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Meeting trade and development challenges in an era of high and volatile energy prices: Oil and gas in LDCs and African countries

Report by the UNCTAD Secretariat

Executive summary

Oil and gas production has increased faster in Africa than in most other parts of the world. From 1990 to 2005, oil production rose from 6.5 to 9.3 million barrels per day, representing an increase from 9.9 to 11.2 per cent of world production. Oil consumption is also growing rapidly, although it is still much lower than consumption in developed countries.

High and unstable oil prices pose serious challenges for African countries, both oil importers and oil exporters. Oil importers face strain on their balance of payments which may lead to slower growth. Oil exporters risk that the increased export revenues lead to real exchange rate appreciation and loss of competitiveness. For both groups of countries, the impact of higher oil prices may be particularly serious for poorer segments of populations.

For oil-importing countries, all strategies to deal with oil price increases entail some sacrifice. If the consequences can be spread over a longer time period their impact on development may be easier to tolerate. Compensatory financing schemes are little used due to practical difficulties, although the Petrocaribe scheme set up in the Caribbean shows promise.

For oil exporting countries, the main policy objectives are: (i) to avoid that the inflow of oil revenues leads to real exchange rate appreciation followed by lack of competitiveness and inflation; and (ii) to channel the revenue into investment in physical and human capital. Both oil importing and exporting African countries could benefit from a more systematic use of financial and risk management instruments. Lack of experience and unaccommodating regulations appear to be the main reasons why such instruments are not used more widely. For oil importing countries, structured finance offers opportunities to solve some of the difficult problems facing them with respect to the provision of oil products.

Regional cooperation will be an important element in addressing the development challenges resulting from changes in international oil markets. Such cooperation can cover many areas, but efforts to recycle oil revenues so that they can be used to meeting the region's development needs are particularly important.

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Introduction

Oil and gas are important for trade and development in Africa. Africa is the fastest-growing oil-producing region worldwide. Production has risen by 36 per cent in the past ten years (as against 16 per cent worldwide). In the six most important oil producing African countries, petroleum accounts for 75-95 per cent of export revenues, 30-40 per cent of GDP, and 50-80 percent of all government revenues.[1] Nigeria, the largest African oil producer and the 8th largest in the world, earned $11.9 billion in the first half of 2005, which is a rise of over 40 per cent on the previous year's $8.53 billion. This is over 83 per cent of the total foreign exchange earnings ($14.2 bn) over the same period.[2] Angola also increased its oil revenues by over 55 per cent from $5.6 billion in 2004 to $10 billion in 2005.[3] The increased revenue from trade and investment in hydrocarbons can be used to boost the capacity and efficiency of the export infrastructure such as pipelines, and also provide a platform for broadening economic growth. However, reaping the full benefits of such unprecedented income will require a concerted effort by the owners of the resources, with support from the international community, on policies that achieve a sustainable path to development.

In the importing African countries, high oil prices have placed a burden on the balance of payments. Oil accounts for between 10 to 15 per cent of their total imports and absorbs over 30 per cent of their export revenue. In a few countries, high oil prices have spurred efforts to liberalize trade and improve on procurement systems but there have been setbacks as inefficient procurement practices, inappropriate basic infrastructure and poor distribution practices and refining processes have driven transaction costs high.

This report is divided into four chapters. Chapter I describes trends in global consumption of oil and Africa's production and consumption levels. Chapter II discusses the macro- and microeconomic impacts of oil price volatility. It reviews some of the strategies used in dealing with impacts and recommends policy measures to mitigate risks related to the sector. Chapter III examines the challenges facing importers in their procurement of crude oil and its derivatives and also looks at possible import financing methods. The paper concludes with a discussion on possible cooperation strategies aimed at improving access to oil and gas for African countries and ways to ensure that revenue from oil and gas exports meet the development needs of current and future generations.

[1] Watts M. (2006). Empire of oil: Capitalist Dispossession and the scramble for Africa, *Monthly Review*, September 2006.
[2] Ford N. A. (2006). Where does all the oil money go?, *African Business no 321*, June 2006.
[3] Ibid.

Chapter I

Oil and gas in the world

A. Recent developments on world oil markets

Increase in demand

A first basic factor that influenced world oil prospects was the increase in world consumption. After growing at an average rate of 1.54 per cent a year over the period between 1992-2002 period, world oil demand increased by 1.93 per cent in 2003, 3.7 per cent in 2004, when it averaged a record 82.1 million b/d, and reached 83.2 million b/d in 2005. It is in China above all that the growth in demand has been the most spectacular, having risen by 8.3 per cent in 2003, 16.7 per cent in 2004 and 2.66 per cent in 2005. According to the United States Energy Information Administration (EIA), 40 per cent of the total growth in global demand for oil in the last four years has been consumed by China, making China the second largest consumer of oil after the United States. Both countries are expanding their imports from various regions, including the Gulf of Guinea which has the fastest rate of oil reserves discoveries in the world. The United States imports over 15 per cent of its crude oil from Africa and is projected to rise to 25 per cent by 2015, whilst China oil imports from Africa already account for 25 per cent of its total imports.

Available forecasts, especially those of the International Energy Agency (IEA) and the United States Department of Energy (DoE), point to an increase of nearly 50 per cent in world oil consumption over the next 25 years, taking it up from 83.2 million b/d in 2005 to 115.4 million b/d in 2030, according to the IEA, and to 118 million b/d at that point (according to the DoE's *International Energy Outlook* 2006.) As a recent advertisement of the U.S. company ChevronTexaco describes the current status of oil consumption: it took the world 125 years to consume its first trillion (1000 billion) barrels of oil, but it will require only 30 years to consume the second trillion, which corresponds to the total volume of remaining proven reserves.

The consumption pattern of oil in Africa has also picked up to feed the growing economies on the continent that rapidly increasing industrial activities and the transportation sector. BP statistics show consumption levels rising from almost 2.6 million b/day in 2003 to almost 2.8 million in 2005.[4] According to the EIA, oil demand is projected to grow at 2.3 per cent per annum,[5] but the situation in the refineries may slow down the pace of consumption.

[4] http://www.investis.com/bp_acc_ia/stat_review_05/htdocs/reports/report_6.html.
[5] http://www.eia.doe.gov/oiaf/ieo/oil.html.

Table 1: World oil Demand (million b/d)

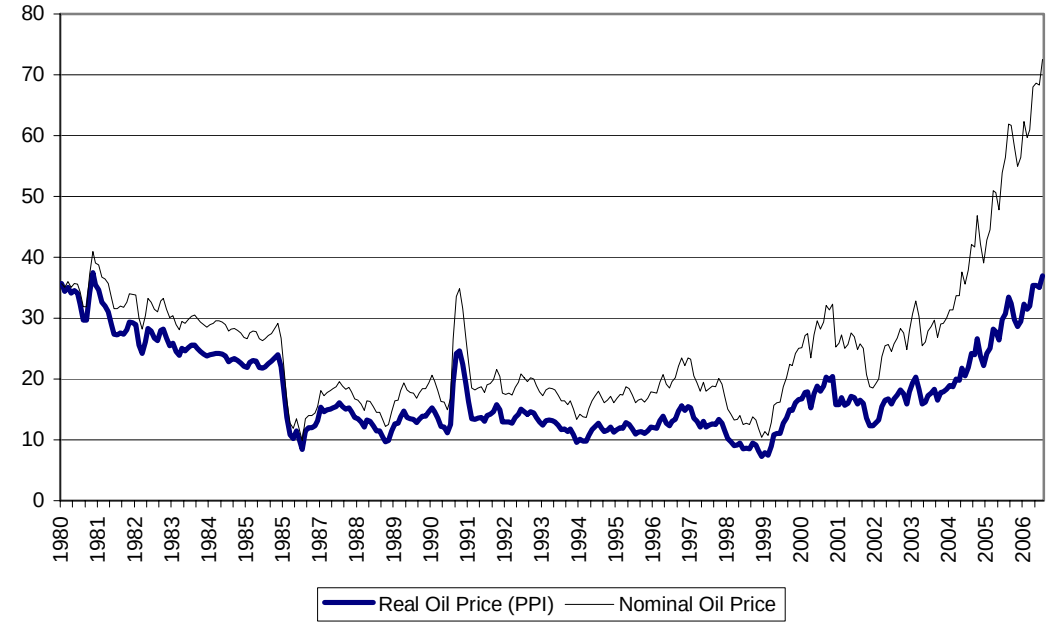
	2003	2004	2010	2020	2030	2004-2030* (per cent)
OECD	**47.0**	**47.6**	**50.5**	**53.2**	**55.1**	**0.6**
North America	24.1	24.9	26.9	29.1	30.6	0.8
Europe	14.5	14.5	15.0	15.4	15.7	0.3
Pacific	8.4	8.3	8.6	8.7	8.8	0.3
Transition economies	**4.2**	**4.4**	**4.9**	**5.6**	**6.2**	**1.3**
Russia Federation	2.5	2.6	2.9	3.3	3.5	1.2
Developing countries	**25.0**	**27.0**	**33.9**	**42.9**	**50.9**	**2.5**
China	5.4	6.2	8.7	11.2	13.1	2.9
India	2.5	2.6	3.3	4.3	5.2	2.8
Other Asia	5.1	5.4	6.6	8.3	9.9	2.3
Latin America	4.5	4.7	5.4	6.5	7.5	1.9
Brazil	2.0	2.1	2.4	3.0	3.5	2.0
Africa	2.6	2.6	3.3	4.5	5.7	3.0
North Africa	1.2	1.3	1.5	2.0	2.4	2.4
Middle East	5.1	5.4	6.5	8.1	9.4	2.2
International Marine Bunkers	3.0	3.1	3.1	3.2	3.3	0.3
World	**79.2**	**82.1**	**92.5**	**104.9**	**115.4**	**1.3**
***** Average annual growth rate						

Source: *International Energy Outlook*, reference scenario IEA, 2005

Increase in Price

Prices of crude oil and refined products have increased rapidly during the first years of the new millennium and have reached levels that have not been seen since the 1980s (see Figure 1).

