

Presentation for Oil Price Risk Management

October 2014

Here for good

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I. Executive Summary

Executive Summary

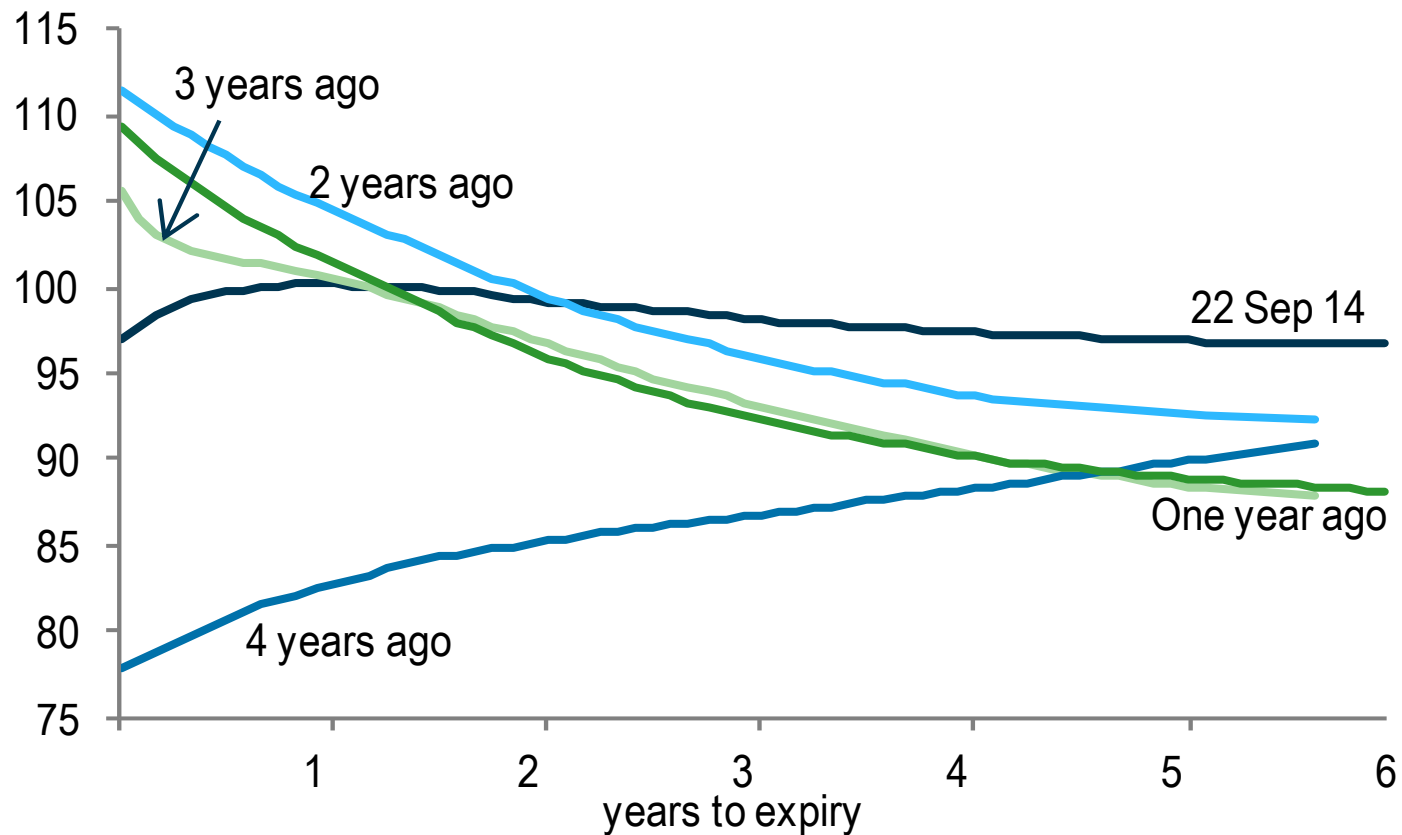
- Oil prices are likely to remain strong with volatility to the upside due to political tensions in the Middle East – observable from oil price forecasts being raised by several banks
- This volatility will adversely affect the Oil subsidies.
- More governments are moving to protect their subsidy programs; Ghana and Mexico for oil and Egypt for wheat as examples. We also note the domestic unrest in Nigeria due to the removal of domestic subsidies
- Governments have multiple options to mitigate Oil price risk – one of which includes buying “insurance” – ie call options on oil, which will provide upside price protection with no downside price risk
- This approach that results in a balanced oil liability program could lead to a lesser volatility in subsidies leading to high inflation or fiscal deficit



II. Oil Market Update

Significant flattening of the Brent term structure

Brent forward curve, now and past years



How is Light Tight Oil different from conventional oil?

The shale revolution

- The key difference versus conventional oil arises from the significantly higher decline rates of tight oil and its quality it is light.
- On the oil side they contain the three main US tight oil plays, Eagle Ford, Bakken and Niobara, as well the Permian which contains a mixture of area of both conventional and tight oil and gas plays.
- Output from those four plays alone has grown by 4.5mb/d since 2010
- US output growth would tail off more quickly than consensus expects, and at a higher price level. We would expect to see a significant response at wellhead prices of between USD 75/bbl and USD 80/bbl, which would correspond, given current differentials, to WTI at about USD 85/bbl and Brent at about USD 90/bbl.
- Before the advent of large-scale tight oil output in the US, the economics of the response to lower prices was simpler. Lower rig activity in response to lower prices would eventually affect output in the longer term, but in the shorter term the only possible supply response came from shutting in production.
- The economics of tight oil is very different from conventional oil, and in particular it does not require any shut-ins of existing wells for a significant impact on output to occur. All that is required is for drilling activity to slacken, after which, with a lag of some two or three months, output growth will begin to erode.
- Production response from US conventional oil field occurred at very low prices, and any significant US production response was thus only visible near the bottom of some of the deepest of price collapses.
- How would US Oil exports, if it happens, will impact the oil market?

A sharp slowing of demand is not in the numbers yet

Demand changes and forecasts, kbd

	2013			2014			2015		
	SC	IEA	EIA	SC	IEA	EIA	SC	IEA	EIA
Asia-Pacific	406	330	380	561	440	500	598	600	570
China	300	260	330	340	250	370	443	330	430
India	74	20	60	155	90	100	105	110	100
Japan	-163	-160	-170	-167	-180	-130	-180	-120	-160
Korea	4	0	-	43	40	-	10	-10	-
Africa	150	60	60	169	120	110	172	180	120
Middle East	102	140	250	232	220	270	193	230	310
Saudi Arabia	45	40	-	144	100	-	127	100	-
Former Soviet Union	120	120	130	129	70	110	131	70	50
South & Central America	165	210	170	130	130	190	142	0	120
Brazil	67	120	130	92	70	150	50	60	70
North America	457	480	460	114	30	-30	120	60	190
Canada	27	70	20	21	0	20	-10	-30	20
Mexico	-41	-50	-30	-51	-30	-20	20	10	10
USA	471	440	470	143	70	-40	110	80	160
Europe	-189	-150	-100	-177	-140	-110	-55	-50	-20
EU5	-117	-160	-	-137	-160	-	-15	-60	-
World	1209	1180	1340	1158	900	1040	1301	1220	1340

