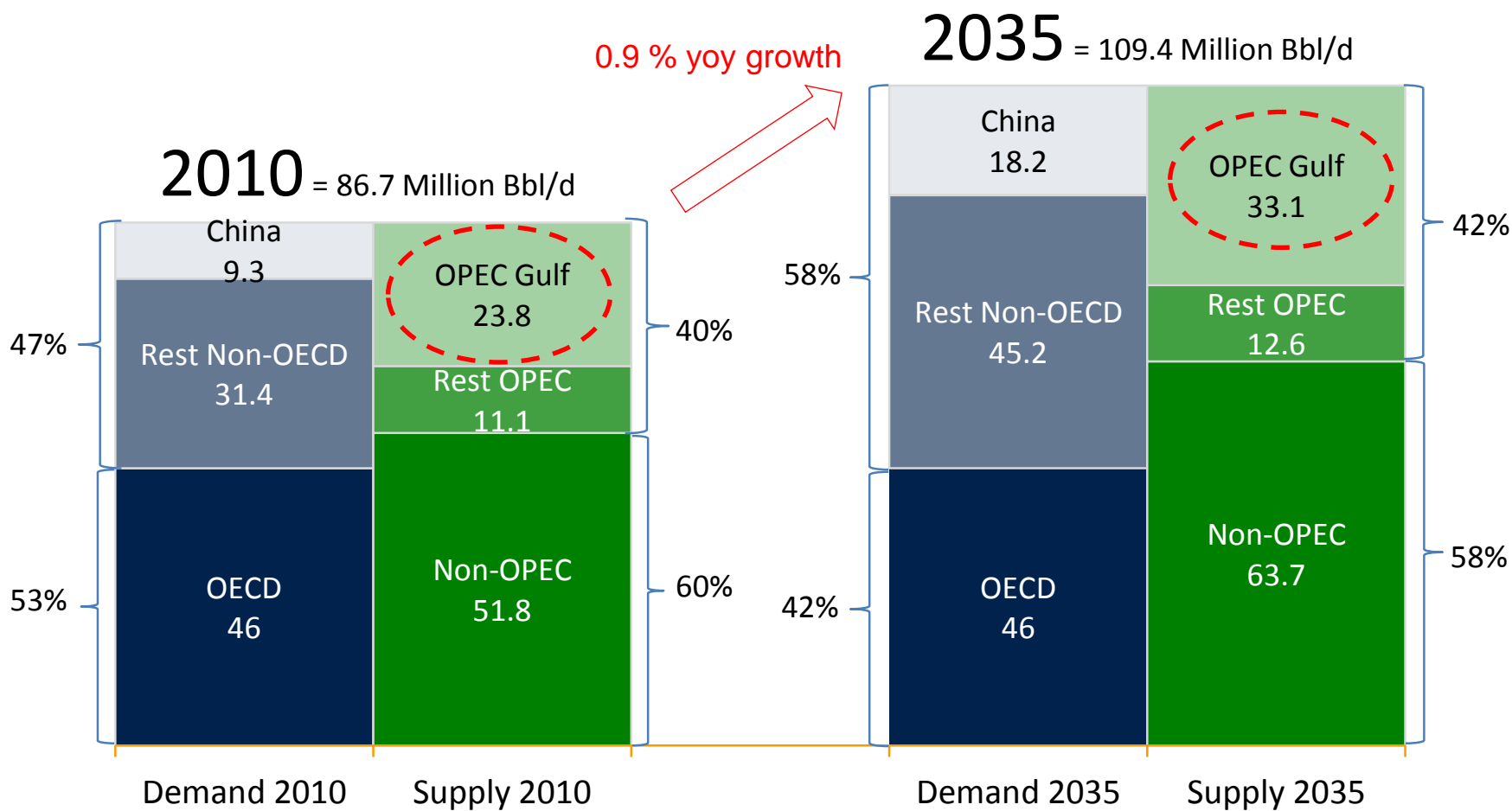


How will oil prices behave? The unconventional revolution



Lets not forget we still need the OPEC, a cartel whose countries need high prices to maintain their high spending... Which is the equilibrium price for OPEC?