Figure 1: Evolution of Crude oil price between 1980 and mid-2006, USD/barrel



Source: IMF, Primary Commodity Prices[6]

On the surface, the present oil price boom may resemble the oil price shocks of 1973/74 and 1979, but in some ways it is very different. The most obvious differences are that the price increase cannot be directly attributed to a particular supply-side shock and that the rise in price[19] has been gradual rather than sudden. The price increases are the result of accelerating demand growth, with supply not being able to keep up due to a number of factors, none of which alone would have been sufficient to trigger large price increases. Taken together, however, the changes in supply and demand were sufficient to initiate and sustain a steady rise in prices from 2003 onwards. Once the price rise had acquired momentum, speculative buying – both by those who wanted to protect their security of supply and by those who saw an opportunity for profit – was sufficient to lift prices to record levels. The fact that refining capacity was close to fully utilized led to a rise in refining margins and a rise in product prices that exceeded the rise in the price of crude oil and reinforced the impression of a crisis.

The average price of Brent crude oil rose by 27 per cent in 2004 from the previous year and again by a staggering 45 per cent in 2005. These price increases were mainly attributed to higher demand by fast-growing economies, in particular India and China, which could not be matched by higher supply because of lack in spare capacity. The oil markets' inability to respond to contingencies that could cause a shortfall or potentially alter production, e.g. geopolitical tensions and concerns about the reliability and security of future oil supplies, has been the major reason behind prices rising again this year. Nominal oil prices reached record highs in summer 2006, with strong repercussions on most developing countries.

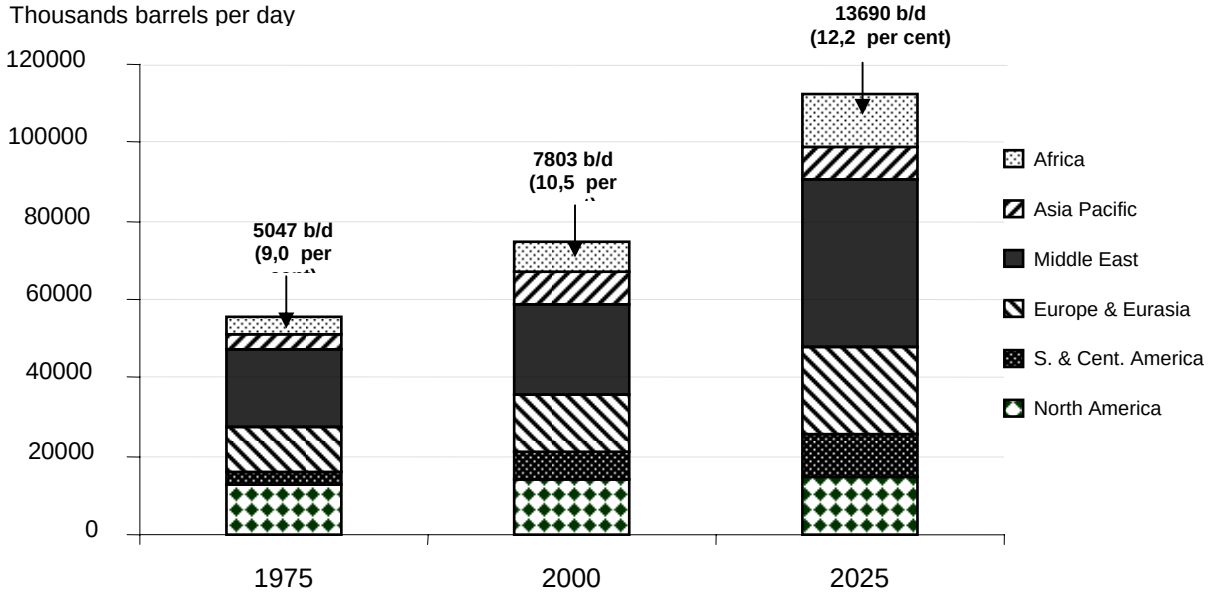
[6] Commodities Unit of the Research Department data. Http://www.imf.org/external/np/res/commod/index.asp

B. Oil and gas in Africa

Africa's share of world oil production has increased significantly in the last 15 years. From 1990 to 2005, oil production rose from 6.5 to 9.3 million barrels per day, representing an increase from 9.9 per cent to 11.2 per cent of world production. This trend is expected to continue in the future as production is projected to rise to almost 14 million barrels per day by 2025, corresponding to approximately 12.2 per cent of world production. The Gulf of Guinea is estimated to hold up to 60 billion barrels[7] (10 per cent of world reserves) and contributes 3 per cent of world production.

The continent's contribution to world oil production has been bolstered by deep offshore developments, particularly in Angola which had virtually no oil production in 1985. By 2001, output had reached 696,000 and in 2005 it had almost doubled to 1.235 million barrels per day. The main African oil producer is Nigeria, averaging 2.5 million barrels a day, and with potential for production to expand further. Libya's share fell significantly as a result of lack of investments due to sanctions. Subsequent to the lifting of sanctions, Libya's output is expected to increase from its current 1.7 million barrels per day to 3 million by 2015. Smaller producers, including Equatorial Guinea, Chad and Sudan, are also gaining ground and benefiting from new investments to boost production. Their combined production is over 1.1 million barrels per day. Other producers with maturing oil fields, such as Gabon, are capitalizing on new technology to revisit old fields with a view to boosting falling production.

Figure 2: Evolution of Africa's share in world crude oil production



Source: *BP Statistical Review*, Energy Information Administration.[8]

African gas production has increased in a similar fashion. Production has increased from 66.5 billion cubic metres per year (GM3/year) in 1990 to 150 GM3/year in 2005, with the main producers being Algeria (54.7 per cent), Egypt (17.9 per cent), (Nigeria (13.7 per cent), and Libya (4.7 per cent). According to the United States Energy Information Administration

[7] Available at: http://www.gasandoil.com/goc/news/nta54142.htm.

[8] Figure contained in the presentation of J.P. Favennec on *Africa in the new oil geopolitics.* UNCTAD 8th Africa Oil and Gas, Trade and Finance Conference and Exhibition, Marrakech, Morocco, 20-30 April 2004.

(EIA), Africa has the fastest growth rate in natural gas production worldwide, with supply rising by 4.9 per cent per year from 2003 to 2005 and expected to grow at the same pace until 2030.

Algeria is Africa's leading producer of natural gas and the world's second largest exporter of liquefied natural gas (LNG). Algeria produces around 17 per cent of the world's total LNG, second to Indonesia, with most of its exports going to western Europe, especially France.[9] In addition to LNG, it exports gas through two pipelines; one is to Italy through Tunisia and the Mediterranean, and the other to Spain, passing through Morocco and the Straits of Gibraltar. Egypt and Libya also have huge natural gas reserves and contribute 1.3 per cent and 0.4 per cent of world production respectively.[10] In sub-Saharan Africa, Nigeria holds the tenth largest gas reserves in the world and accounts for approximately 30 per cent of Africa's total.[11] In recent years, it efforts to sell gas instead of flaring has boosted the country's standing as a gas exporter and the volume of its exports is expected to rise as new LNG plants come on stream. Other countries such as Equatorial Guinea and Angola have embarked on massive projects to capture gas associated with oil production.

High oil prices provide a window of opportunity only for some countries in Africa. Others are importers of oil and oil products, and are experiencing difficulty in bearing the burden of a strongly increasing import bill. Africa has one of the highest vulnerability levels despite its low energy intensity. The vulnerability to oil price shocks in Africa is expected to worsen as income rises and the region becomes more developed .[12]

Africa's future demand and needs

Africa's per capita energy consumption does not exceed 4.2 tonnes of oil equivalent (toe) per habitant, whereas in western Europe it reaches 19 toe and in the United States close to 30 toe. It only represents 5 per cent of the world total, with 560 millions of toe /year. Biomass still accounts for 40 per cent of energy consumption and only a third of Africans have access to electric energy. There are also important regional inequalities, illustrated by an electrification rate that reaches 95 per cent in North Africa, and as little as 25 per cent in sub-Saharan Africa.

Production of oil and gas, which is important as a source of export revenue, above all represents an opportunity for African countries to develop the hydrocarbons sector and meet their important domestic needs, especially in electricity generation and in transportation. The International Energy Agency (IEA) forecasts that Africa's oil demand will rise by 3.4 per cent a year.

[9] http://www.eia.doe.gov/emeu/cabs/algeria.html.
[10] http://www.bp.com.
[11] http://www.nigerianoil-gas.com/naturalgas/index.htm.
[12] From the statement delivered by Saghir J.at the Commission on Sustainable Development Fourteenth Session, 1 May 2006. Mr. Saghir is Director, Energy and Water at the World Bank.

Chapter II

Effects of high and volatile energy prices on development and risk management strategies [13]

A. Drivers of volatility

Oil price volatility is not a new phenomenon, it has, in fact, long-been a standing characteristic of world oil markets since the early days of the industry when seasonal changes in demand produced price movements, albeit small. Since the early 1970s, changes in supply have also been an important factor behind price movements. The most important change, however, is that the international oil market has changed from a managed oligopolistic market where a few large producers set prices to one with a multitude of different actors, none of which can exercise control. The resulting uncertainty means that the market is very sensitive to information about events or trends that can affect production, exports, demand and stocks. Such information can concern weather events, short-term political developments, transportation problems (shipping, pipeline etc.), problems along the production-consumption chain and political factors such as comments by OPEC members and leaders of oil producing countries. The uncertainty finds its expression on futures markets where speculators can bet on the effect of specific events and thereby contribute to short-term price movements. A small number of powerful and sophisticated players have also used the assortment of instruments available to traders to operate squeezes or launch other operations that cause prices to move in directions that do not always reflect the actual state of the supply/demand balance.[14]

B. Impacts of fluctuating oil and gas prices: brief analysis

When oil prices move unexpectedly and the resulting move is sustained, both net importing and exporting countries face macro – and microeconomic impacts, which often have grave consequences.