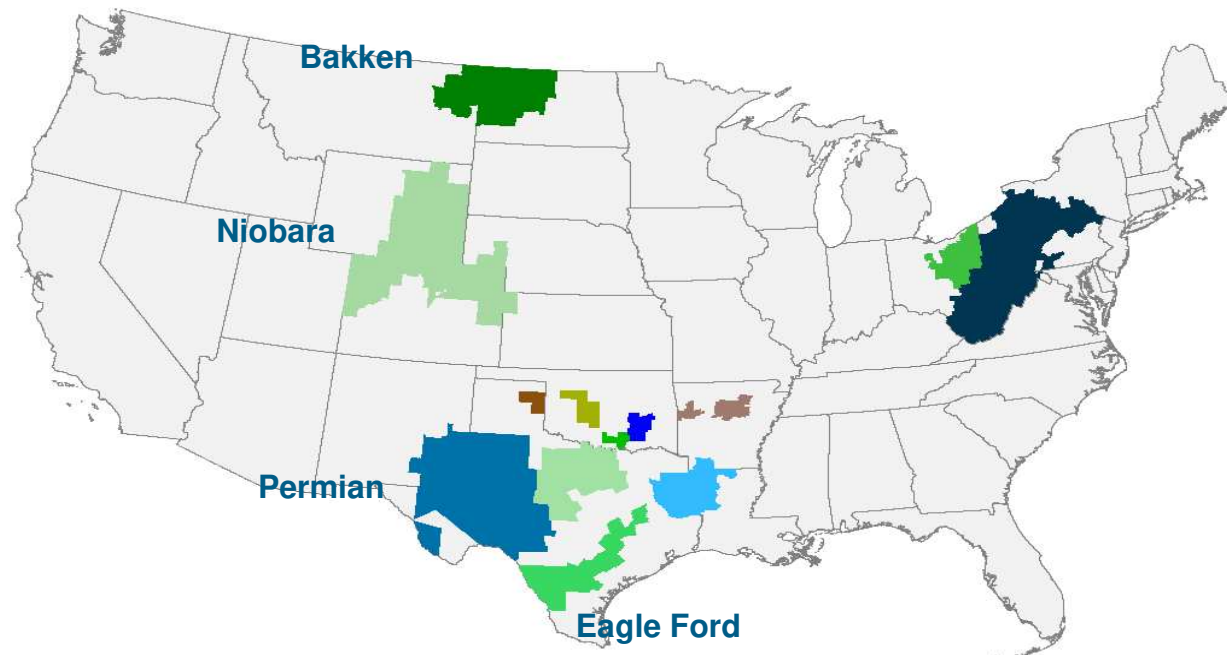
Non OPEC growth heavily centered on the US

Supply growth forecasts, kb/d

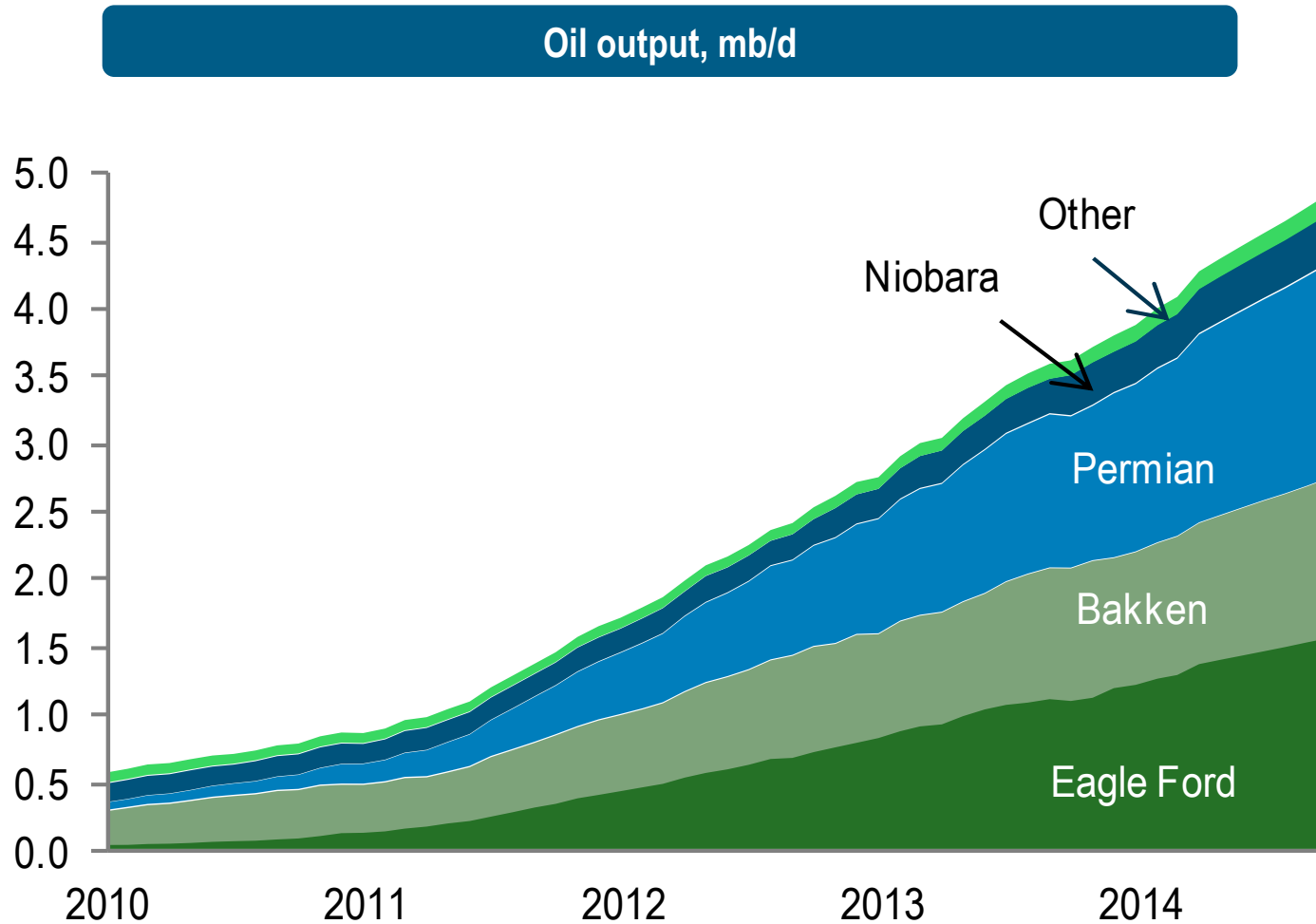
	2013			2014			2015		
	SC	IEA	EIA	SC	IEA	EIA	SC	IEA	EIA
Asia-Pacific	-99	-	-110	-85	-30	50	-7	180	240
Australia	-74	-	-70	2	30	20	-10	40	0
China	87	-	100	14	30	40	70	60	100
India	-8	-	-10	-11	-10	0	-10	0	40
Indonesia	-47	-	-50	-41	-50	-30	-31	-30	20
Malaysia	-25	-	-20	-15	0	20	-14	30	30
Vietnam	-10	-	-10	-21	-	-10	3	-	50
Africa	89	-	80	-11	40	-30	-10	10	-90
Egypt	-20	-	-20	-29	-30	-30	-17	-20	-30
Equatorial Guinea	-20	-	-20	-7	-	-20	-10	-	-30
Gabon	-3	-	0	-3	0	0	-4	-10	0
Sudan and South Sudan	135	-	130	35	-	10	25	-	-10
Middle East	-87	-	-110	-42	-30	20	-16	-40	40
Oman	21	-	20	10	0	60	-10	-10	30
Syria	-95	-	-100	-43	-30	-30	0	0	0
Yemen	-19	-	-40	-8	0	0	-5	-40	0
Former Soviet Union	148	-	140	100	0	90	25	-100	20
Azerbaijan	-51	-	-50	-46	-	-30	-40	-	-40
Kazakhstan	52	-	50	50	-	60	20	-	10
Russia	137	-	130	85	40	50	50	-50	30
South & Central America	118	-	100	13	140	80	14	220	40
Argentina	-15	-	-10	-19	-20	0	-10	0	10
Brazil	58	-	40	40	180	90	20	90	20
Colombia	59	-	60	-4	-20	-10	20	120	-10
North America	1340	-	1450	1465	1420	1660	1130	990	1230
Canada	217	-	240	270	170	290	180	140	80
Mexico	-28	-	-40	-31	-100	-50	-20	-110	-70
USA	1152	-	1230	1226	1350	1430	970	960	1210
Europe	-189	-	-200	-79	-40	-30	-182	-60	-230
Norway	-76	-	-90	-37	0	30	-70	-50	-30
UK	-92	-	-90	-31	-20	-40	88	20	180
Total plus processing gains	1320	-	1360	1362	1640	1830	954	1260	1250