EIA's long terms perspectives of supply and demand balance



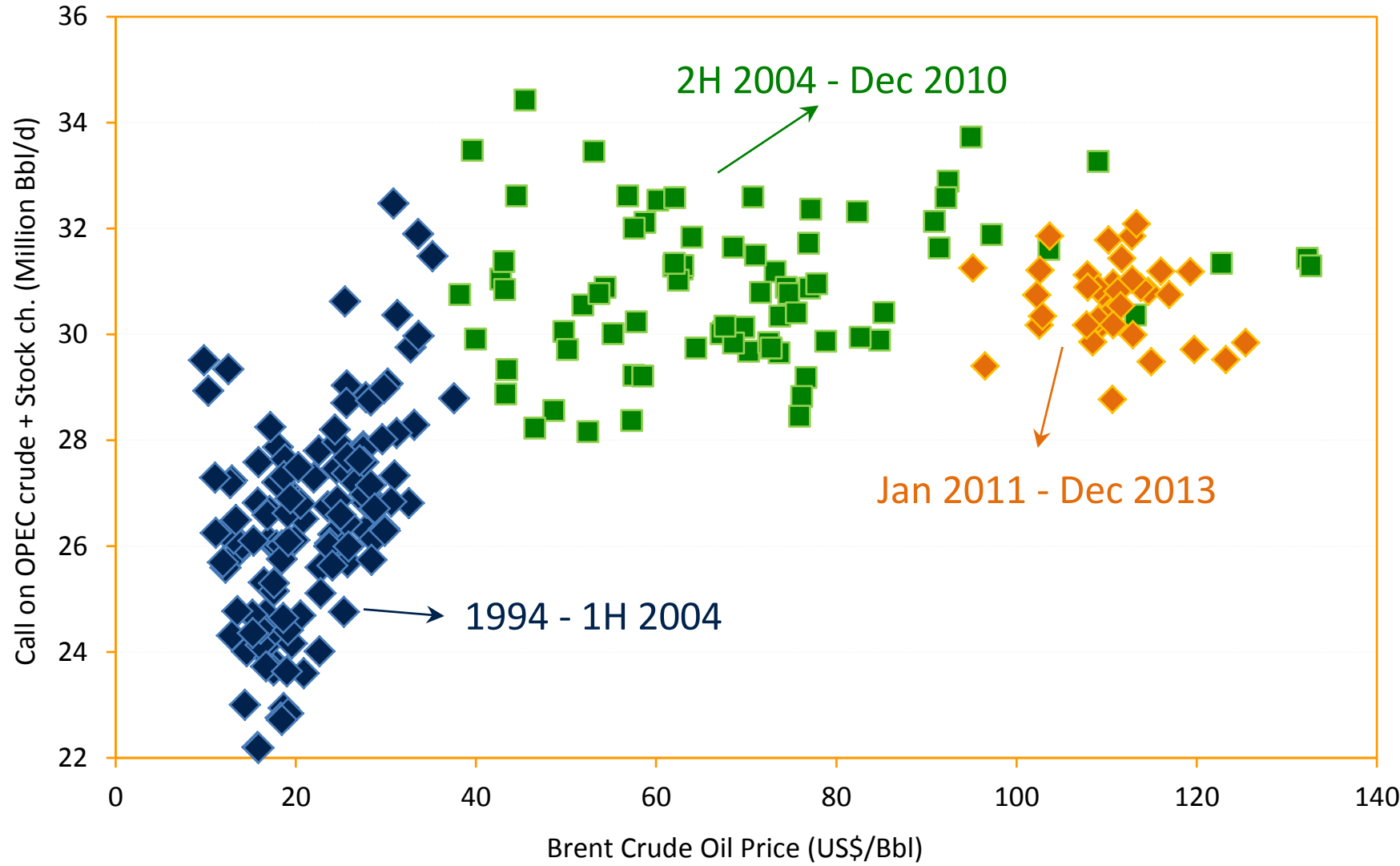
So in my view marginal prices will move up and also we will look for additional marginal production beyond conventional. In that case, OPEC production is the actual suspect

How will oil prices behave? The unconventional revolution



The OPEC answer to provide the marginal barrel in 7 year will be key. Will OPEC behavior be like during the period 2000-2004 or like during 2004-2009?