B.1 Macro-economic impacts

Balance of payments: Higher oil prices have generated increased trade surpluses in oil exporting countries. IMF estimates that Africa's trade surplus increased to $27.7 billion in 2005 from $12.7 billion in the previous year as a result of a 45 per cent increase in the region's oil trade surplus.[15] On the other hand, importing countries have to pay more for their energy requirements. The extent to which the high oil price affects them depends on the share of oil in imports and economic activity. A survey of African importers by the African Development Bank shows that 28 countries spend more than 10 per cent of their total import bill on oil (see Table 2).

[13] This chapter is drawn from the UNCTAD publication: *The Exposure of African governments to the volatility of international oil prices and what to do about it*, UNCTAD/DITC/COM/2005/11 - 6 December 2005, presented at AU Extraordinary Conference of Ministers of Trade on African Commodities in Arusha, Tanzania, 21-24 November 2005.

[14] Mabro R (2000), *Oil Markets and Prices*, OIES Monthly Comment, August.

[15] http://www.uneca.org/cfm/2006/survey_africa05.htm

Table 2: Oil imports as a percentage of total imports of African countries

Category (in per cent)	No. of countries (2006)
Less than 5	5
5-10	14
10-15	16
15-20	10
20-25	1
More than 25 per cent	1

Source: African Development Bank.[16]

The cost of oil imports has increased dramatically in many African countries since 2002. In Tanzania, payments have risen by 152 per cent from roughly $190 million in 2002 to about $480 million in 2006, for approximately the same amount of oil imported.[17] Mali's payments quadrupled in 2005 from $100 million spent on oil imports in 1998. The rise in import costs is not unique for Africa. According to the World Bank, the oil price impact on heavily indebted poor countries from December 2002 to April 2006 was 4.7 per cent of their GDP.[18] The impact on trade balances has been offset for some countries by price increases for other commodities, particularly metals, but most countries in Africa have suffered worsening terms of trade.[19]

***Exchange rates*:** Worsening terms of trade usually result in exchange rate depreciation, but many currencies have held their ground during this oil price increase. According to the World Bank there has only been a modest tendency toward depreciation among oil importing countries, including those not benefiting from high metals and minerals prices.

The large flow of income resulting from high oil prices has caused exchange rates to appreciate in the oil exporting countries of Africa and LDCs. This raises the risk of the "Dutch Disease", i.e. a situation where the appreciated currency causes imports to become relatively cheaper, thus destroying the competitiveness of local industries.

***Inflation and unemployment*:** During the first two oil shocks of the 1970s and 1980s, inflation and unemployment ballooned uncontrollably in Africa and LDCs. The immediate higher price paid for crude oil pushed up price levels of refined products. Companies faced with high energy costs cut down on energy use, which resulted in a drop in productivity. However, the drop in productivity was not accompanied by a drop in real wages, which therefore gave employers limited options but to implement redundancy plans. It was not easy re-employing workers because volatile oil prices created instability in demand, which in turn stifled business investment. As a result of lower employment prospects and price inflation, the purchasing power of the poor was lowered and this had an effect on the entire economy.

In the current upturn of oil prices, prudent monetary and fiscal policies, as well as structural reform have helped control inflation and unemployment. However, there are signs of inflationary pressures beginning to take hold. The public's expectation of prices of goods and services unrelated to fuel oil use, or the so-called "second round effects", has started to rise thus affecting the core rate of inflation (i.e. excluding volatile energy and food prices).

[16] African Development Bank, *High oil prices and the African economy* (2006). Concept Paper for 2006 African Development Bank Annual Meetings, Ouagadougou, Burkina Faso, 2006.
[17] http://allafrica.com.
[18] World Bank (2006), *Factors behind developing countries' resilience to high oil prices*, 30 May 2006.
[19] For further analysis, please refer to UNCTAD Trade and Development Report, .2006.

Companies are not only struggling to keep up with the lower demand and higher energy cost, but also the demand for higher nominal wages. Research has shown that a sharp and sustained increase in energy prices could make fixed capital idle or prematurely obsolescent. Thus, the economy as a whole experiences a decline in economic growth and adjustment costs when producers and consumers change the bundles of goods and services they make or buy.[20] A number of countries, including Burundi, Seychelles and the Democratic Republic of Congo, have already seen inflation levels climbing rapidly. The African Development Bank predicts that oil prices above $60 if sustained, will on average raise inflation by 2.6 percentage points in oil importing African countries in 2006.[21]

In oil-exporting countries, rising inflation due to the limited capacity of the economy to absorb the higher natural resource exports revenues is one of the manifestations of the Dutch disease.

***Gross Domestic Product (GDP)*:** Among oil importing developing countries, the effect of high oil prices on GDP is likely to hit countries with high-energy intensities hardest. Whilst the oil intensity[22] has fallen in developed countries since the first oil shock in 1973, it has significantly increased in developing countries as commercial fuels have replaced traditional fuels and industrialization has picked up. According to the IEA, Africa's oil intensity in 2002 was 2.34 times higher than that of the OECD. [23]

The impact of high oil prices is particularly strong in net-oil importing countries with very low per capita income. While the average impact on developing countries is estimated to be a decline in GDP by 1.5 per cent for a $10 per barrel price increase, it can be up to 3 per cent for very poor countries.[24] According to the IMF, higher oil prices "…would have a demand-induced contractionary effect on economic activity unless there is no pass-through to domestic fuel prices and the government has resources to finance the additional oil bill without fiscal tightening. Because oil is an important input for production, profit margins in non-oil industries are squeezed, and their output declines. The central bank may need to tighten monetary policy to contain the inflationary impact, adding to the contractionary response."[25]

As far as the exporting countries are concerned, GDP in Angola grew by 15.7 per cent in 2005 and is expected to accelerate to 26 per cent in 2006 primarily because of higher oil prices and rising petroleum output (see Table 3). Growth in Nigeria also strengthened in 2005 as a result of expansion in the oil sector. However, for both countries, non-oil output has made a stronger contribution to GDP growth although the oil sector accounts for more than 50 per cent of total output.[26] In Equatorial Guinea the decline in 2005 was a result of expansion of investment in the oil industry which is yet to yield results, and the lack of absorptive capacity.

[20] Toman M. A. (2002), *International Oil security: Problems and Policies*, Resources for the future, January.
[21] African Development Bank; *Can struggling African economies survive escalating costs?*
[22] The amount of oil used to produce a unit of economic output.
[23] International Energy Agency (IEA), Analysis of the impact of high oil prices on the global economy, May 2004.
[24] International Energy Agency (IEA), *Analysis of the Impact of High Oil Prices on the Global Economy*, May 2004.
[25] International Monetary Fund (IMF), Regional Economic Outlook, sub-Saharan Africa, September 2006.
[26] International Monetary Fund (IMF), Regional Economic Outlook, sub-Saharan Africa, May 2006.

Table 3: Real GDP Growth in selected African countries (in per cent)

	1997-2001	2002	2003	2004	2005	2006 (IMF projection)
Oil-exporting countries						
Angola	3.0	14.4	3.4	11.1	15.7	26.0
Nigeria	2.7	1.5	10.7	6.0	6.9	6.2
Equatorial Guinea	57.7	21.3	14.1	32.4	6.0	-1.1
Oil-importing Countries						
Burkina Faso	5.9	5.2	7.9	5.5	7.5	4.2
Democratic Rep. of Congo	-4.1	3.5	6.0	6.9	6.5	7.0
Ethiopia	-4.1	3.5	6.0	6.9	6.5	7.0
Kenya	2.3	0.3	2.8	4.3	4.7	3.3
Niger	0.4	0.1	2.2	3.0	3.8	0.4
Sierra Leone	-0.9	27.5	9.3	7.4	7.2	7.4
United Republic of Tanzania	4.4	7.2	7.1	6.7	6.9	5.8
Uganda	5.5	6.9	4.4	5.6	5.6	6.2
Zambia	2.4	3.3	5.1	5.4	5.1	6.0
Zimbabwe	-2.4	-4.4	-10.4	-3.8	-6.5	-4.7
Sub-Saharan Africa	3.0	3.5	4.1	5.6	5.3	5.3
Oil-exporting Countries	4.1	4.2	7.8	8.3	6.8	8.0
Oil-importing Countries	2.7	3.3	3.0	4.9	4.9	4.5
Heavily-indebted poor countries (having reached completion point of the HIPC Initiative)	4.9	3.3	4.5	6.8	6.7	5.7

Source: IMF, Regional Economic Outlook, Sub-Saharan Africa, May 2006.

B.2 Micro-economic impacts

Outside the oil sector itself, a rise in oil prices has similar implications at the micro-level in both oil-importing and oil-exporting countries. It reduces real disposable income of households outside the oil sector, particularly urban households (firewood remains the most widely used fuel in rural areas, particularly among poor people). It also raises production costs in most sectors, including both industry and agriculture and may damage competitiveness.

***Social impact*:** The fall in disposable income has severe impacts, particularly on the poor. Programmes that benefit the poor are often sidelined to make funds available for securing energy supplies. Many countries have attempted to solve this problem with subsidies.[27] However, this is an approach that usually cannot be sustained for very long, and that is also constrained by the conditionality attached to reform programmes supported by the IMF and the World Bank.

Removal of subsidies has caused public unrest in several developing countries. In 2004, Niger's oil prices at the pump jumped by 66 per cent and immediately sparked riots. Last year, several cities in Nigeria were paralysed by protests at fuel price increases, following the introduction of a policy aimed at deregulating the downstream sector. Riots have continued

[27] Senegal's direct oil subsidies have risen from Euros 35 million in 2002 to Euros 180 million in 2006.

across many poor countries in 2006 all stemming from high prices at the pump and in certain cases have led to the collapse of governments.