US tight oil

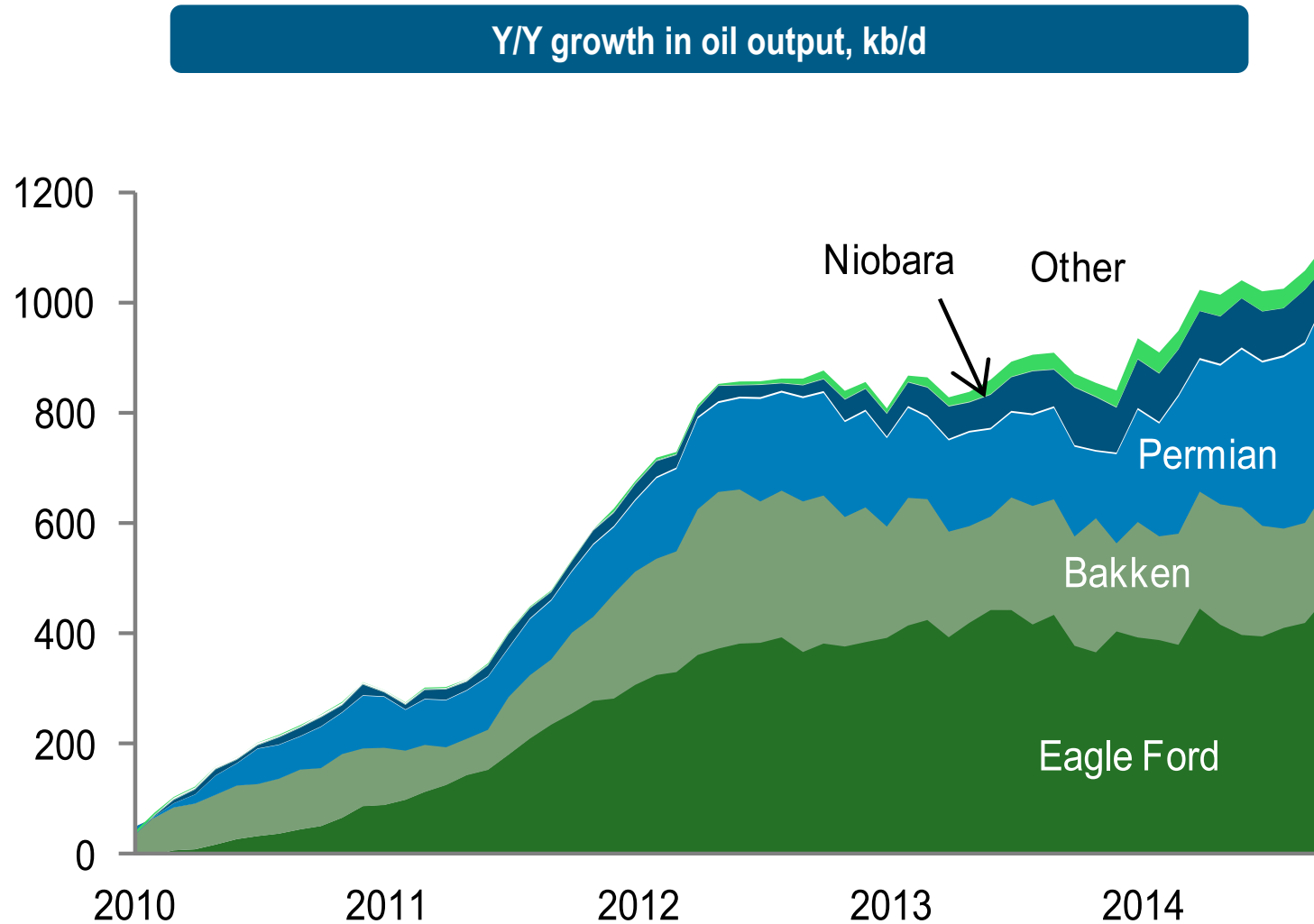
Key US tight oil regions, kbd



Sustained growth to continue

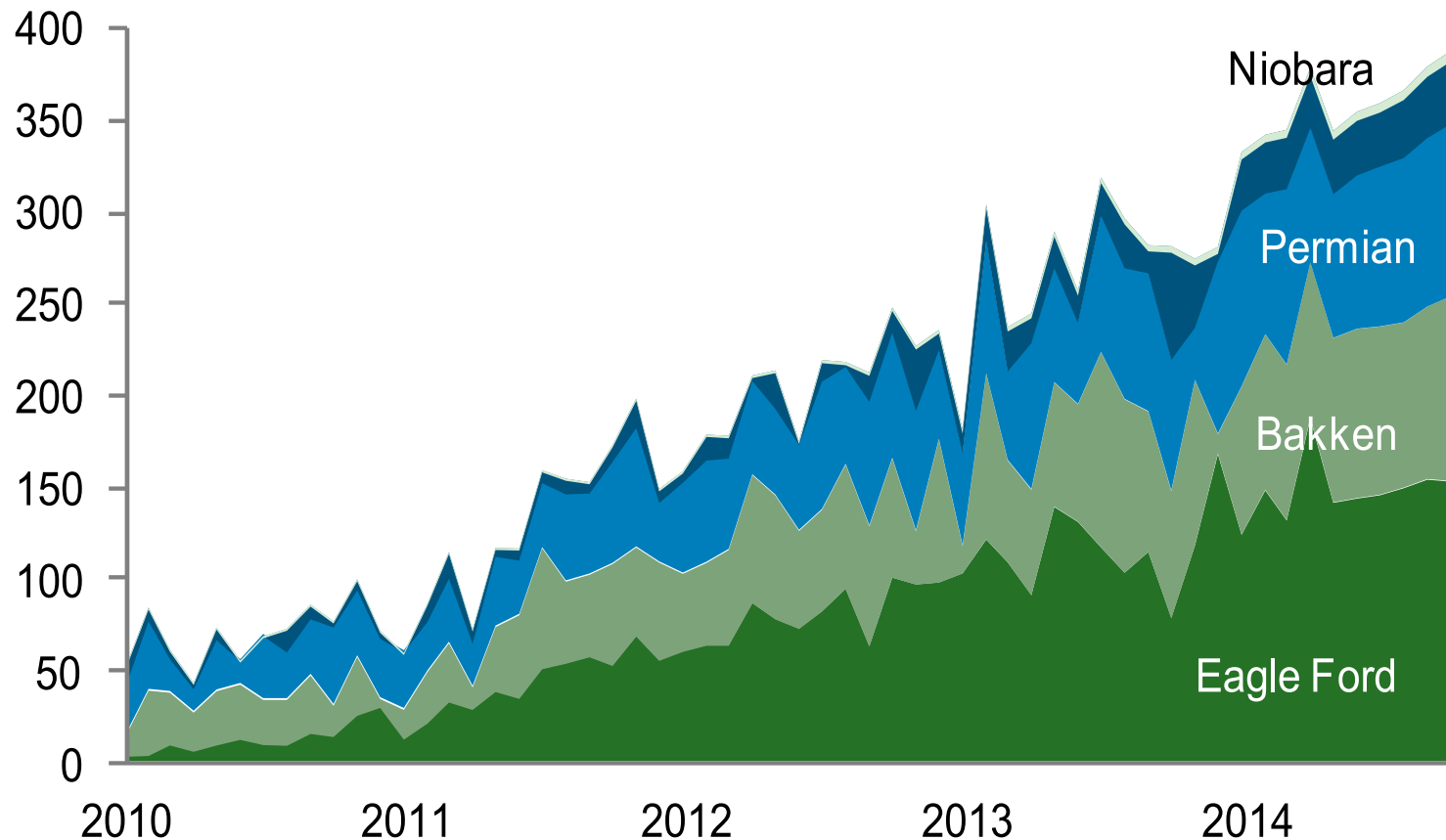


Y/Y growth in tight oil output yet to flatten out

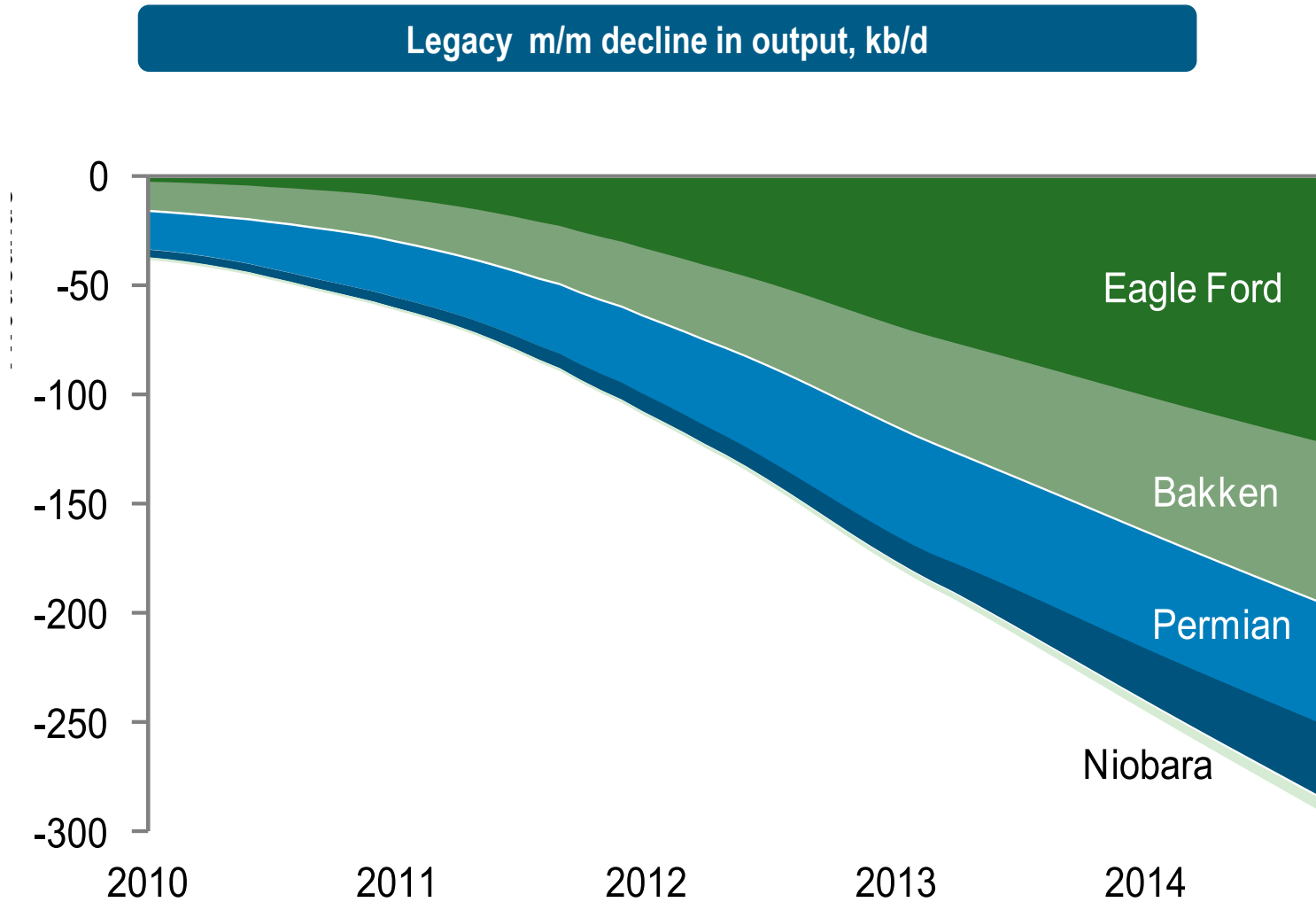


Running faster to stay ahead

Gross new oil output m/m, kb/d



The declining slope



Medium term oil demand and supply

Demand :

- Global Oil demand may reach 100 mb/d by the end of 2019. Demand grows by 7.7 mbl/day during the same period to 99.06. Peak oil demand may be reached by the end of the decade and demand may start decelerating after that due to high oil price, environment concern , cheaper and cleaner fuel may kick in. Chinese demand growth contributes about 30 % of as against 60 % historically.
- Significant improvement in average vehicle efficiency in US and Europe. The average consumption of about 9 litres of gasoline for 100 km in US in 2008 is likely to come down to just over 5 litres per 100 km by 2019. For Europe, these are 6 litres and over 4 litres.
- Fuel Switching growth , efficiency gains, clean air would erode demand growth. Mounting inter fuel competition and not only in stationery use but also in transportation use. The fuel switch is forecast to roughly 1.5 mb/d between 2013-2019. Fuel switching happening in Road and Railway transportation in US.

Supply:

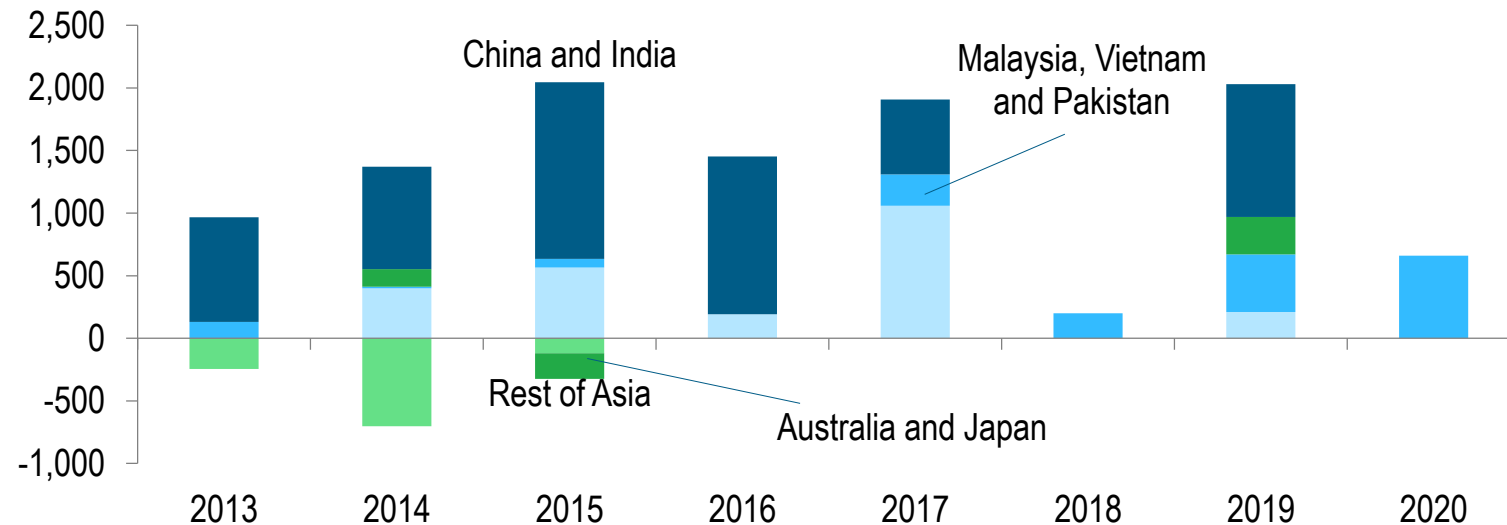
- Total supply capacity is forecast to increase by 9.1 mb/day by 2019 to 105 mb/d by 2019 from 2013 averaging growth of 1.5 mb/day.
- The excess of demand growth over production capacity which takes implied OPEC spare capacity from 4.5 mbl/day to 6 mb/day.
- OPEC capacity grows 2.9 mb/d to 44.2 mb/d, an increase of 6.9 % where as Non OPEC grows by 6.9 mb/day and increase of 11.4 %.
- US Light Tight Oil would contribute 27 % of this growth. Iraq , UAE, Angola and Iran contributing most of the OPEC growth.
- US ,Canadian and Brazil contribute to the Non OPEC supply growth. The production grows 2.8 mmb/d in US ,1.2 mb/d in Canada and about 1 mb/d in Brazil during this period.
- Political and security issues continue to impact capacity growth esp in Iraq, Libya and Nigeria . Among non OPEC producers. Argentina. Kazakhstan & Mexico will enjoy production gains towards the end of the decade when US and Canadian supply growth slows down.

China's refinery capacity expansion is not over

- Global refining capacity would grow 7.7 mb/day during 2013-2019 predominantly in China and M East.
- The growth is in line with Oil demand growth but surplus to increase by 2 mbd/day as 25 % demand to be met by surpassing refining –NGL, Bio fuel, GTL, CTL.
- Excess refining capacity and increased US runs have kept simple margin negative for 2013 and 2014