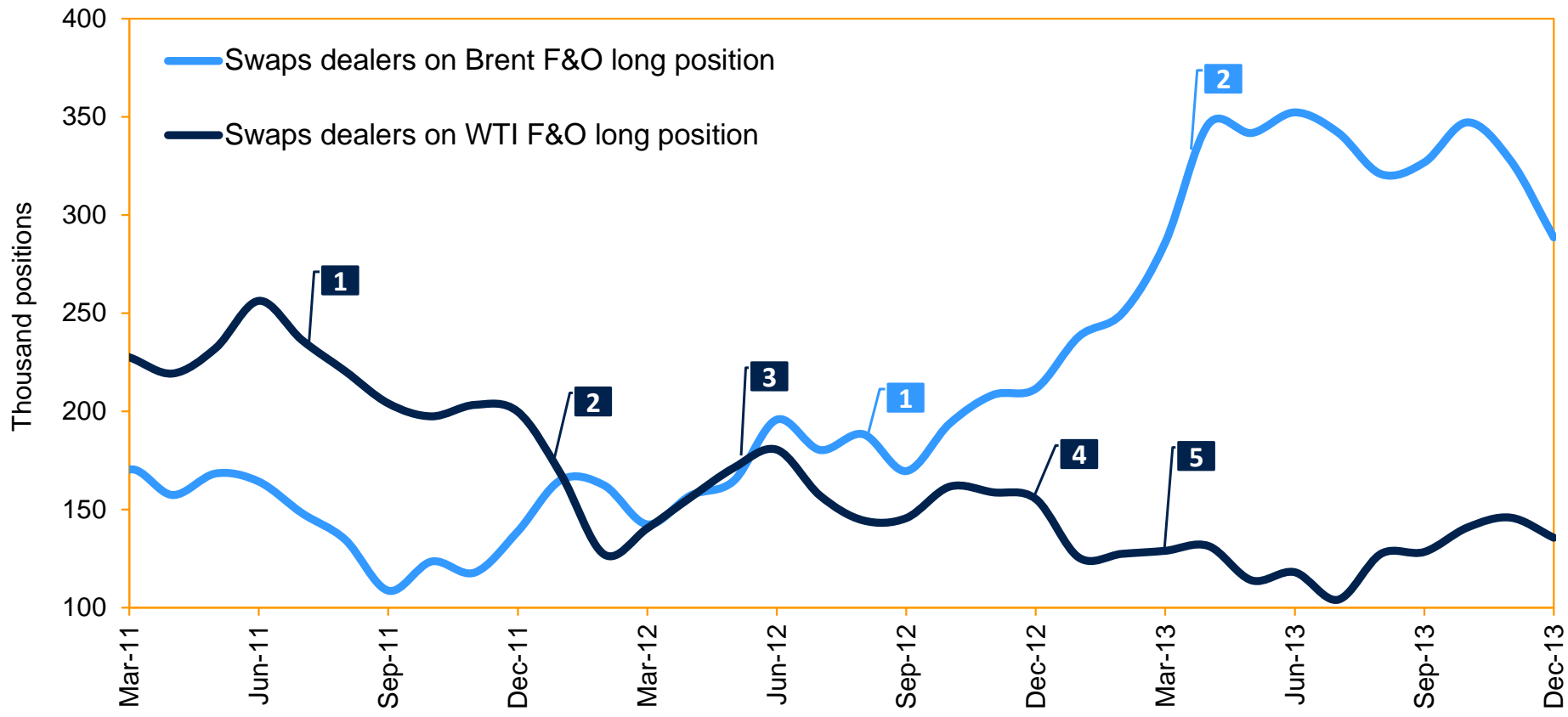
Crude Oil Price vs. Call on OPEC Crude



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Two questions: new regulations and monetary policies

It seems that regulation on both sides of the Atlantic is different, but it has its effects