***Transportation*:** Oil accounts for virtually all the fuel used in the transport sector in Africa and LDCs. The impact on these economies when prices rise is therefore understandably great. In the absence of price controls, the increase in transportation costs resulting from high oil prices has a direct impact on the movement and supply of goods, and therefore on economic activity.

***Agriculture*:** Agriculture forms the mainstay of many LDC and African economies. It often employs over 60 per cent of the working population and is vital to both rural and urban food security and foreign exchange earnings. High energy prices are however jeopardizing efforts to maintain the contribution of this sector to the overall economy. Farmers are faced with increasing costs for fuel to run farm equipment, operate pumps and water irrigation systems, and with higher prices of fuel-based supplies such as fertilizer. Other energy-intensive processes associated with farming also impact earnings. In Kenya for example, tea farmers require five million litres of oil per month to run boilers that provide steam for tea drying in 54 factories controlled by the Kenya Tea Development Agency (KTDA). The farmers lose Sh25 million ($320,000) on a monthly basis due to rising oil prices.[28]

C. The significance of windfalls

Oil revenue has in recent years risen to unprecedented levels in exporting countries of Africa generating massive windfalls. In 2004 and 2005, the windfall gains that accrued to governments' oil exporters exceeded $15 billion (Table 4). By way of comparison, total foreign direct investment in sub-Saharan Africa was $9.1 billion in 2002 and $12.8 billion in 2004. Total World Bank lending for fossil fuel projects was $2.5 billion in 2002.

Table 4: Estimated government revenues from oil exports, 2003-2004 ($ 000s)

Source of government revenue	Country	2004	2003	Windfall
Taxes on production, profits	Algeria	9933.1	8208.0	1725.1
Taxes on production, profits, transaction and concessions	Angola	5694.4	3814.7	1879.7
Profits (CEMAC) - direct input	Cameroon	673.3	613.5	59.8
Profits (CEMAC) - direct input	Congo	904.0	798.0	106.0
	Egypt	360.1	229.5	430.6
Profits (CEMAC) - direct input	Gabon	1059.2	1079.3	-20.1
Export revenues of NOC	SP Libya AJ	10527.1	8532.7	1994.4
Taxes on production+profits and profits (profits=gross revenues less cash calls)	Nigeria	18965.2	11025.6	7939.6
Profits (CEMAC) - direct input	Eq. Guinea	1263.3	775.5	487.8
	Africa (without other producers)	**49379.7**	**35076.9**	

Source: UNCTAD calculations based on data from Algeria, Ministry of Energy and Mining, Sonatrach; the Libyan Central Bank, the Communauté Economique et Monétaire de l'Afrique Centrale (CEMAC); the Central Bank of Egypt; the Central Bank of Nigeria; the IMF; the Angolan Ministry of Finance.

[28] http://allafrica.com/stories/200410050597.html.

Such export windfall gains from oil sales provide an opportunity to invest in physical and human capital and embark on a development path with a higher rate of growth.

D. Strategies to mitigate the impact of high energy prices on the economy

D.1 Oil- Importing countries

With respect to oil-importing countries, all strategies to deal with oil price increases entail some sacrifice. The strategies differ mainly in the timing of the sacrifice. Cutbacks in expenditure are one way of absorbing the consequences immediately. However, if the consequences can be postponed and spread over a longer period, their impact on development may be smaller and easier to tolerate. Some ways of doing this are reviewed in the following.

D.1.1 Compensatory finance

International financial institutions such as the World Bank, IMF and the African Development Bank (AfDB) have mechanisms of compensatory finance in place (explicitly called so in the case of the IMF, implicit in the lending practices of the multilateral banks) to assist importers and exporters in developing countries with the handling of balance of payment problems, including those brought on by movements in the price of oil or other commodities. The support is in the form of loans on concessional terms to finance trade deficit and protect against severe balance of payments problems. Repayment is made according to a previously agreed formula. The European Union also has a similar system, called Flex, which is available to ACP countries.

The IMF's Compensatory Finance Facility (CFF) has been modified several times since it was established in 1963 and the conditions for accessing loans have become more severe over time. At the most recent IMF review on compensatory financing in 2000, "the Executive Board decided to simplify the structure of the CFF, and that CFF financing would need to be made in parallel with a Fund-supported adjustment programme when preexisting balance of payments weaknesses needed to be addressed".[29] The CFF has not been used since the modifications were introduced in 2000.

The World Bank provides supplementary financing to countries for part of the anticipated period of unusually high oil prices. Subsequent financing needs are evaluated in light of price movements and country circumstances, including the availability of other sources of financing (see Box 1).[30] These loans are also not easy to access as obtaining grants from member countries needed to replenish the Bank's funds is difficult. However, after recent debt cancellations the World Bank has said that compensatory financing over the duration of the cancelled loans will be based on strong indicative pledges already made and donors are taking the necessary steps in their countries to provide their financing commitments.[31] As it is tied to debt relief programmes, the African Development Bank's compensatory finance mechanism is also getting support from donors to enable to strengthen and deepen its assistance to low-income member countries.[32]

[29] IMF (2004), IMF concludes review of the compensatory financing facility, Public Information Notice (PIN) No. 04/35.
[30] World Bank Press Release, No. 2001/183/AFR.
[31] http://www.ipp.co.tz/ipp/guardian/2006/03/30/63193.html.
[32] World Bank news releases, No. 2001/183/AFR.

Box 1: The traditional approach: an example of "compensatory" World Bank lending.

World Bank helps African countries deal with oil price increases.

Washington, December 22, 2000 - The World Bank today approved a total of $155 million in supplemental credits to assist seven sub-Saharan African countries mitigate the impact of unexpected oil price increases and other terms of trade losses. The increase in oil prices is jeopardizing the sustainability of ongoing reform programmes in Madagascar, Mali, Mauritania, Niger, Rwanda, Zambia and Uganda.

Supplemental credits are being provided to these countries because the oil price shock has led to an unanticipated increase in the financing requirements of the countries' adjustment programmes. Real import levels will be lower than assumed in original programme projections threatening the sustainability and objectives of the various reform programmes, and having a severe impact on the poor in terms of rising costs of domestic energy and transportation.

Compensatory finance schemes are sometimes practiced by exporting countries as in the erstwhile *San José Accord*, where Venezuela and Mexico exported oil to many countries in the Caribbean Basin region at concessionary rates. Under the terms of the accord the two oil exporting countries agreed to finance up to 20 per cent of the total invoice for oil purchased by their neighbours[33]. The concessions have become less favourable, but the agreement now offers deferred payment on 20 per cent of the cost of the crude, to be made available to the government as a low-interest loan for development projects along with other contingencies.[34]

A new scheme has been devised by Venezuela, the world's fifth largest exporter of crude oil, known as the *Petrocaribe initiative.* In this initiative, Venezuela shall provide crude oil to Caribbean countries and offer long-term financing at preferred terms to recipients depending on the market price per barrel. When the price per barrel is greater than $50, only 60 per cent cash upfront is needed, while the remaining 40 per cent can be paid through a 25-year financing agreement, including a 2-year grace period, at an interest of 1 per cent per annum. The cash portion is payable at 90 days from bill of lading date but no interest is applicable on the first 30 days while an interest rate of 2 per cent per annum shall be applied to the remaining 60 days (see Box 2).

[33] http://cybercircle.org/downloads/oil per cent20accords.pdf.
[34] http://www.pcj.com/alliance_main.htm.

Box 2: Petrocaribe Initiative

The Petrocaribe agreement aims to integrate the energy sectors of Venezuela and Caribbean countries, including Cuba and the Dominican Republic. PetroCaribe offers to lower oil costs during times of crises and allow governments to re-invest savings from concessional loans in development projects.

Under the agreement, Venezuela will continue to sell oil at prevailing market prices, in accordance with its obligations as a member of OPEC (Organisation of Petroleum Exporting Countries) but participating countries will be able to purchase their oil on preferential payment conditions, i.e. through the use of short and long term loan facilities and payment in kind (commodities or services) instead of cash.

The tenor of the long-term financing depends on the market price per barrel. For example, with a price per barrel ≥ $50 only 60 per cent cash is needed, while the remaining 40 per cent can be paid through a 25-year financing agreement, including a 2-year grace period, at an interest of 1 per cent per annum. The cash portion is payable at 90 days from B/L date but no interest is applicable on the first 30 days while an interest rate of 2 per cent per anum shall be applied to the remaining 60 days.

In order to help foster the social and economic development of the Caribbean countries, a fund for social and economic development, called the ALBA-CARIBE Fund, will be created using contributions drawn from the financial portion of oil invoicing and the savings from direct trade. In order to activate the Fund, Venezuela has committed to contribute an initial capital of $50 million. The Fund will be utilized for health, education and housing programs in the Caribbean.

The philosophy behind PetroCaribe is simple. Development must aim at the poor who are left out of markets. PetroCaribe encourages South-South relations and regional integration on consensual terms. Its only condition is that savings from oil concessions are used for social and economic development.

However, this structure could have some implications for importing countries. It may create dependency on a single provider and may discourage competition and private sector investment.

Source: Venezuela Ministry of Energy and Mines[35]

Performance

Oil shocks hit poor countries particularly hard in view of the fact that they have limited room to build cushions of reserves and fiscal resources as a buffer against price hikes.

