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The Falling Crude Oil Prices: Mitigating the Risk

Prepared by the staff team of the IFS

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All enquiries should be directed to:

The Executive Director, IFS

1. Introduction

Crude oil prices have been falling sharply on the international petroleum market since July 2014. For Ghana, this poses a serious threat in the sense that, this phenomenon could lead to significant reduction in oil revenue which could worsen the projected fiscal deficit in 2015 and in the medium term. This development will naturally have serious negative implications for macroeconomic stability and economic growth in the country. Ghana's economic recovery therefore seems to be inextricably linked to oil prices recoveries. The recovery also hinges critically on the government's ability to mitigate the negative consequences of the oil price fall. This paper looks at the implications of the falling oil prices on the international market for Ghana's economy and the government's approach to mitigating the associated risks.

The rest of the paper is organized as follows. Section two presents a brief review of the volatility in crude oil prices during the 2004 to 2008 period and its impact on developing countries. Section three discusses why sovereign states hedge their exposure to fuel and oil prices. Section four discusses the petroleum price risk management program implemented by the immediate past Ghanaian government. This is followed by section five which looks at how the present government is managing the risks of the current fall in crude oil prices. Section Six concludes the study with some recommendations.

2. Crude Oil Prices Between 2004-2008

2.1. Volatility in Prices. Crude oil has experienced significant volatility in prices since 2004, caused mainly by high uncertainties driven both by supply and demand side factors, geopolitical considerations, and speculation. Crude oil prices rose from 2004 to historic highs in mid-2008, only to fall precipitously in the last four months of 2008, shedding all the gains of the preceding four and a half years. The steep price increase experienced from January 2007 to July 2008, in particular, was challenging for many non-oil producing developing countries. While the sharp drop in prices since August 2008 was welcome news for consumers, the cause of it—the global financial crisis—was not. According to the World Bank (2008), the extent of pass-through of the rise in world oil prices to the domestic market showed that developing countries could not keep up with the price increases between January 2007 and August 2008. Correspondingly, retail prices in developing countries increased less than in developed countries during the period.

2.2. Oil Price Risk Management. At the peak of high oil prices, nearly all developing countries intervened with price-based policies to mitigate the price increase on the world market. Policy reversals and postponement of price reform were common. Governments that had earlier deregulated fuel prices or adopted automatic price adjustment mechanisms froze and subsidized retail prices, while those that had announced the removal of fuel price subsidies postponed price reforms. Ghana, which had liberalized fuel prices in February 2005 and set price ceilings in line with world prices, froze the ceilings between May and November 2008. To encourage energy conservation in response to the higher fuel prices, compact fluorescent lamps were distributed to replace incandescent light bulbs. As oil prices continued to climb in 2008, the government considered hedging oil prices, but did not pursue. The large fall in the price of oil after August 2008 provided the government some breathing space. Consequently, in March 2009, the government lowered fuel taxes in response to the falling world prices and also as part of the pledge to ease the financial burden on consumers.

3. Why do Sovereign States Hedge their Exposure to Fuel and Oil Prices?

One lesson that emerges from the previous oil price episodes is that both oil consumers and producers have to prepare for the unexpected. No one anticipated the speed at which oil prices rose in 2008, or the magnitude of the rise. Industry forecasts became outdated quickly, and leading oil industry analysts revised their price forecasts several times. Then, against predictions of prices of $200 a barrel or higher, the price crashed even more suddenly, leading to numerous oil project delays and cancellations, and raising the specter of supply shortage once the global economy began to recover. This suggests that when producers and consumers are confronted with a regime of market-driven oil prices, they need a device to mitigate the impact of volatility in prices. That device would be a tool to reduce the country's exposure to volatile and potentially rising fuel cost. Indeed, fuel hedging appears to be the necessary tool. Through hedging, producers and consumers could enter into a contract to mitigate their exposure to future fuel prices and/or to establish a known fuel cost for budgeting purposes. Thus, if a country is exposed to oil price fluctuations, fuel hedging is a tool that can help eliminate the risk of the country's budgeting out of control.

At the corporate level, companies can ensure stable profits by hedging oil price risk through market instruments such as oil futures contracts available on commodity exchange platforms. A comprehensive oil risk management policy by large firms can also be in the larger interest of the overall economy, as it can restrict the price spillover effects to other sectors. Managing macroeconomic risk on this front, however, needs a sovereign hedging program, such as those undertaken by many oil import-dependent nations, to equip the economy for future price shocks. Such strategies, designed to reduce the risk of large, rapid, and unpredictable price movements by locking in the price of future consumption or production of oil, become very necessary.