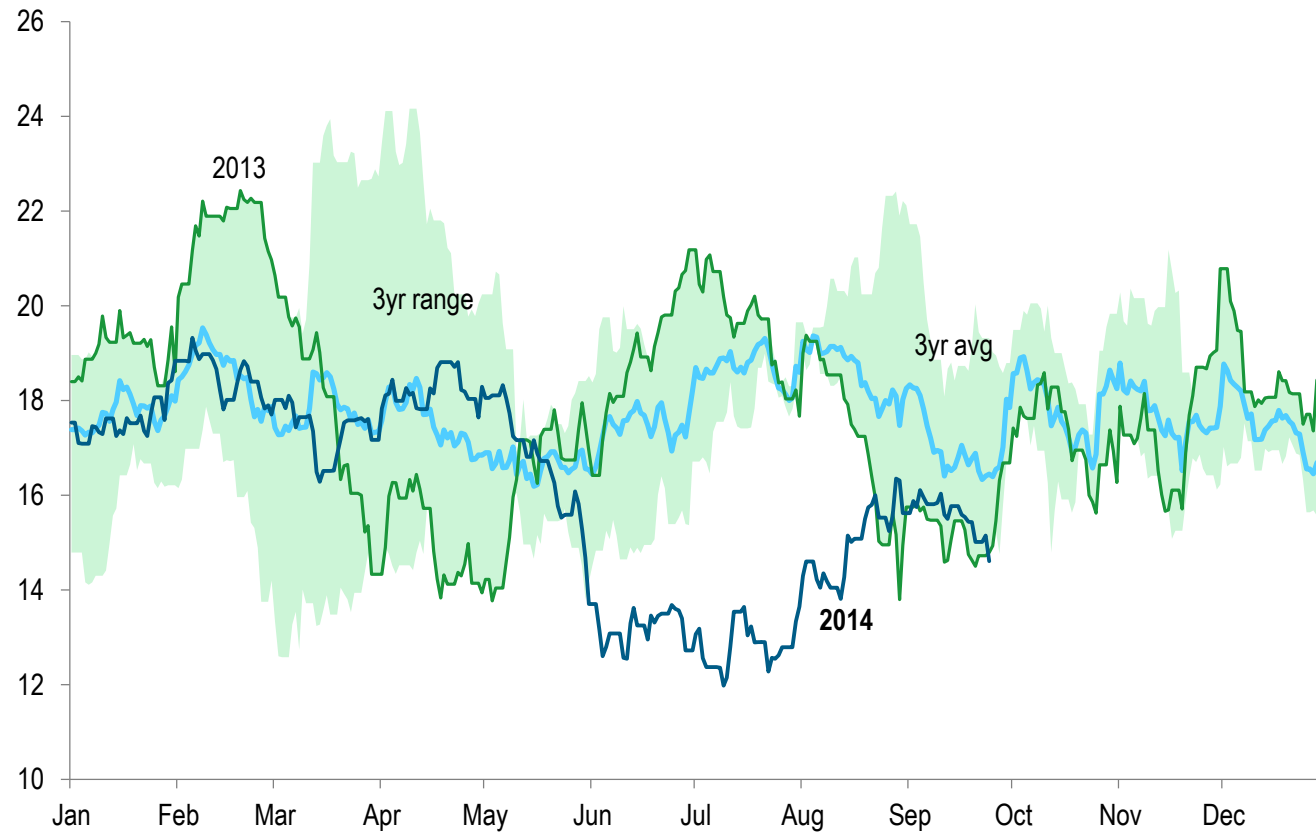
Source : IEA

Standard Chartered estimates of regional capacity changes, kbd



Diesel Spreads under pressure

Refinery capacity and sluggish regional demand weigh down on cracks, USD/bbl





III. Oil Price Risk management

Risks and Issues with Oil Price Volatility

6. Time to adjust

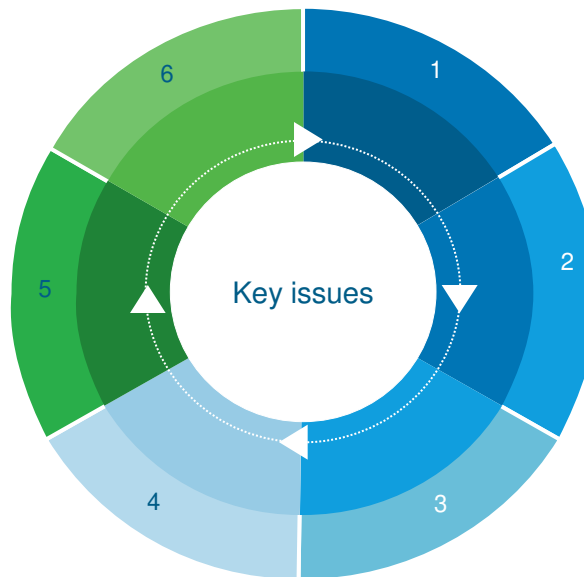
- Consumers typically require time to adjust to new price regimes

5. Financial distress or disaster

- A sudden run up in oil prices can lead to financial distress, its consequent impact on currency, current account deficit, higher taxes, credit rating etc.

4. Uncertain Environment : Inability to commit

- An uncertain fuel subsidy bill could encourage governments to create a large buffer instead of committing for development



1. Pass through : Only Partial

- Prices increases can be passed through only in some products
- Sudden and sharp rise in prices are difficult to pass through.
- Some of the subsidised products would not have a liquid hedge market. For example LPG. Brent can be a good proxy though.
- Local taxes

2. Pass through of cost or Inflation

- There is a pass through of inflation both direct and indirect in passing through the rise in oil prices.

3. Fiscal deficit

- The volatility in oil prices may lead oil importing nations to miss its budget on oil subsidy bill and consequently fiscal deficit targets

Risk Management therefore is a Credit Strength

- Disclosure of the government's risk management program to rating agencies and investors can mitigate concerns and build confidence in a sovereign's medium-term outlook
- Improved messaging to external stakeholders can translate into more competitive financing costs amongst other things

A few of the benefits to articulate are that:

- A hedge provides immediate insulation from the fiscal stresses oil price volatility presents
- A hedging program ensures a stable supply, regardless of the price of oil
- Hedge payouts are formula driven and received quickly, allowing rapid response to shocks
- Increased expenditure predictability will in turn enhance the government's ability to maintain its subsidy programs and continues economic growth
- Implementing a hedging program is therefore a major credit strength, resulting in:
 - More even fiscal performance
 - Increased debt sustainability – rating agencies' and investors' primary concern

Options for managing price risk

	Volatility Protection	Considerations
Financial Instruments	 <i>Immediate</i>	- Payout directly related to oil price - Automatic, rapid disbursement - Larger upfront costs - Financial instruments may involve counterparty risk
Oil Linked Investments	 <i>Immediate</i>	- Asset structure with payoff linked to Oil prices - Coupons are paid on a monthly/ quarterly basis - This is also a funded structure - Financial investments may involve counterparty risk
Oil Linked Borrowing/ Bonds	 <i>Limited time for buildup - Issuance</i>	- Coupons / principal are inversely directly linked to oil price – lower coupons on rise in Oil prices - Cost of borrowing and subscribed amount dependent on investor interest - Capacity to borrow through such alternate structures could be limited
Strategic Petroleum Reserve	 <i>Time required for build up</i>	- An SPR provides a buffer, eliminating the need to purchase oil at higher prices in case of a spike - Significant costs could be incurred in maintaining physical storage capabilities - Significant capital investment - May have limited effectiveness in case of a prolonged rise in prices
Stabilization Fund / Fiscal Rule	 <i>Time required for build up</i>	- Insulation possible up to the amount of resources set aside under fiscal rule or in stabilization fund. Requires time to build up sufficient resources - May lock up assets in low yield securities - Time is required to establish a credible track record with credit rating agencies and investors
Sovereign Wealth Fund/ State Owned Oil Corporations	 <i>Time required for build up</i>	- SWFs make investments that have long incubation periods and therefore tend to be less liquid, making it difficult to draw on resources quickly - Assets likely to be correlated with oil price, meaning values may be depressed at the same time as oil revenues decline - Time is required to establish a credible track record with credit rating agencies and investors - Large Capital Investment

What do sovereigns employ?

Sovereigns around the world are increasingly managing financial market exposures through explicit and implicit hedging programs - a select few are highlighted below

Egypt

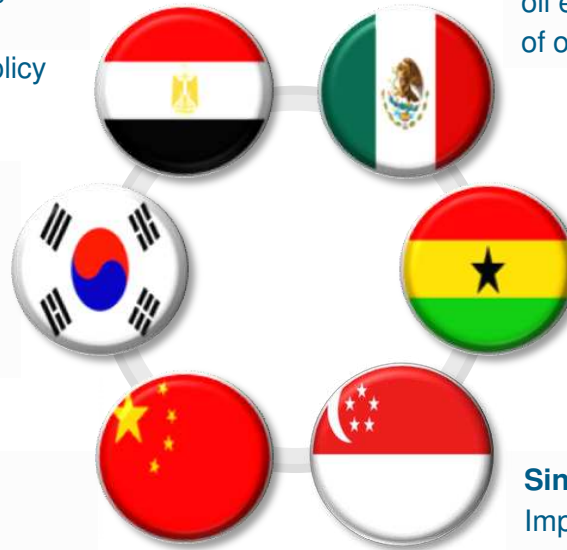
An implicit hedging program in which the government purchases wheat in bulk at longer tenors. Egypt is the world's largest wheat importer and ensures supply through this policy

Korea

Explicit hedging program in which the government manages foreign exchange and interest rate risk through forward and cross currency swaps with large bank counterparties.