> "The large negative impact of external shocks can be both short-term and long-term. In the first instance, all shocks have important negative short-term effects, if reserves and additional external finance are not available. Exports will tend to fall, as will government revenues; as a result if no external finance is provided, imports would fall, as would government spending, including on health and education. Both as a result of this and as a direct impact of the shock, jobs would be lost and income fall in the private and public sector".[36]

The multilateral institutions recognized the need for compensatory financing to help countries overcome low foreign exchange earnings and financial reserves to safeguard import capacity but over time the facilities have failed to deliver the required needs for countries

[35] http://www.mem.gob.ve/petrocaribe/index.php

[36] Stephany Griffith-Jones and Ricardo Gottschalk, Compensatory Financing for Shocks: What Changes Needed? a Study for DFID, Stephany Griffith-Jones and Ricardo Gottschalk.

applying because of the conditionality attached to the loans. UNCTAD's Eminent Persons Meeting on Commodity Issues in 2003, pointed out that for this kind of financing to be effective, it should be linked to automatic payouts to specific occurrences and there should be easing of access in terms of technical requirements among others.[37] The study by DFID[38] reiterates these points and stresses key features, namely that if it is to make an impact official lending (official liquidity) should: a) it should be speedy; b) should be sufficiently large in proportion to the shocks, particularly for terms of trade shocks; c) it should have low or no conditionality, and it should be highly concessional; and e) shocks should be precisely measured. Also, during periods of favourable prices, "it is politically difficult to generate the corresponding surplus to repay the debt leading to solvency problems"[39].

D.1.2 Fixed prices, buffer stocks and taxation

The impact of oil prices on the economy of Burkina Faso encouraged the National Oil Company, Sonabhy, to develop a strategy in which prices are fixed monthly based on an average price for the previous 25 days. In addition, a buffer stock scheme is operated to accumulate stocks and regulate the country's consumption. This procedure may have helped soften the impact of sudden price hikes, allocate and conserve resources (see Box 3).
Source: African Economic Outlook AFDB/OECD, 2006.

Box 3: Risk Management of high oil prices - Burkina Faso

The economy is handicaped by the rise in oil priceS, and pump prices rose on average by 20 per cent between January and November 2005 (17 per cent for super, 27 per cent for diesel and 29 per cent for two-stroke), reaching a peak in September (super at 673 CFA francs/litre in Ouagadougou and diesel at 599 CFA francs). Prices are fixed monthly based on an average of prices over the previous 25 days, which has softened the impact and avoided passing on the entire oil price rise to consumers. Without this arrangement, super might have sometimes cost more than 715 CFA francs. Sonabhy's finances are affected but the company gets by with bank loans and uses its stocks to keep prices steady. It currently has 45 days of consumption (though sometimes only 30), while previously it had 60 to 70 days of stocks. Tax on oil products comprises VAT (18 per cent), Customs duty and Public-private partnership and totals about 38 per cent of the pump price. The Public-private partnership is unlikely to be reduced as it raises substantial revenue for the government (17 billion CFA francs in the first nine months of 2005). High fuel prices keep transport costs high and reduce demand for it. Sales rose less than 2 per cent in 2005, to an estimated 460,000 cubic metres (450,000 cubic metres in 2004), while the economy as a whole grew much faster (5.4 per cent). Vehicle-owners are switching to diesel, which is still cheaper than super, mainly because it attracts lower tax. Diesel sales rose 5.8 per cent in 2005, while only a little over 1 per cent more super was sold.

Source: AFDB/OECD, 2006, *African Economic Outlook*.

For oil exporters operating buffer schemes, they may stabilize oil revenues when prices fall by waiting for a turn around in prices and sell high to smooth the adverse domestic effects of fluctuations. Of course, such schemes are only possible for countries with large storage capacity and no financial constraints.

[37] UNCTAD (2003) Report of the Meeting of Eminent Persons on Commodity Issues, TD/B/50/1, Geneva 6 - 17 October 2003.
[38] Griffith-Jones S., Gottschalk R. (2005), *Compensatory finance shocks: What changes needed?* Study for DFID, The Institute of Development Studies, Brighton, August, 2005.
[39] Daniel J. A. (2001), *Hedging government oil price risk*. IMF Working paper, WP/01/185, November.
(see review of compensatory financing by IMF)

Performance

Creating buffer stocks may work to moderate price swings but they are very costly. Procuring stocks can lead to debt problems and alternative uses of funds could yield a higher return.

While it may be in the through interest of the government to recoup some of the increased expenditure on petroleum supplies higher taxation on petroleum products and raising government revenues and at the same time reduce demand, it is most likely to affect the low-income consumers most. It is also questionable if price increases will hold back demand since oil and its derivatives are vital inputs for the production and distribution of goods and services in Africa. Hence, although tax increases will increase revenue they will also raise fuel prices and have a direct impact on the production costs of goods and services, and thus, on the overall price level. On the other hand, higher costs of oil should encourage efficient consumption.

D.2 Oil-exporting countries

The main policy objectives for oil exporting countries are: (i) to avoid that the inflow of oil revenues leads to real exchange rate appreciation followed by lack of competitiveness and inflation; and (ii) to channel the revenue into investment in physical and human capital.

The first objective requires that "excess" oil revenues exceeding the absorption capacity of the economy be blocked, usually by investing them overseas. With respect to this objective, it does not matter how the funds are invested. However, it can be argued that for reasons of inter-generational equity they should be invested so as to ensure that future generations can use them once the oil wealth is gone, or that they should be liquid so that they can be used to counter temporary slumps caused by, among others, adverse oil price movements.

The formulation of the second objective determines both how revenues that can be absorbed be managed and the guidelines for holding and disposing of blocked funds. Many countries have opted to establish funds that are intended to stabilize financial flows over the medium or long term and thereby smooth out fluctuations in government expenditure or in GDP. They may also be used to stabilize domestic retail prices of petroleum products. In principle, the underlying rules governing such funds are simple. Windfalls are transferred to the fund when oil prices are above normal and from the fund to the budget when prices are below normal. Norway established a petroleum fund in 1990 in an attempt to create a buffer against future drops in oil revenue. A falling output in crude oil meant that budgetary revenue was decreasing whereas expenditure on pensions due to an aging population was increasing. The Norwegian State Petroleum Fund (SPF) (see Box 4) was designed to accumulate resources only if the central government achieved an overall budget surplus depending mainly on oil prices and the size of the non-oil budget deficit (which is defined as overall fiscal balance excluding government oil revenue). Therefore, given that the oil revenue accrues first to the budget, the decision about how much revenue to save is made every year through the budget process. In this context the fund does not have specific rules for access to its resources, making its operation flexible.[40]

[40] Fasano U. (2000), *Review of the experience with stabilization and savings funds in selected countries*, IMF working paper, June.

Box 4: Background to the establishment of the Norwegian fund

The Petroleum Fund provides a buffer against fluctuating revenues from the petroleum sector. It helps to buffer fiscal and monetary policy against variations in the oil price and in production volume, which may be substantial.

The Petroleum Fund is the government's instrument for transferring wealth from oil and gas reserves to a broad-based portfolio of international securities. This provides a better balance between expected returns and the expected risk associated with overall asset management.

The Petroleum Fund makes it possible to distinguish between using petroleum revenues and actually earning them. This makes it possible to avoid abrupt shifts in the industry structure, such as we have seen in many other countries with substantial revenues from natural resources, and contributes to sustainable business and industry in the long term.

The Petroleum Fund helps to maintain a balance by distributing petroleum wealth across generations. Although Norway's petroleum wealth is being depleted, the return on the invested capital will benefit many future generations.

Source: Norges Bank.[41]

Importers sometimes operate funds by imposing extra taxes during periods of low prices to compensate for high retail prices when market prices rise. Namibia's Energy Fund operates in a similar way to stabilize domestic retail prices (See Box 5).

Box 5: The Namibian Energy Fund

Namibia uses a special account known as Slate Account managed by the National Energy Fund (NEF). Currently this account is being kept for the equalization of fuel price and fuel subsidies in the far outlying areas (rural areas) of Namibia. It is being kept pursuant to an agreement between the Government of Namibia and the suppliers of the refined petroleum products for the purpose of determining, in accordance with a formula likewise agreed upon, the amount of compensation payable from time to time by the State to the suppliers of the refined petroleum products or by such suppliers to the State, as the case may be in respect of losses suffered or profit gained by such suppliers as a result of fluctuations in the purchase price of petroleum products. The Slate Account (NEF) can experience situations of under-recovery and over-recovery. In case of an under-recovery the state has to pay the suppliers of petroleum product, while an over-recovery the supplier pays the state. In order for the state to equalize the fuel price this is taken care of by a levy, called Equalization levy, imposed on consumer for every litre of the controlled petroleum products (diesel and petrol). This money is collected every month and kept in the NEF.

Source: Ministry of Mines and Energy, Namibia[42]

Performance

The decision how much of oil revenue to sterilize may appear straightforward. Two main problems have to be faced, however. First, as the IMF points out, "Policymakers need reliable estimates of the magnitude and duration of commodity price shocks when considering countercyclical stabilization policies. Although policy initiatives that smooth national income and consumption may be effective in the face of short-lived price shocks, long-lived shocks

[41] Available at: http://www.norges-bank.no/english/petroleum_fund/about/background.html
[42] Response to questionnaire by UNCTAD (2005), *Survey of oil price volatility management in Africa*, February.

call for policies that enable countries to adjust to new income and consumption levels".[43] Second, at what price level does one save or spend when forecasting price levels is an impossible task? Target price levels are often based on administrative benchmarks. The international task force on commodity risk management in developing countries[44] has pointed out that many failures of stabilization funds are attributed to these administrative prices, which often reflect the outcome of political bargains rather than market fundamentals.

If rules for setting aside revenues and for using them are not observed, it does not help how well designed they are. Stabilization funds have generally not performed well in countries where oil dominates the local economy and where a long tradition exists of bad governance and non-transparency both with respect to the government's fiscal policy strategy and operations of the central bank[45].