There are certainly many situations in which sovereign states can and do benefit from well managed energy hedging programs. When governments and companies decide to hedge, they are insuring themselves against a negative event. This does not prevent the negative event from happening, but if it does happen and the country or company is properly hedged, the impact of the event is reduced. Hedging against price volatility risk therefore means strategically using market instruments such as futures, swaps and options to offset the risk of any adverse price movements. Hedging should therefore be looked at as a form of insurance.

Some sovereign states hedge in a similar way as would a non-sovereign entity to try to limit their exposure to price volatility and the impact on revenue, costs, and/or cash flow. For many, the hedging strategy goes deeper than the name suggests. In most large oil producing countries where the majority of production is owned by national oil companies, the revenues derived from oil are the cornerstone of their economies and perhaps more importantly, their source of funds for infrastructure, health care, education, etc. In many of these countries, if oil prices collapse and remain low for an extended period of time, their infrastructure and social programs are likely to be undermined. On the consumption side, most sovereigns that engage in oil hedging do that on behalf of their state owned refineries and/or fuel suppliers, which often subsidize state-controlled retail fuel prices. In this sense, many in this situation essentially "hedge" the economics of the fuel subsidies.

4. Ghana's Petroleum Price Risk Management

4.1. The Risk Management Policy. On the heels of the upsurge in oil prices on the international market in 2008 and most part of 2009, the Government of Ghana started exploring the possibility of hedging crude oil prices as part of the measures to reduce the impact of the oil shock on the economy. Oil prices rose - to US$73.23 a barrel on June 11, 2009 amid concerns that massive Unites States fiscal spending would spark inflation down the road, making oil and other commodities attractive investment alternatives. The benchmark crude for July 2009 delivery rose by US$0.77 to US$72.14 a barrel in Europe in electronic trading on the New York Mercantile Exchange. After hitting an eight-month high of US$73.23 on June 11 2009, oil price stayed above US$70.00 a barrel until the end of June 2009 on investors' optimism that the global economy was stabilizing from the severe slowdown.

In pursuit of the policy to insulate the country from the escalating crude oil prices, Cabinet at its meeting on March 11, 2010 approved a Commodity Price Risk Management Policy submitted jointly by the Minister for Finance and Economic Planning and the Minister for Energy. The primary objective of the program was to contain the phenomenon of crude oil price volatility, and in so doing achieve price stability and guarantee the availability of petroleum products on the domestic market. The considerations that guided the establishment of the hedging program were two-fold. First, the country's macroeconomic stability had been threatened in the past by external commodity price shocks, mainly the increases of crude oil prices. Rising crude oil prices created public pressure on the government for subsidization of the prices of refined petroleum products. Second, in the recent past, there was a growing consensus that crude oil price in the short to long term would assume an upward direction as world demand increasingly outstripped supply.

Following Cabinet's approval of the program, a nine-member Risk Management Committee was inaugurated with the responsibility that included

- Risk Assessment
- Risk Decision Making
- Implementation of Risk Controls.

The committee was to focus primarily on when and how Ghana can best hedge against costly exposures to crude oil price risk. Further, the committee was expected to use insurance instruments to cap the import parity price of petroleum products in order to achieve stability in the ex-pump (retail) price. The Committee was charged with the responsibility to decide the price at which to hedge the country's petroleum purchases, especially for petrol and diesel. Commodities which were considered for hedging immediately were premium gasoline and gas oil while export of crude oil was being considered to be hedged at a later date. To strengthen the oversight of the hedging program, Cabinet directed in October 2010 that the Risk Management Committee should be reconstituted as a NATIONAL RISK MANAGEMENT COMMITTEE appointed by the President and reporting to Cabinet through the Minister for Finance and Economic Planning. The reconstituted Committee had representatives from the following institutions.

- Ministry of Energy,
- Ministry of Finance and Economic Planning,
- Attorney General's Department,
- Bank of Ghana,
- Ghana National Petroleum Corporation,
- Cocoa Marketing Company,
- Volta River Authority

4.2. Implementation of Hedging Program. The implementation of the Petroleum Price Risk Management Program commenced in October 2010 to offer a measure of protection to the country from oil price escalation up to a locked-in maximum price while allowing for the benefits from lower prices. The hedging program involved the purchase of both the 'call' and 'put' options from counterparty banks, namely, Standard Chartered Bank, BNP Paribas, Citi Group, Barclays Capital, Standard Bank Africa, Deustche Bank, Morgan Stanley and Goldman Sachs. The call option specified a strike price which was a cap on the price of crude oil purchases over the duration of the option, thus insuring against price volatility around the cap, which was settled in cash by the counterparty banks in the country's favor. The call option ensured that

Ghana retained the option to buy at the open market price if the price of crude oil fell below the cap. The put option gave the country the right, but not the obligation, to sell crude oil at a set price (the strike price) over the duration of the option.