China

Explicit hedging program whereby the government enters into foreign exchange and swap contracts with counterparties to manage currency and interest rate risk



Mexico

The Government of Mexico has been hedging its oil exports for many years, given the importance of oil revenue to its economy

Ghana

An explicit hedging program in which the government purchases premium paid call options in strips through out the year. The government is now also executing producer hedges

Singapore

Implicit program entailing extensive investment in energy and commodity assets, hence offsetting its natural short commodity position

Credit Rating Agency Views on Hedging

- Credit rating agencies and investors alike view appropriately-designed hedging favorably
- Hedging insulates the country from the stresses commodity price spikes cause. This insulation increases debt sustainability – investors' and rating agencies' primary concern



- Program to hedge it from the adverse impacts of oil price spikes
- The program reflected a proactive approach to risk management and helped abate a certain element of negative pressure on the sovereign credit rating



- Similarly Mexico's oil hedging program helped safeguard the 2009 budget from an unexpected drop in oil prices
- The IMF lauded the program for helping to stabilize the government's current account balance and preventing fiscal constraints



IV. Financial Instruments

Financial Instruments - Overview

- There are various instruments available to governments that wish to hedge their exposure to oil price volatility through the financial markets. The level of protection and cost of the strategy varies by structure

Call Option	Deferred Premium Call Option	Zero-Cost Collar
- A call option gives the buyer the right, but not the obligation, to buy a specified amount of oil at a set price in exchange for paying an upfront premium - If the price increases above the predetermined “strike” price the client will receive a payout - If the price remains below the “strike” price the option expires unexercised and the producer retains upside to the market	- Similar to a call option but the premium payment is deferred - Similar protection as a call and provides reduced cash flow funding requirements for the premium payment (upfront versus deferred)	- The simultaneous purchase of a call option with the sale of a put option at different strike prices. No premium is paid in this structure - If oil prices increase above the call “strike” price the buyer will receive a payout - If oil price drops below the put “strike” price the buyer is liable to make a payment to the trade counterparty - If the price of oil fluctuates between the put strike and call strike, no payments are made
Call-Spreads	Swap	Three-Way Collar
- A call spread provides upside protection for a fixed quantum by selling a \$100/bbl call and buying a \$80/bbl call - Premium payment required is less than a standard call option but the level of upside protection is limited to \$100/bbl - Useful for markets where there is limited upside risks	- A swap exchanges the reference price for oil a fixed price for a known volume of exports over an established period of time - Most plain vanilla structure available; the price sold is the price locked in for the buyer - If oil prices were to drop, the buyer would not benefit from the drop for the hedged volume	- A Three-Way Collar involves a sell of a call option, the purchase of a lower strike price call option and the purchase of a upper strike price put - Main benefit is that the producer gets at-the-money (ATM) downside protection vis-à-vis a wide banded range hedge in a Zero-Cost Collar

Call Options

- Call options will allow the buyer to retain full downside benefits from low oil prices while reducing exposure to oil price volatility, insuring against a rise in oil prices and increasing budget predictability
- Call option-based hedging programs are most suitable for oil-consuming governments as they offer a simple, low risk solution

Why a Call Option?



Economic/Financial Benefits

- ✓ *Provides insurance against oil price rises*
- ✓ *Increases budgetary predictability*
- ✓ *Allows the capture of full benefit of oil price increases*
- ✓ *The only cost is the premium. No hidden costs. This can be deferred using the Deferred Premium Call Option*



Immediate Protection

- ✓ *Formula driven mechanism ensures quick, automatic disbursement of funds in case of low oil prices*
- ✓ *Most sustainable over medium term, as part of ongoing risk management framework embedded in budget process*



Least Political Risks

- ✓ *Easiest to explain to constituents*
- ✓ *Other structures involve unpredictable outcomes such as potential collateral calls and lost upside, presenting substantial financial and political risks*
- ✓ *The unpredictable outcomes of other structures can undermine the effectiveness of the hedging program entirely*

Call Options – Payoff Description

Description

- An option contract giving the buyer the right, but not the obligation, to buy a specified amount of an underlying commodity at a specified price within a specified time

Proposed Strategy

- The buyer agrees to lock its exposure to Brent Crude prices by buying a call option from the seller

Benefits

- The buyer is protected from any rise in Brent Crude prices above the option strike price

Risks

- If oil prices settle below strike price at maturity, the buyer of call option loses the amount paid as up-front premium. However, the buyer will be able to import oil from the global markets at prices below the strike price in this scenario

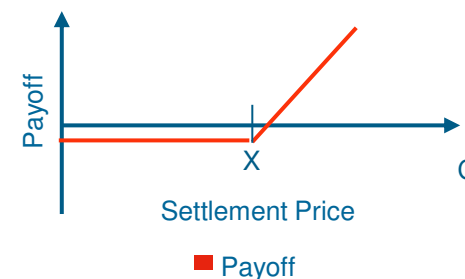
Trade Details

Importing Country	Buys Call Option
Notional Quantity	N bbls per month
Strike Price	USD X per bbl
Settlement	Monthly, Asian*
Settlement Price	USD per bbls Settlement price of near month Brent futures quoted on The Intercontinental Exchange

At Every Settlement If the settlement price is greater than the strike price, seller will pay the buyer will pay the difference between the settlement and the strike price multiplied by the volume hedged

If the settlement price is less than the strike price no payment is made but the buyer benefits from lower oil prices

Payoff



Call Option: Insurance & Disaster Insurance

Typical Execution

Hedge Volume:	▪ 30-40% of subsidized volume, to start ▪ Ratio can be increased over time
Strike Price:	▪ At or higher than oil price assumed in the budget
Time Frame:	▪ Next financial year ▪ Explore 1 year hedges in future
Number of Banks:	▪ Select maximum of 3 banks to ensure: – Confidentiality – Best execution – Price transparency

Indicative Premium Cost at Different Put Strikes

1 Year Hedge: Apr15 to Mar16

Indicative price level based on Brent Close of 3rd Oct14

Strike Price (US\$/bbl)	Premium Cost (US\$/bbl)	Cost for 1 mmbbl/month Hedge (US\$ mn)
\$100	4.45	53.40
\$105	2.90	34.80
\$110	1.85	22.20
\$115	1.25	15.00
\$120	0.80	0.96

Call Option Strikes

The lower the strike of call option the higher the premium and vice versa

Countries look at different strikes for different product and circumstances

Products in which oil price rise can be passed through may need insurance /disaster insurance at a strike level beyond which pass through can have serious political and economic implications.

Products where there is no pass through would need a protecting with a lower strike call.

There can be different Call strikes for different months for the same product.

Deferred Premium Call Option

Description

- A Deferred Premium Call Option is a traditional call option without an upfront premium. At monthly settlements, the premium is paid by the buyer or netted against any option payoff from the seller to the buyer
- The differences between a deferred premium option and a standard option are the timing and size of premium payments
- The all in cost for a deferred premium structure is higher than a regular premium structure due to interest cost. Therefore the breakeven cost is higher.