D.3 Financial instruments[46]

Among the many options available for mitigating the risk of exposure to volatile oil prices, the least used are financial instruments even though the traditional mechanisms described above often achieve limited success.[47]

There are a variety of instruments created by financial markets that enable oil exporting and importing countries to reduce the revenue/expenditure uncertainty that arises from oil price volatility. The basic instruments commonly used are forwards, futures, swaps and options, but the use of different instruments is not mutually exclusive and sometimes they are used in combinations such as caps, collars and floors depending on the user's strategy to shift risk.[48] A few government entities in Africa use financial instruments of this kind but in most countries, lack of awareness and of skills, organizational and administrative bottlenecks, legal and regulatory barriers and political problems discourage their use. In Mauritius, the State Trading Corporation's (STC)has a duty to import all petroleum products, including those destined for inland trade (bunker and aviation fuel), but in the current environment of high volatile prices it proved difficult to control prices. As a result, STC embarked on a hedging strategy for some of its imports using options in addition to a quarterly price mechanism system to mitigate oil price increases. Some exporters, for example Cameroon having used futures markets to manage their risk exposure and others have thought of how swaps can be used to their benefit, but on the whole the opportunities offered by financial instruments have not been fully exploited if at all.

Trading has also benefited from financial instruments in overcoming counterparty or credit risk problems. Experience in intra African trade has shown that despite solidarity between countries to provide oil importers with credit, payment has not always been effected promptly.

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[43] IMF (1999). Do commodity price shocks last too long for stabilization schemes to work? September. Available at: http://www.imf.org/external/pubs/ft/fandd/1999/09/cashin.htm.

[44] http://www.itf-commrisk.org/documents/dsp73.pdf.

[45] Skancke M. (2002). *Fiscal policy and petroleum fund management in Norway*, presented at the IMF Conference on Fiscal Policy Formulation and Implementation in Oil-Producing Countries, 5-6 June.

[46] Various instruments and their advantages and disadvantages are discussed in detail in UNCTAD documents; *The exposure of African governments to the volatility of international prices, and what to do about it*, UNCTAD/DITC/COM/2005/11 and, *A survey of commodity risk management instruments*, UNCTAD/COM/15/Rev.2, March 1998

[47] See UNCTAD (2005); *The exposure of African governments to the volatility of international prices, and what to do about it*. UNCTAD/DITC/COM/2005/11, Geneva, December.

[48] Various strategies exist to shift risk using different combinations of instruments to lock in prices depending on the end users. A *cap price* is a mutually agreed contract that allows a ceiling price to be attained whereas a *floor* gives a minimum agreed price. A *collar* contract keeps the customer within high and low price limits previously which have agreed on.

To reduce the risk of default, techniques that enforce contract performance through the use of financial instruments have been useful in some cases.

Other instruments, such as commodity-linked bonds and loans, can in many cases help to alleviate the burden of servicing debt by linking export revenues and debt service. There are two types, namely the forward type and option type. In a forward type bond, the coupons or principal or both are linked to the market price of the commodity, whereas the option type gives the holder the right to buy or sell the commodity at a preset price.

Similarly, debt service obligations for a commodity-dependent country or company could be explicitly linked to the prices of its commodities. Borrowers carefully could link the terms of a loan to their expected revenue so as to avoid a mismatch – for example, if most of the revenue is in Yen, most borrowers would wish to express much of their debt service obligations in Yen. However, since commodity prices and currencies are volatile, the lender structures the straightforward debt obligation with a financial derivative contract called a swap, which exists for currencies, interest rates and a range of other assets; a "commodity swap" fixes the market price of commodities for a producer or consumer. Instead of requesting the lender to link the loan with a swap, borrowers could in principle enter into stand-alone over-the-counter "hedge" transactions[49] to lock in commodity prices. For sophisticated market players with high credit ratings, this is a viable alternative. But for many with weaker credit ratings such as producers in developing nations, the financial guarantees they would have to provide in order to qualify for such stand-alone hedges make this alternative impractical.

Performance

There is growing recognition of the potential benefits from the use of market-based commodity risk management instruments by economic entities in commodity-dependent countries, but their use by government entities is still rather limited. The main reason is lack of familiarity with the instruments on the part of both private sector operators (especially small producers and exporters) and concerned government officials. Misconceptions (e.g. confusing hedging with speculation), suspicions fuelled by negative publicity, fear of loss of control over scarce foreign exchange, are other reasons.[50] Sometimes, legislation intended to prevent uncontrolled speculation restricts the use of market based instruments. More widespread use of these instruments could limit the frequency and size of crises due to price fluctuations.

Financing instruments have also improved the terms of financing in trade and investments in projects, enabling borrowers to obtain more funds at better rates with longer tenors.

Properly structured commodity-indexed obligations could help to avoid a debt crisis. Commodity-indexed loans make it possible to directly link revenues and expenses, drastically reducing the risk of bankruptcy or debt crises for the company or country involved. This reduced risk should be viewed quite favourably by lenders and should therefore result in reduced borrowing costs. Given the significant borrowing needs of many developing

[49] Over-the-counter (OTC) transactions refer to tailor-made derivatives contracts that are traded and privately negotiated directly between two market participants, without going through an exchange or other intermediary. Products such as swaps, forward rate agreements and exotic options are almost always traded in this way. Standardized contracts, such as future and options contracts, are traded instead via commodity exchanges, i.e. market places for the trading of commodity contracts.

[50] UNCTAD (2005), , *The exposure of African governments to the volatility of international prices, and what to do about it*, UNCTAD/DITC/COM/2005/11.

countries and highly leveraged companies, commodity-indexed financing structures provide an optimal solution for countries and companies with revenues directly impacted by world commodity prices. Developing countries have, until recently, found it difficult and transition countries, and most of the companies in these countries, to access the market for such loans because they were seen as too risky by international financiers. The market for bonds can also be difficult to access for developing countries and countries in transition, but international financing organizations, in particular the World Bank, now offer new facilities that can provide such access.

Chapter III

African importers of oil and gas: Meeting energy needs

A. Refining sector in Africa: issues and challenges

As sub-Sahara Africa region becomes more developed, the demand for oil and gas and petroleum products will also grow, creating the need for improving supply to ensure a steady flow of energy. In this regard the refining sector in sub-Saharan Africa faces three main challenges in ensuring adequate and reliable supplies of petroleum products meet the energy and environmental requirements of the continent.

1. Market liberalization;
2. Tightening of product specifications (e.g. Clean Air Initiative);
3. Increased availability of refined products exports from new refineries in the Middle East and South-West Asia.

A.1 Market liberalization

In the past, national oil companies had a monopoly on supplying petroleum products in many countries in the region. These companies were often inefficient and did not have enough resources to invest in distribution infrastructure. As a result huge losses were made and countries often had to endure shortages.

In the 1980s, the World Bank increased pressure on African Governments to open oil products markets to import competition. This policy of market liberalization was designed to prevent governments from subsidizing inefficient refineries, promote competition and increase the efficiency of the sector.

Many countries have now taken steps to liberalize imports and downstream oil industries. Liberalization faces problems, however, since the owners of new distribution networks may find it difficult to access finance, implementing risk management strategies and meeting safety standards. Subsidiaries of foreign oil companies may be the only enterprises that can surmount these obstacles.

A.1.1 Liberalization and pricing

Import competition has often faced difficulties, because of indivisibilities – few countries have large enough markets to support more than one refinery or one set of jetties and storage terminals. Accordingly, governments have been encouraged to establish market-related ex-refinery price formulae based on import parity prices (IPP)**.**

In general the formulae contain the following common elements:

1) Platts prices[51]– usually FOB MED (Mediterranean), or CIF NWE (North-West Europe);
2) Freight – usually based on (Average Freight Rate Assessment) AFRA;
3) Allowance for insurance, losses, inspection, demurrage, etc.;
4) Allowance for import terminal costs;

[51] Platts, a division of The McGraw-Hill Companies, is the world's leading provider of energy information.

5) Allowance for financial costs;
6) K-Factor (if the other elements of the formula result in too low profitability).

The precise application of the formulae varies considerably from country to country and leads to significant differences in the profitability of refineries. Therefore, differences in the application of IPP should be taken into consideration when studying the relative performance of the African refineries.

The issue of ex-refinery prices is closely tied to government policy for setting pump prices. Some governments, in an attempt to control inflation, place unrealistic price caps on pump prices and/or impose unrealistically low ex-refinery prices. The result is a refining industry that suffers from lack of funds to make essential investments. This problem has become noticeably worse over the past couple of years since the large increases in international crude oil prices.

Moreover, the lack of policy coordination among African countries has sometimes created large differentials in the price of oil products between neighbouring countries, inevitably resulting in illegal cross-border trade. For example, in Côte d'Ivoire, some refined products officially destined for export to Mali, Burkina Faso and Guinea (thus tax-free) are in reality sold on the domestic market. In some countries, this unofficial (and illegal) trade in oil products is greater than the legal trade. The predominance of illegal trade creates considerable problems, such as the loss of tax revenues and products of poor quality.

A.2 Specifications

The objective of eliminating leaded petrol has essentially been achieved in sub-Saharan Africa, and the focus has now shifted to other aspects of fuel quality. The aim is to ensure that, wherever possible, harmonized specifications are adopted regionally to match fuel quality to vehicle needs and air quality goals.

During this process the lack of representation for all parts of the continent through regional associations has been an ongoing problem. In countries with refineries, regional associations have played a significant role reconciling the aspirations of governments with the economic and engineering realities of regional refiners. Where the refineries are in the main state-owned, they must compete for investment funds with social welfare projects. Furthermore, refineries often operate in a regulated market where the ability to recover additional investments is limited by state-controlled pump prices.

The formation of the African Refiners Association (ARA) in March 2006 united oil refiners on the continent into a single non-governmental organization representing the downstream sector in Africa. Included in the ARA remit is the mandate to study fuel quality by progressively taking 'ownership' of the extensive work already undertaken under the guidance of the World Bank, UNEP and IPIECA (International Petroleum Industry Environmental Conservation Association). ARA is also mandated to develop a framework for harmonizing fuel specifications in African countries, similar to those that have been in operation in Europe and the United States for many years.