Initially, the government hedged at a strike price of $82.50 per barrel on monthly volumes of 1,000,000 barrels. Subsequently, as the market price of crude oil went up, the strike prices were adjusted upwards to contain the cost of the hedge. Up to the end of 2011, the government was hedging on 2,000,000 barrels per month at an average strike price of $115.00 per barrel. , namely

It is interesting to mention that following projections made by the World Bank and the IMF for 2011 with regard to a barrel of crude oil, pegged at US$78.75, the international community warned that Ghana's decision to hedge a barrel of oil at US$82.50 for six to 12 months could have dire consequences on the fragile economy. The Bank and the Fund categorically stated that the price for a barrel of crude oil would remain unchanged in real terms in 2011 and in the medium term (see IMF, 2008). The government, however went ahead to bet the price of the crude oil at the rate of US$82.50 per barrel as against the World Bank and the IMF projections. Four months later, the crude oil price surged past US$115.00 per barrel. Following the success of the program, the scope of the hedge profile was expanded to provide a 100% cover for the country's oil imports beginning in July 2011. In January 2012, the government announced that it was hedging crude on a quarterly basis.

The commencement of crude oil production from the Jubilee Field created a new price risk exposure for the country since an estimated GHS1.3 billion from crude oil sales was projected as government revenues for fiscal year 2011 based on a crude oil price of USD70.00 per barrel, later revised to USD100 per barrel. To protect the oil revenue to enable it support fiscal stability, the scope of the hedging program was expanded in May 2011 to include petroleum revenues. The instrument for achieving the revenue protection was a put option under which the country had the option to sell crude oil at a price of US$107.00 per barrel through to the end of 2011. The US$107.00 per barrel benchmark was thus the minimum threshold for pricing Ghana's share of the oil revenues from the Jubilee field notwithstanding any possible collapse in Brent crude prices. Up to the end of 2011 fiscal year, 100% of the anticipated fiscal receipts from crude oil exports were fully hedged. Thus the projected revenue from crude oil production in 2011- 2012 budgets remained stable.

It needs to be emphasized that Ghana's hedging programs were not designed to make speculative profits. The hedging program was primarily an insurance program to buy protection to ensure that over a reasonable period, there was a predictable maximum price for consumption and a minimum price for exports.

4.3. Performance of the Hedging Program. The hedging program was tremendously successful, and together with other prudent policy measures pursued by the government, it brought about one of the longest periods of monetary and fiscal stability in the history of the country's economic management. In the first two months of the implementation of the program, marginal losses were made. Thereafter, the hedge recorded net surpluses which summed up to over US$70 million in April 2011. As at the end of August 2011, the hedging account had accumulated a surplus of $98.4 million (net of premium costs of $63.7 million).The key benefit of the hedging program however was the stabilization of prices of petroleum products which were partially protected as crude oil prices soared from US$78.00 per barrel in September 2010 to US$125.00 per barrel in April 2011. Over the same period, the average monthly price of the benchmark Brent crude oil increased by 47 percent to reach US$116.00 per barrel in June 2011. As a result of the hedging program, the frequency of petroleum products price adjustments fell sharply beginning in 2010. Indeed, there were no price adjustments in 2010, two price increases occurred in 2011, and one downward price adjustment was made in 2012. Of course, some of the increases were huge, making the trade unions to complain bitterly about the price adjustments.

In presenting the 2012 Budget in Parliament on 16 November 2011, the Minister for Finance and Economic Planning indicated that the under-recovery of petroleum pricing for 2011 was estimated to be GH₵364.9 million, based on the assumption of crude oil price of US$110.23 per barrel. The Minister also intimated that as at September 2011, government had subsidized the ex-pump price of petroleum products to the tune of GH₵267.6 million, and this was made possible partly by the gains from the hedging program. The IMF also reported in February 2012 that the sizable hedging gains in the first half of 2011 allowed fuel subsidies to be covered through July. Thus the government's far-sighted decision to implement the hedging program helped insulate the economy from the rising petrol prices from the last quarter of 2010 through mid-2012. The implementation of the program also helped to avoid the recurrence of the vicious cycle of petroleum products price increases in the country.

5. Managing the Risks of the Falling Oil Prices

Ghanaian consumers have been witnesses to the negative impact of rising petrol prices in periods of oil price surge. It was not only the cost of filling the tank that was crippling, but also the knock-on effect of spiraling food prices ended up creating havoc in household budgets.