Proposed Strategy

- The buyer agrees to lock its exposure to Brent Crude prices by buying a call option

Benefits

- The buyer is protected from any rise in fuel oil prices above the option's strike price, just as in a traditional call option
- The buyer, in addition, gains the benefit of improved cash flow management, as the premium payments are linked to the floating price of crude

Risks

- If oil prices settle below strike price at maturity, the buyer will continue to pay the deferred premium. However, the buyer will be able to import oil from the global markets at prices below the strike price in this scenario

Trade Details

the buyer:	Buys Deferred Premium Call Option
Notional Quantity:	N bbls per month
Strike Price:	USD X per bbl
Settlement:	Monthly, Asian*
Settlement Price:	USD C per bbls, Settlement price of near month Brent futures quoted on The Intercontinental Exchange
At Every Settlement:	If the settlement price is greater than the strike price, the seller will pay the buyer the difference between the two multiplied by the volume If the settlement price is less than the strike price no payment is made to the buyer, however, the buyer benefits from lower oil import prices In both cases the buyer pays deferred premium to the seller
Deferred Premium:	% of Settlement Price

Call Options – Comparison with Stabilization Funds and SWFs

Unlike call options, stabilization funds need to be funded to sufficient levels to provide an adequate buffer against price increases

Call Options

- ✓ One time premium payment, akin to an insurance premium, will provide protection regardless of how high oil prices go for the volumes hedge
- ✓ There is no prefunding required if oil prices increase beyond the pool of available monies in a stabilization fund
- ✓ The payout is realized as soon as the option is exercised
- ✗ Upfront premium has to be paid – can be deferred



Stabilization funds

- ✓ No upfront cost to creating a Stabilization fund
- ✗ Stabilization funds have in the past run up large deficits or had to be replenished from other sources
- ✗ Deficits in the Oil stabilization funds have been experienced by Thailand, Cameroon, Ethiopia, Malawi and Peru

Sovereign Wealth Fund/ Asset Purchases

- ✓ Could potentially provide a supply of Crude oil as well as a hedge against price rises
- ✗ Cost of asset purchases involved in hedging could be significant - depending on the asset
- ✗ Returns from the asset may not be directly linked to the rise in oil prices

Crude Oil Linked Investments - Principal Protected Notes

Description

- A Crude linked Principal Protected Note provides a return on an invested Notional that is linked to the prevailing Crude Oil prices

Proposed Strategy

- The Investor obtains a payoff on the invested amount with a coupon directly linked to Crude Oil prices

Benefits

- As with financial instruments, there is an cash flow (at the end of the tenor) from an increase in Crude oil prices
- The coupon payments can be structured to match cash flow requirements

Risks

- Returns from the investment can be lower than traditional investments depending on the prevailing Crude Oil prices

Trade Details

investor:	Invests in a Crude Linked PPN
Notional :	[N] USD
Start Date:	01 Jan 2015
Maturity Date:	31 Dec 2015
Notional and Coupon Currency	USD
Principal Protection:	[A%]
PPN	[B]
Strike	[S] USD per barrel
Payoff on Maturity Date:	Investor receives $N \times (A + B \times (\text{Crude Oil Price Average} - S))$ Crude Oil Linked Return

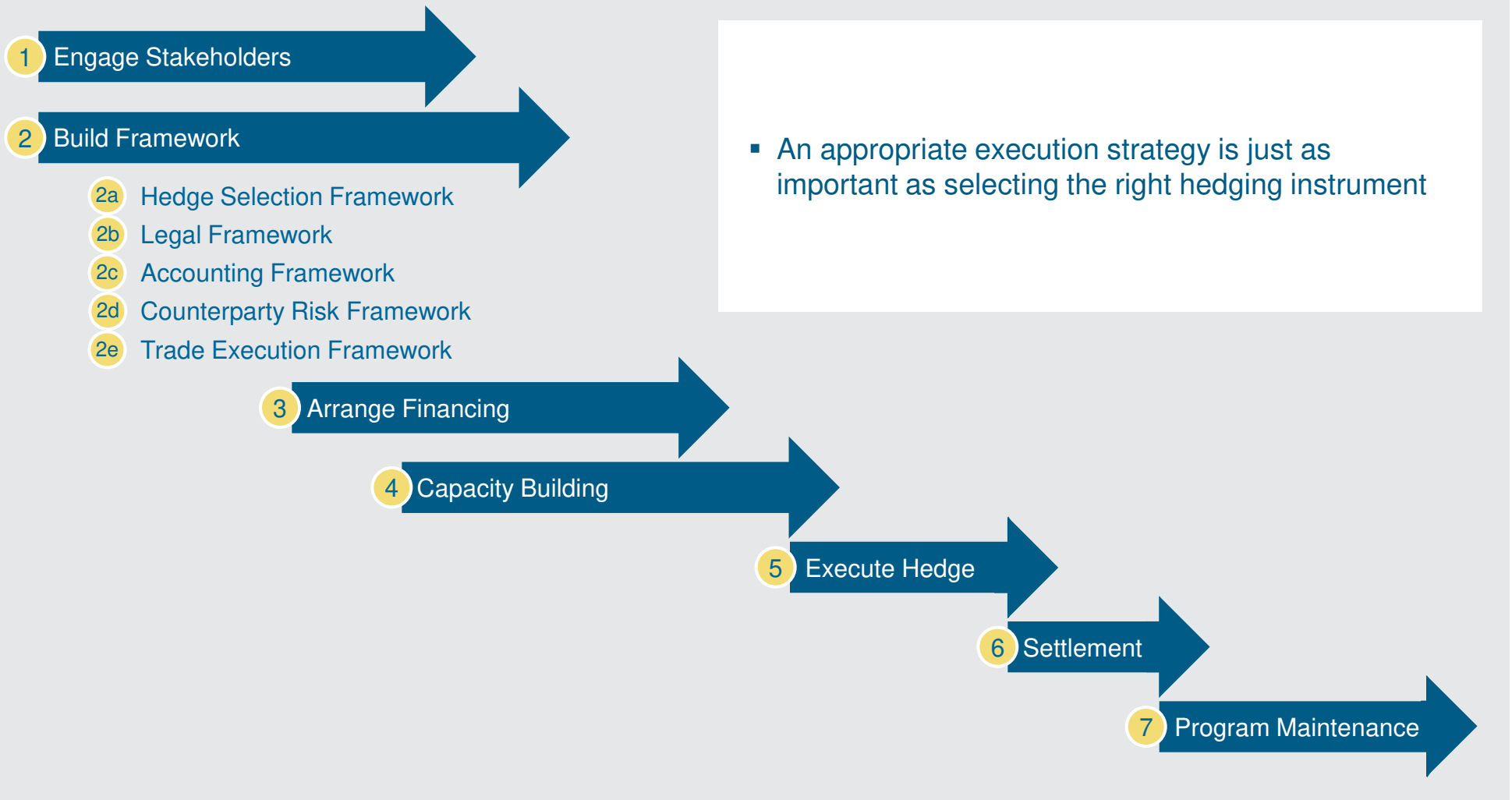
Potential FX risks

- We note that while Oil purchases (and exposure) are in US Dollars, the subsidies would be exposed to fluctuations in USD local currency risk given domestic pricing would be managed in local currency
- The effective price risk essentially is Oil in local currency terms [e.g. Diesel in INR terms for India]
- All of the financial instruments offered can also be priced in local currency terms [as a composite] in order to match the underlying exposure. This allows for a better aligned hedge



V. Execution

Execution Sequence



Engaging Key Stakeholders is Vital

- Governments prefer to maintain confidentiality of a hedging program to prevent detrimental market movements
- However, we understand that certain sovereigns may need to disclose their hedging programs due to their own unique considerations.

	Key Stakeholder Concerns	Addressing the Concern
Federal Government	▪ How do we justify the cost of the hedge? ▪ What financial risks are presented by various hedging strategies? ▪ What is the political risk if a hedge does not perform well?	▪ Reduced economic and budgetary volatility more than offsets the cost involved ▪ Better positions the public and private sectors to commit long term funds to development programs ▪ Reduces political risk from oil price shocks
Multilateral Agencies	▪ How will the hedge impact government finances? ▪ What are the risks involved with the hedge?	▪ Risk management program will strengthen government finances in the long run, by reducing the impact of shocks ▪ We recommend a low risk hedging program – one with limited/no downside and no hidden mark-to-market risks
General Public	▪ Given hedge cost, would government funds be better directed into development priorities?	▪ Increased revenue predictability ensures no abrupt delays or terminations of important infrastructure developments
Rating Agencies & Investors	▪ How would government finances be impacted by an increase in oil prices? Would an oil price increase exert downward ratings pressure? ▪ How will budget volatility from oil price movements impact country's debt sustainability?	▪ The country should ensure the risk management program is low risk, which will allay any agency / investor concern. Call options offer the lowest risk strategy: – Both rating agencies and investors will support insurance-like upfront payments – However, they will have an unfavorable view of other structures presenting hidden mark-to-market risks or political ramifications if a potential oil price upside is foregone

Financing any upfront premium requirements

- We recognize that hedging with a premium-paid structure represents a cost
- Should the country choose to execute a fully premium paid option, there could be solutions to provide for the initial premium, some of these options are discussed below