A.3 Competition from new refining capacity in other regions

As a result of the rapid oil products demand growth over the past two years, a number of projects for new refinery construction and upgrades have been proposed in the Gulf and the Indian sub-continent. With strong products demand, and refining margins at record-high

levels, an economic and strategic incentive exists for many countries to consider building new refineries. In addition, downstream presence in an oil-producing country can help integrated oil companies improve access to exploration opportunities.

The implementation of the refinery upgrade, expansion and construction projects in the Gulf will result in additional supply of around 5 million mt of gasoline, 5 million mt of jet fuel/kerosene and nearly 9 million mt of gasoil. New and expanded refineries on the west coast of India will result in estimated additional 6.5 million mt of gasoline, 9.5 million mt of jet fuel/kerosene and 15 million mt of gasoil. Even though these clean products will not be targeting African markets in particular, they can still have a significant effect on them. A large portion of the new products supply will be for export and may, depending on freight rates and consequent arbitrage opportunities, be sold in East or West Africa. Already, in 2004, about 5 million mt of AG/India gasoil was sold to west African countries, including 2.5 million to Nigeria alone. These low cost deliveries already have a major impact on African refineries and the imports could increase to include gasoline and jet fuel.

The precise impact of more low-cost supply will depend on the degree of liberalization in the markets. If a country's market is relatively liberalized (e.g. gasoline imports into Nigeria), then new refineries in the Gulf and on the west coast of India will have a notable impact on local refineries. If, however, the local market is protected (e.g. Cameroon's tax on imported products, South Africa's restriction on importing companies), the impact may be smaller. A degree of protectionism (a K-factor of about 10 per cent on top of the ex-refinery product prices) is tolerated by international financial institutions, as this is considered a fair price for the benefits that an operating refinery brings to a country's economy (e.g. employment, access to technology and know-how, and some degree of supply security).

Another major impact the new refining capacity additions could have on African refiners is to make exporting products more difficult and less profitable. African refiners can sell their product domestically at prices that include an allowance for freight rates and a K-factor. This allows them to offset their operating handicaps and to generate gross margins comparable to an European refinery. However, in the export market African refiners have to compete with large European, Gulf and Caribbean refineries. Sub-Saharan African refineries have a location (freight rate) advantage as there is a product deficit in the region and the price they can charge for exports will generally be higher than the European Platts quote. However, quality discounts can offset part of this difference.

B. Challenges facing African oil-importing countries

B.1 Trade-supporting physical infrastructure

The lack of efficient import and distribution significantly raises the cost of supplying oil. In sub-Saharan Africa, the need for adequate trade-supporting physical infrastructure, such as ports, roads, railway networks, pipelines, refineries and storage and internal distribution networks has a significant impact on import and distribution costs. For example, a ton of gasoline transported by pipeline to the Democratic Republic of Congo, a landlocked country, is eight times more expensive than the same product transported over the same distance and using the same means as between Italy and Switzerland. Pipelines are inadequately maintained and are subject to frequent vandalism causing supply disruptions. The tankers used for transporting oil do not provide enough capacity and do not always meet required safety standards. Improving the conditions of the fleet comes at additional cost. In Uganda,

transport by trucks costs between $40 and $42 for a cubic meter of refined products.[52] Attempts are underway to reduce the cost by building a new pipeline from Kenya.

Storage capacity has not kept up with the increase in oil products trade, in spite of legislation in many countries to maintain a minimum buffer stock equivalent to the demand for 90 days. Lack of finance at good terms is a major obstacle.

The poor state of oil refineries and the obsolete equipment used have also been detrimental to maintaining the supplies in the region.[53] The refineries have small capacities and the technologies in use are not very efficient in producing highly sought after light products, such as petrol used for transport.

B.2 Tender procedures: Oil procurement practices

Imports of oil and gas to sub-Saharan Africa is normally undertaken through long-term contracts or tenders issued by national oil companies, mostly state monopolies and, in some cases, joint ventures between national oil companies and international/local companies. Competition between the various suppliers is through the size of the premium or discount they offer compared to the tender reference price. Due to the transparency of the tender system local importers can avoid external pressures for the assignment of contracts, but they also face some disadvantages compared to suppliers with foreign operations who may have a wider choice concerning reference prices or dates. Companies importing small quantities of oil also face higher financing costs.

C. Structuring finance to meet oil and gas import

The oil industry is highly capital-intensive at both the exploration and extraction stages and stage when it is traded. Access to finance is of vital importance, as operators can rarely meet financial needs from their own resources. Reducing financing costs, even by a small fraction, in particular through the use of structured finance techniques, can bring large benefits.

For oil-importing countries, the costs of oil imports often absorb a major part of their foreign currency earnings. The option of borrowing directly from the local banking sector is very difficult and costly for these countries due to deficiencies in local capital markets.[54] Morover, the dismantling of government monopolies is making it even more difficult to obtain credit at good terms, especially for new operators, which do not always meet the financiers' requirements (lack of experience, no borrowing track record, low capitalization). Therefore, in order to obtain finance at favourable terms, local companies usually approach international banks.

[52] Presentation by Ministry of Energy and Mineral Development of Uganda at 8th Africa oil and gas trade and finance conference, in Marrakech, Morocco, 20-30 April 2004

[53] There are 38 refineries currently operating in Africa (19 refineries are in North African and 19 in sub-Saharan Africa). In addition there are approximately 50 companies that own import terminals and/ or have a major role in importing products to supply national needs. See Annex 2 for an overview of African refining.

[54] The local cost of funds is sometimes as much as 35 per cent.

The financing of imports in emerging markets, represents, however, a difficult challenge for international banks. While export finance attempts to move payment risks away from exporting entities located in developing countries (thus reducing the risk of repayment), import finance, on the other hand, tends to cluster payment, performance, currency exchange as well as country risks in the importer's place of domicile, thus leading to increasing risks. The risks inherent in such transactions are very high (including the high political risk of these countries), which makes it unattractive for banks to provide straightforward credits without proper guarantees.

The use of structured trade finance techniques enables international banks to mitigate the risks of financing such transactions by transferring the risks from parties less able to support risks, i.e. the beneficiaries of the financing to those more equipped to do so, i.e. insurance companies, or third parties such as collateral managers, etc. in a way that ensures automatic reimbursement of advances from the underlying transaction assets. Through structured finance, risks can be systematically isolated, thus leaving financiers with an attractive proposal in risk/reward terms.

Box 6: What is Structured Trade Finance?

Structured trade finance is a performance-risk based financing technique that provides liquidity management and risk mitigation to companies based or active in emerging markets.

Structured trade finance derives its relevance from the need to enable entities with poor balance sheets, lack of track record and/or operating in difficult environments to access funding for their operational needs on the basis of the "transaction strength" of their loan.

Structured trade financing mitigates risks associated with transactions through incorporating predictable cash flows in the structure, thus ensuring automatic reimbursement of advances from the underlying transaction assets.

Using structured trade finance techniques banks grant loans to companies which would have been unable to qualify using the traditional credit requirements.

Structured financing enables companies to raise funds on the basis of their "transaction strength", rather than on the basis of their balance sheet or track record. A key element is the use of "collateral" of one form or another, over which the bank has control, and of a secure repayment mechanism, in which case the financing is said to be "self-liquidating". The collateral can consist of the commodities to be financed, assignment of proceeds or relevant insurances.

A number of structured finance techniques have been successfully used to overcome the problems faced in obtaining import finance. Among these are:

Counter-trade arrangements

In this method of financing, trading counterparts (government-to-government) are contractually linked with reciprocal import/export transactions. Some African oil importing countries (Madagascar, Uganda and Zimbabwe) have imported oil through counter-trade arrangements (e.g. with the Libyan Arab Jamahiriya) whereby payments are effected with agricultural commodities and minerals and, in the case of Zimbabwe, by transferring state-owned assets (e.g. land, hotels). In August 2001, the Libyan Arab Jamahiriya agreed to provide Zimbabwe with a credit line worth US$ 360 million in exchange for shareholdings in Zimbabwean firms.

Financing oil imports securitized by export flows

This technique of import financing can be arranged using the assignment of export proceeds of local commodities to secure the financing, as was done in the late 1980s and early 1990s when oil import financing was arranged for Ghana and Tanzania, using the assignment of export proceeds of coffee and cocoa.