In Ghana, both statistical and anecdotal evidence point to the fact that higher oil prices have serious negative impact on economic performance. Whenever there is a rise in petroleum prices, all transport-related businesses face the decision of whether to raise their charges to shift the increased costs onto consumers or not. Taxi and *trotro* fares will predictably go up and airlines may raise fuel surcharges. Given the pre-October 2010 state of affairs therefore, one can state unequivocally that the country benefited greatly from the hedging program.

Keeping fuel cost within a predictable range protects the economy from unexpected changes in the Price of fuel – changes that could otherwise adversely impact on the national budget in particular and on the overall economy in general. With a structural plan and clear goals as set up by the government during 2010- 2012 hedging against fuel price risk can have a significantly positive effect on the national economy.

If indeed this is the case then one may ask, what influenced the decision to discontinue the hedging of Ghana's exposure to crude oil prices in 2013?

At the time the hedging program was discontinued, oil was trading at around US$100 per barrel and by July 2014 the price had jump to US$115 per barrel. However, by the second week of January 2015 the price of this same commodity had dropped to below US$50 per barrel – the most dramatic drop since 2008 crisis.

Meanwhile, a benchmark oil price of US$99.38 per barrel had been factored in the 2015 national budget which was read in November 2014.Now that the crude oil price has more than halved in the past seven months, and predictions suggest a prolonged slump in prices, there is no doubt that, the inaction of the government has dangerously exposed the country. It is clear that the estimated oil revenue in the 2015 cannot be realized.

A recent report by the Institute for Fiscal Studies (IFS) observes that the current falling prices of crude oil on the world market will have serious negative implications for Ghana's 2015 Budget and the fragile economic recovery (see IFS, 2014). The 2015 Budget estimates total revenue from oil at US$1.24 billion (GH₵4.2 billion), equivalent to 3.1 percent of GDP and representing a benchmark price of US$99.38 per barrel and output of 37.2 million barrels (Government of Ghana, 2014). Between June 2014 and the second week of January 2015, however, the price of crude oil plunged by about 55 percent to below US$50.00 per barrel as stockpiles mounted with no sign of a cut in production. Demand for oil is also weak, with the outlook for the global economy remaining subdued. Oil analysts predict that the price could fall below US$40 per barrel before it rebounds. The fall of oil prices has been steep, prompting companies and decision makers to wonder how suddenly unpredictable the market has become, forcing them to take measures to mitigate the numerous risks presented by the fall in price (Miah, 2014).

According to the IFS, at US$100 per barrel reference price and based on the output of about 100,000 barrels per day, Ghana could earn over US$700 million annually from oil exports not including corporate tax receipts, surface rentals and other charges. However, at a price level between US$60 and US$70 that figure plummets below US$500 million on the same output basis, complicating the country's efforts to come out from the deep budget deficits. The government will still miss the estimated oil revenue target for 2015 even if oil production is increased by more than 10 percent over the current levels of 105,000 barrels per day (IFS, 2014).

The President of Ghana is reported to have told Ghanaians living in Germany that Ghana will lose US$700 million in oil revenue this year as a result of the falling price of crude oil on the world market. According to the President, the latest developments on the world market have brought the expected revenue down to US$500 million in 2015 (see Daily Graphic, January 22, 2015 p.3). Besides the fiscal implications, the falling crude oil prices will affect the country's trade balance, current account and foreign reserves. Although the fall in the oil prices will affect the country's export receipts, it will also have positive impact on the country's crude oil import costs. For consumers, the fall in fuel prices is beneficial as it implies an increase in disposable income. Cheaper fuel should also help the country to suppress inflation. Unfortunately, the 2015 Budget staked the medium term receipts from oil and gas on higher prices, so with the falling prices, the expected foreign exchange inflows and corporate tax receipts are set to reduce sharply. This may have serious impact on the exchange rate of the cedi which was tumbling even before the oil prices started dropping in July 2014.

On August 19 2014, the Deputy Minister for Energy in charge of Petroleum disclosed that the government was from September 2014 going to introduce quarterly hedging as a measure to avoid huge debts that were accumulating from the subsidization of price differentials on petroleum products. The hedging program was also expected to protect Ghanaians from price hikes during the review of prices of petroleum products and also ensure that any price volatility on the international market would be contained. The Minister also said that a memorandum on the proposed implementation of the hedging was to be sent to Cabinet for approval before the end of August 2014 (see Daily Graphic, August 20, 2014). This decision appears strange in view of the fact that a National Petroleum Risk Management Committee had been established by Cabinet and approved by Parliament some four years back and indeed hedging took place between late 2010 and 2012. In any case, nothing happened after the Minister's disclosure until mid-January 2015 when the Minister for Finance announced again at a press conference that government was to resume hedging of the country's crude oil imports and exports. The Minister also indicated that the government was looking at how the country can get more revenue by reviewing the current laws governing earnings from crude exports and the pricing formula for fuel. According to the Minister, it is incumbent on government to undertake a major review of the oil sector because this is the first time that Ghana is experiencing a decline in crude price since it started producing oil (Ghana Web Business News, January 19, 2015). What is puzzling to many Ghanaians is that if hedging is considered as a solution to managing the falling crude oil price risks, then what is holding back the government from resuming the program which commenced in October 2010 and was deemed to be very successful? Why is the government dragging its feet on such an important matter?