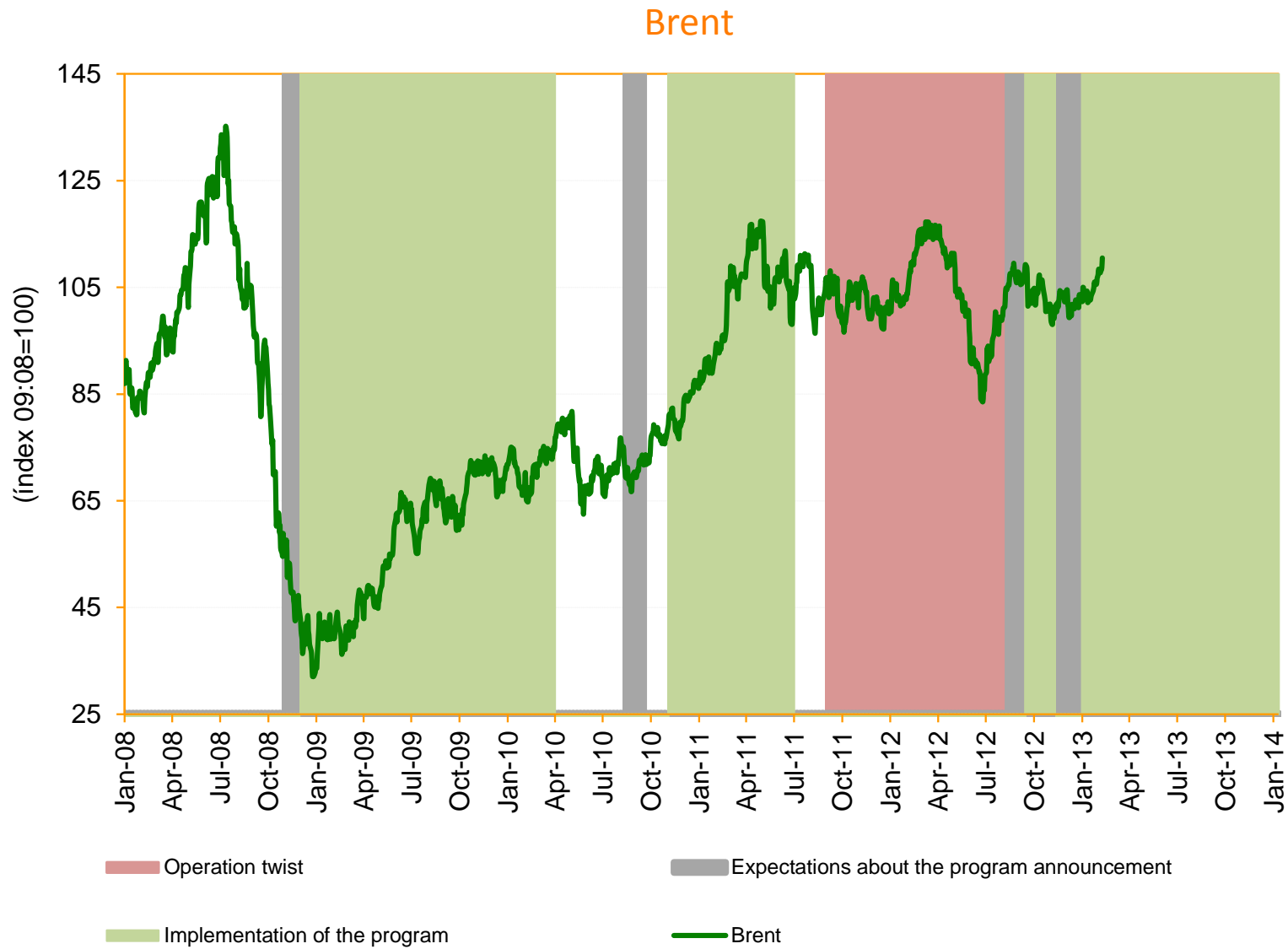


1	ago-11	Anti-manipulation in connection with swaps effective
2	ene-12	CFTC swap Data record keeping and reporting rules
3	may-12	Joint CFTC/SEC definition SD y MSP finalized
4	dic-12	1st deadline to file SD applications and SD reporting of IRS and index CDS to SDRs begins
5	mar-13	Category 1 mandatory clearing of IRS and CDX begins

1	ago-12	EMIR entry in to force
2	mar-13	ESMA and EBA issue RTS on certain provisions in EMIR