Upfront Cash Payment	▪ The simplest option is an upfront cash payment ▪ The payment is similar to a one time insurance premium, with no further settlements required
Issuing Local Currency Bonds	▪ The country could possibly use local currency bonds to fund the cost of the premium ▪ A viable option considering the Government may issue local bonds to bridge its funding gap, part of these funds could be sequestered for hedge premiums
Bridge Loan with Bond Takeout	▪ Take out a bridge loan, to be subsequently retired through a bond issuance



VI. Examples of Risk Management Approaches

Ghana: Tailored Solution

- Ghana's recent experience with volatile commodity prices highlighted the risks to its budget and balance sheet
 - Avoiding future volatility required proactive risk management solutions
- Standard Chartered Bank helped identify and implement a tailored solution for the Government of Ghana
 - The transaction took over four years to bring to completion – with Standard Chartered Bank the only bank present at every step
 - We ensured a successful transaction by conducting numerous trainings across multiple agencies, bureaus and stakeholders, to ensure widespread buy-in and the necessary skills-transfer
- This patient approach is a result of our long-term commitment to the geographies we operate in, which gives us an unrivalled edge in tailoring and executing appropriate and sustainable solutions
 - Our team understands the critical role that capacity building and skills transfer play in sustainable, long-term solutions to sovereign risk management
- The following presentation is an example of our three stage approach to partnering with our sovereign clients:
 - Identify Risk
 - Craft Solution
 - Transfer Skills

Ghana: Crude Oil Consumption Hedge

Transaction Summary

Counterparty	Ministry of Finance and Economic Planning, Ghana
Transaction Type	Vanilla call option
Commodity Type	Brent crude
Notional Amount	6 million barrels
Tenor	6 month option period with monthly take up
Details	Customer will settle 6 million barrels over a 6 month period (i.e. 1 million barrels per month)

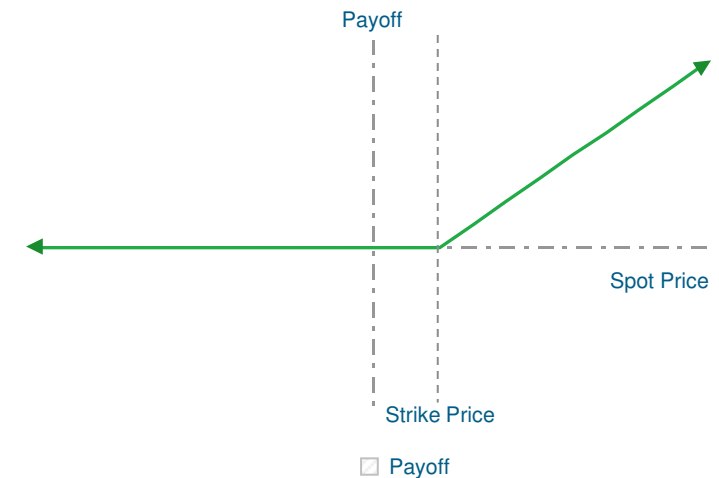
Transaction Highlights

- Ghana has an annual requirement of 12 million barrels of crude oil. Recent international oil price volatility caused substantial budgetary and macroeconomic stress
- The Government of Ghana required a solution that could mitigate oil price volatility risks
- The Government opted to enter into a premium paid vanilla call option that would allow them to purchase Brent Crude at a predetermined price (strike price) if the spot price (current market price) were to move above the strike price on the trade date. If the spot remained below the strike price the option would go unexercised
- If the option went unexercised the only cost would be the premium paid on the option
 - The Government treated the premium cost as akin to the cost of an insurance policy
- SCB worked extensively with the Government of Ghana to ensure the transaction's success, through managing stakeholders, training, and constant briefings and updates

Ghana

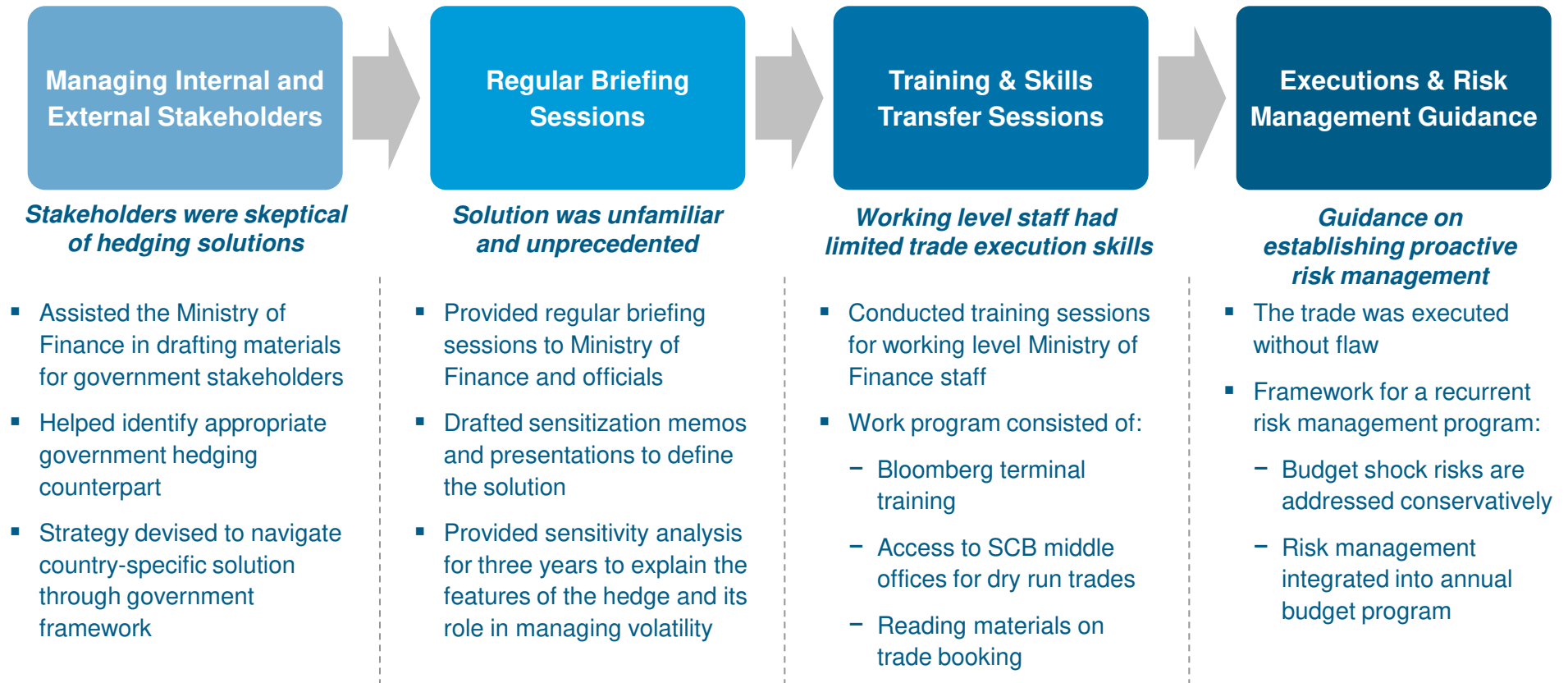


Call Option Payout Structure



Ghana: Capacity Building & Skills Transfer

Comprehensive advisory, skills transfer and training across all stages of the transaction

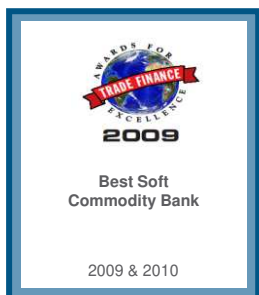
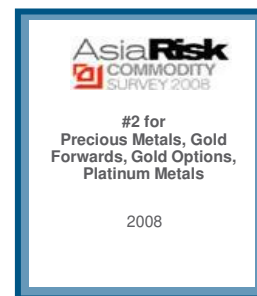
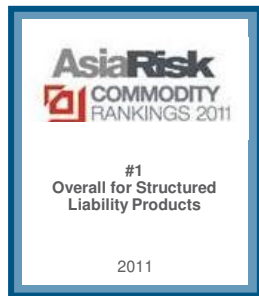
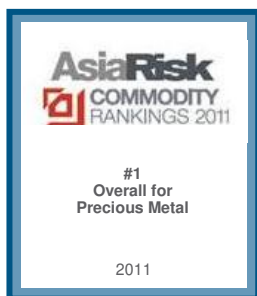


SCB is committed to providing its clients with sustainable forward-looking risk management practices



VII. Why SCB?

Credentials





VIII. Contacts

Contact information

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India

Disclaimer

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