In 2011, the government projected in the Budget that Ghana would earn approximately GH₵584 million from oil exports, representing about 1.9 percent of GDP. The projected revenue which was allocated to cover most sectors of the economy could not have been achieved if international prices of crude oil had dropped and there was not price risk mitigation plan in place. The government at the time simply did not take any risks, and so it moved forward to hedge crude oil prices to ensure that the set targets in the Budget were achieved. What happened this time around? Many Ghanaians are wondering why the present government did not lock in prices prior to the oil price slump to ensure the realization of the oil revenue estimates for 2014 and 2015.

Although Ghana has missed the opportunity to take full advantage of the declining oil prices on the international market by not hedging, all is not lost yet. Some petroleum analysts contend that the price of oil may begin to make an upward recovery after the end of the second quarter of 2015. According to the analysts, oil price will not return to US$100.00 per barrel anytime soon, primarily because of the strength of the US dollar and the desire of OPEC to make the US shale production uncompetitive at least in the short term. One should expect between US$70.00 and US$80.00 as the price of oil before the end of 2015. This means that Ghana can move quickly to resume the hedging of the country's crude oil imports and exports. Indeed, action on hedging is needed now.

Early in 2015, the government announced the decision to introduce a Price Mitigation Fund to insure against future price hikes resulting from rising crude oil prices. As Adam (2015) contends, the Mitigation Fund can shift the responsibility for financing fuel subsidies to consumers through higher prices of petroleum products, or consumers could be made not to benefit from windfalls from falling crude oil prices for the purposes of building up the Fund. The proposed Price Mitigation Fund can also protect consumers against higher price risk in petroleum product pricing depending upon how the windfalls from the falling prices are used. The Fund will also protect the country against the fiscal risks of having to subsidize petroleum products when crude oil prices increase substantially or frequently. Besides, it will introduce some transparency and predictability in the pricing of petroleum products in the sense that consumers will be able to know when changes in prices will be passed on to them and when the Fund can come to their rescue (Adam, 2015). To ensure that the proposed Mitigation Fund is adequately resourced, the government may have to consider allocating to the Fund (i) part of the 17.5 percent special tax on petroleum products and (ii) the estimate for petroleum subsidies in the 2015 Budget. What is required is for the government to move to establish the Fund, set out the rules governing its utilization and the discipline within the government to comply with the rules.

6. Conclusion

As a primary commodities producing country, one major risk associated with Ghana's economy is price risk which has been the source of instability in the economy. In the past, hedging helped to mitigate the impact of crude oil price volatility on oil import and export. For nearly seven months now since crude oil prices began to tumble on the international market, no concrete step has been taken by the government to mitigate the risks of the falling prices. As a result, the economy might not be able to withstand the impact of the looming external shock, which could lead to further macroeconomic instability. The recent stability of the cedi may fall victim to the falling oil prices with evidential weak forex inflows and lower corporate tax receipts. This may have the potential to significantly affect the country's balance of payments and foreign reserves. The effect of the falling oil prices on individuals and businesses in the country may also be devastating. The resultant drop in private sector investment could slow down the rate of growth of the economy further with devastating consequences.

In view of the negative macroeconomic implications of the continuous fall in the crude oil prices, government needs to undertake the required adjustments now to ensure that the fiscal consolidation objectives are not undermined. It is also good that the government intends to submit a proposal to Parliament to review the Petroleum Revenue Management Act (PRMA) to allow it to incorporate a lower benchmark price should the downward price trend continue over the course of the fiscal year. This will allow the government to make the necessary adjustments in the projected oil revenues in the 2015 Budget and beyond. Although the country has missed out in taking full advantage of the falling oil prices, all is not lost yet. The government should move quickly to resume the hedging program which helped to protect the economy against the vagaries of the oil price volatility in the past. The suggestion to set up a Mitigation Fund to be used to hedge the pump price when oil prices start to rise is also a good idea and could be implemented soon.

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