Two questions: new regulations and monetary policies

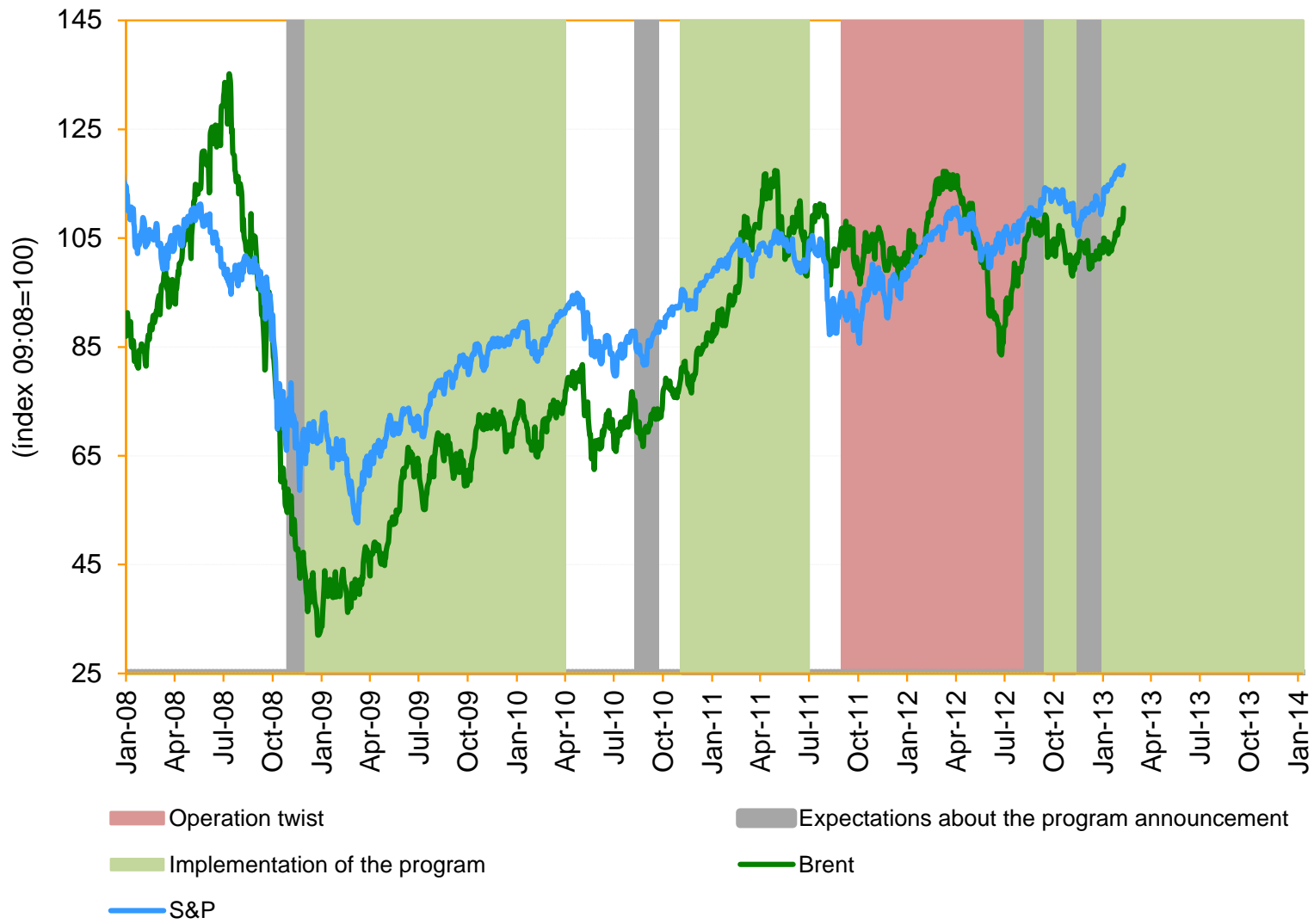
Less co-movements since the implementation of QE4 in January



Two questions: new regulations and monetary policies

Less co-movements since the implementation of QE4 in January

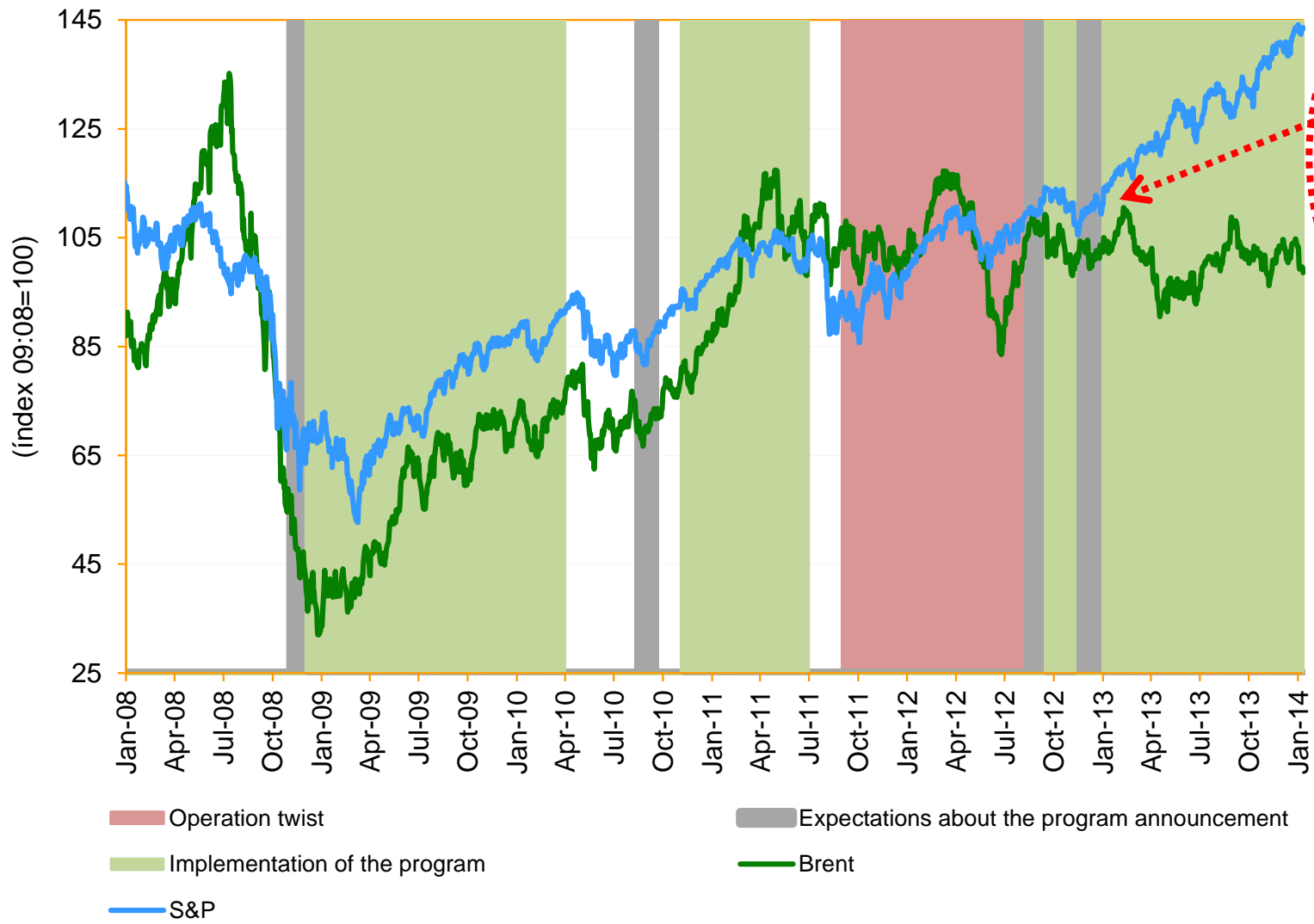
Brent and S&P



Two questions: new regulations and monetary policies

Less co-movements since the implementation of QE4 in January

Brent and S&P

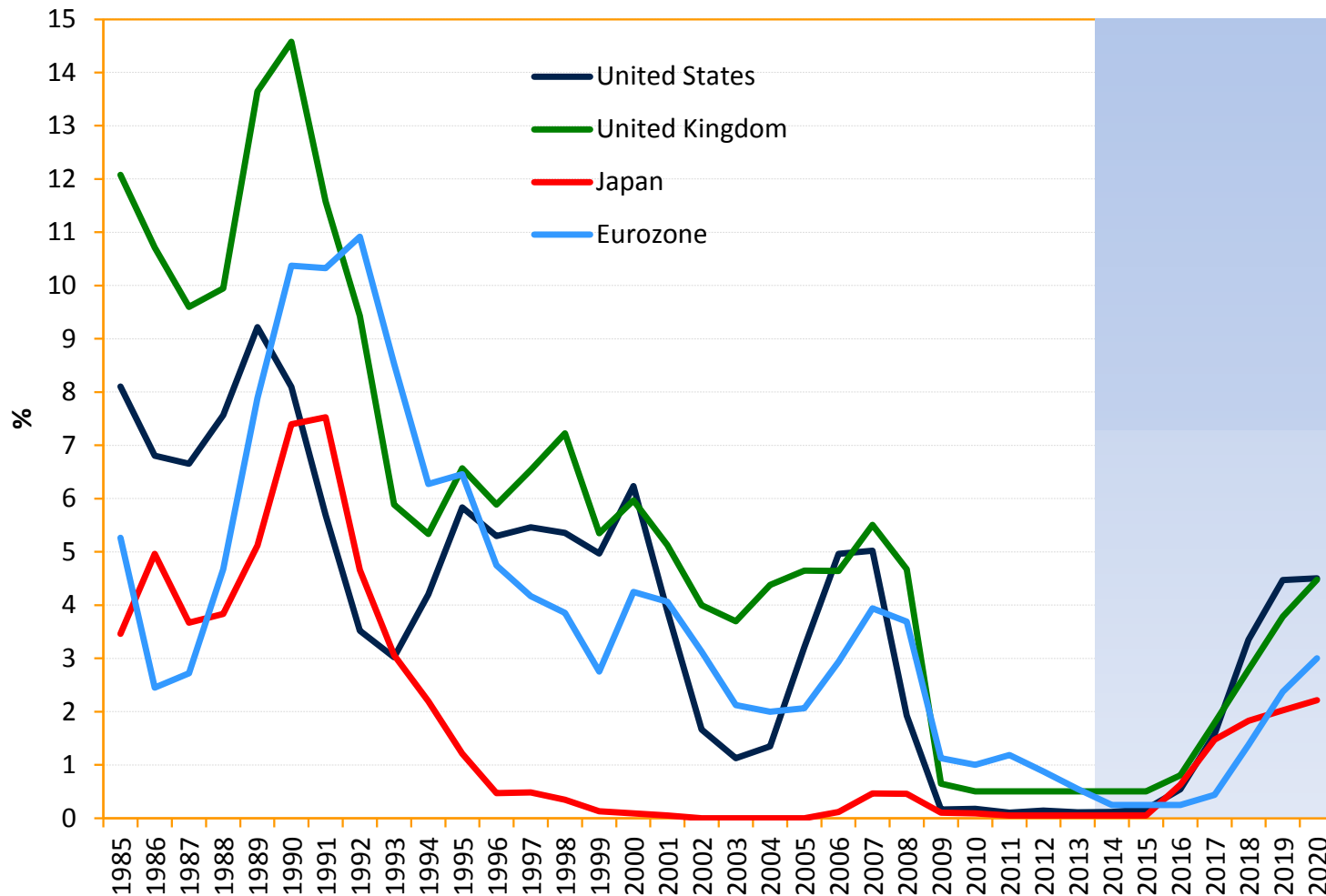


EMIR regulations
Uncertainties regarding Chinese growth

Two questions: new regulations and monetary policies

And what will happen if interest rates come back to normal levels?

Central Bank interventions rates



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Conclusions

- In real terms oil is the only commodity that has multiplied its price since the 60's. The depreciation of the dollar has to be considered. In € terms the picture is slightly different
- We have seen the more acute episode of price volatility during a period of financial turbulence (2004-2009) For the time being the issue is marginal price of unconventional
- When we see the decline rates and the need for more wells, marginal cost increases seem natural even with efficiency gains
- Moreover, In our view there is a clear relationship between oil price increases and metals price increases. They feed on each other
- I am of the view that in 5-10 years, OPEC will face important decisions because more OPEC oil will be needed. Price uncertainties can come back., as in the period between 2004-2009. If that not the case, real oil price will fall
- Last but not least, there are two important issues not directly related with oil influencing price outlook : Regulation of derivative markets and banks and the new monetary policy. One will limit upside movements in normal times and the other support high prices

THANK YOU