Financing oil imports against local currency receivables

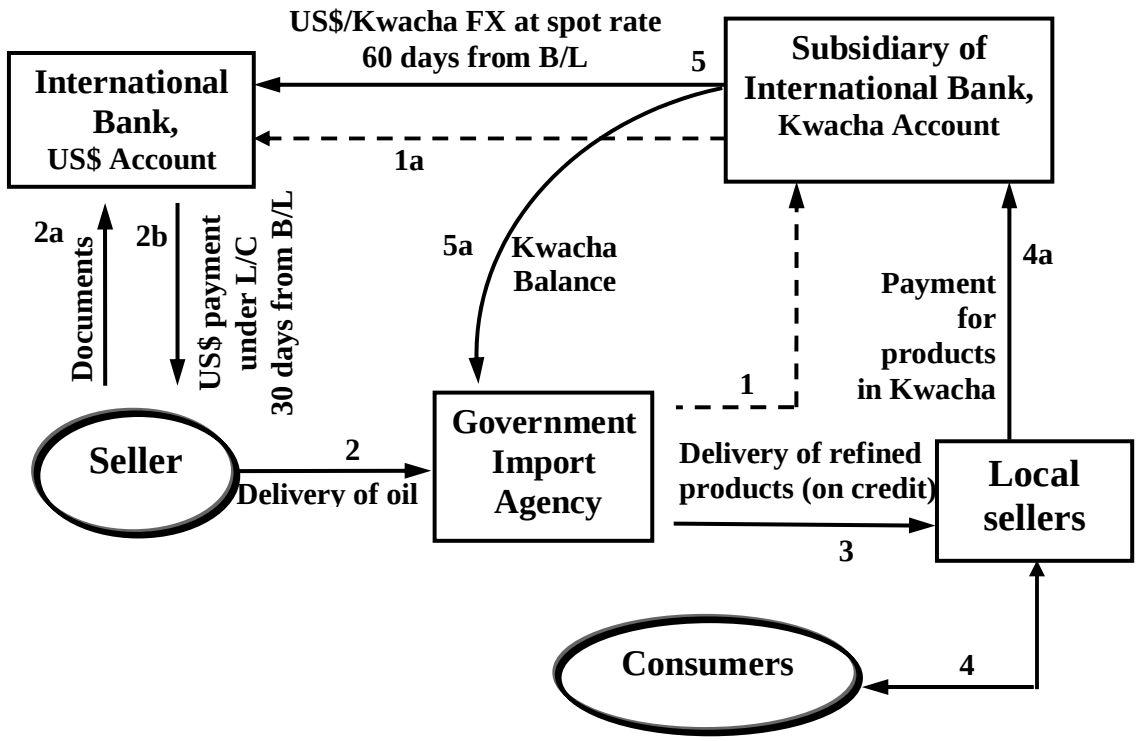
When structuring oil import finance against local currency receivables, it is important that the lender feels sufficiently comfortable with the risk of converting local currency receivables arising from the local oil sales into hard currency. This structure is normally viable when the financer has a local branch or a local banking partner which can take the currency risk.

An example of this structure is a financing arrangement undertaken by Standard Chartered for Zambia in the late 1990s. This facility involved the provision of the sum of $2 million to the Zambian Government Agency charged with the importation of fuel oil into the country.

The transaction structure is summarized below and described in Figure 3:

1. The import agency applies for a 30-day letter of credit (L/C) confirmation facility through a local subsidiary of an international bank, to enable it to import oil. The Agency assigns proceeds of its contracts with local distributors to the subsidiary bank and opens a collection account in local currency (Kwacha) into which proceeds of the sale would be paid. The local distributors receive irrevocable instructions from the agency that they need to pay into this collection account. A 30-day L/C is opened by the subsidiary and confirmed by the international bank.
2. The offshore supplier effects shipment. It sends the documents to the international bank and receives payment.
3. The agency receives product and supplies to distributors. At this stage, the bank could, if it wishes, use the services of a collateral manager to control the oil stocks and their distribution.
4. The distributors make sales and pay directly to the collection account at the bank subsidiary.
5. The subsidiary bids spot for foreign exchange with proceeds in the collection account and transfers facility amount plus interests to its offshore parent, while remitting the residual sum to the import agency.

Figure 3: Financing oil imports against local currency receivables

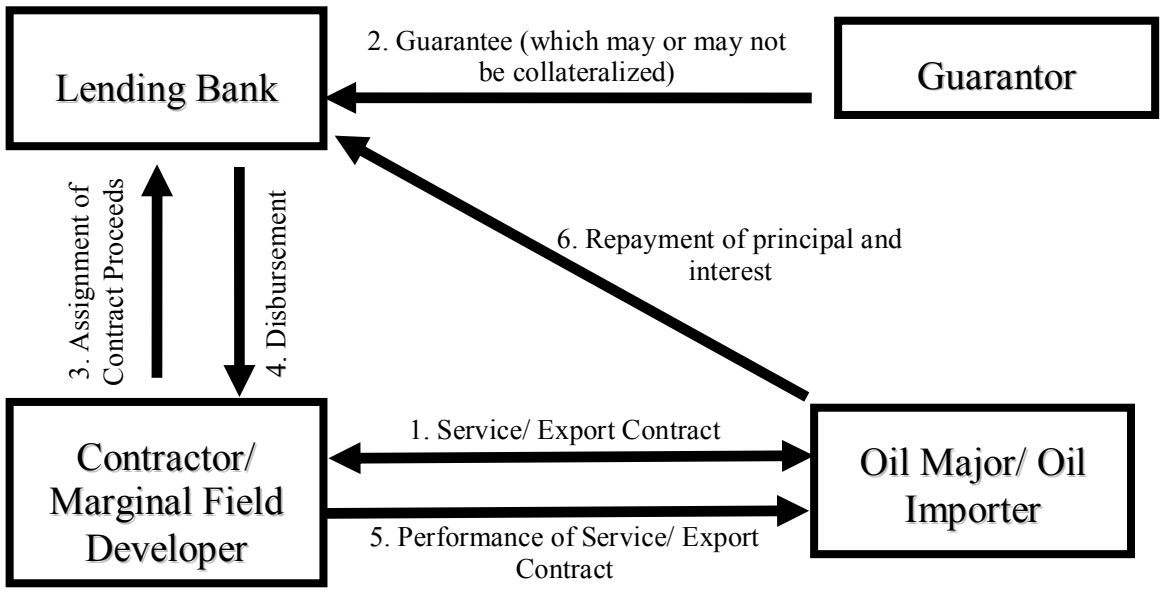


Lending against payment guarantee

With this method, financing is granted to the importing company with credit enhanced by a bank guarantee. The guarantee may be in the form of a letter of credit or first demand guarantee. Sometimes lenders may ask the deposit of some cash collateral or lodgment of acceptable short-term treasury bills. Guarantor may be a local bank whose risk has already been assessed by the lenders, namely a government, an international organization such as Afreximbank or a multinational corporation which is normally the parent company of the importing company.

The transaction structure is described in Figure 4 below.

Figure 4: Lending against payment guarantee



Oil import finance collateralized with warehouse receipts[55]

An ongoing flow of import finance has been made possible by collateral management in a number of countries. In this way, foreign financiers, in effect, retain control over the imported products until they are released to petrol stations. The financier receives the payments made from the local petrol companies, and will only release these funds to the nominal oil importer after debt service has been deducted.[56]

The principle is that the collateral manager (in the specific case ACE Audit Control and Expertise, a Geneva-based collateral manager) on behalf of the bank assumes custody of the product from the time of arrival in the depot until it is sold on to final buyers and the proceeds of the sale have been used to offset the importer's outstanding loan with the bank. The credit line worth US$10 million (on a revolving basis) enables the client to import oil products for distribution in its country of operation as well as for re-export to a number of land-locked neighbouring countries. The bank secures its exposure through collateral management.

The typical financing procedures are arranged in the following sequences:

1. A tripartite collateral management agreement between the collateral manager, the lender and the oil importer, is signed. The financing bank opens a L/C covering the import of a specified quantity of oil products.

[55] Based on presentations by Passwell Shapi, Eastern and Southern African Trade and Development Bank (PTA Bank), "Oil financing: a look at the PTA Bank's structured approach", and by Michael Davis, Audit Control and Expertise Ltd. (ACE), "Stock control and inspection as tools for better oil trade financing", at UNCTAD's second African Oil Trade Conference in Harare, Zimbabwe, 14-17 April 1997.

[56] This type of collateralized finance also benefits cash-strapped refineries, where banks keep full control over stocks of crude oil and oil products (through an independent collateral manager.

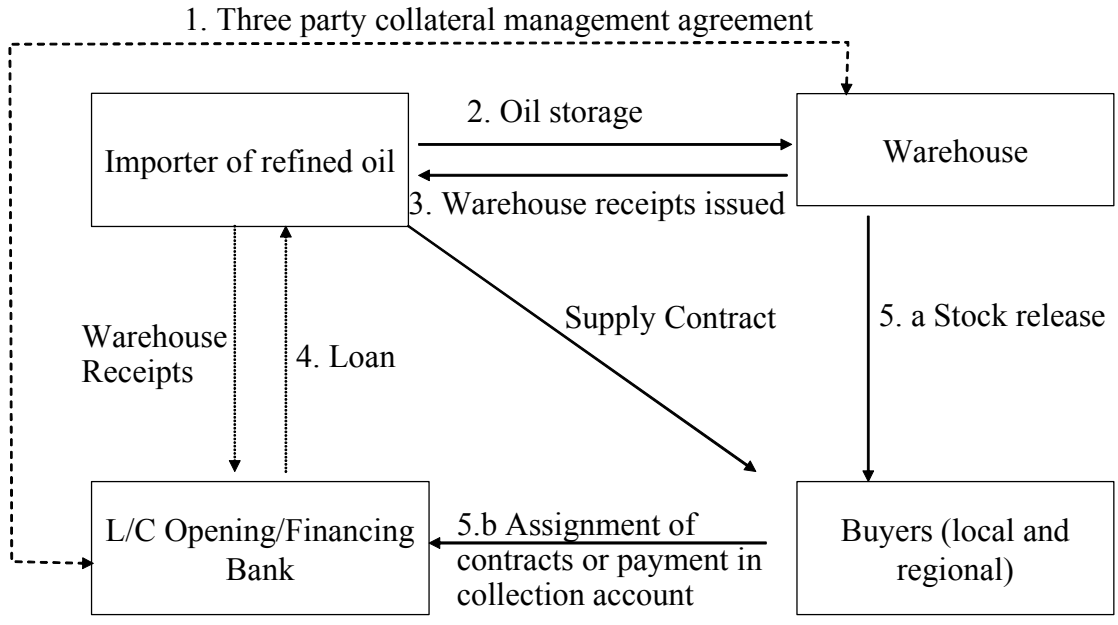
2. On arrival of the vessel, the inspection agency, the port authority and Customs inspects the quantity and quality of the oil. Their findings will be compared with the descriptions and quantity of the consignment as per the shipping/import documents. The oil products financed by the bank are stored in separate tanks dedicated for this purpose. A second inspection will also take place 12 hours after transferring the oil to check for any discrepancies.

3. The final inspection report will be issued and together with the import documents, it will be the base for the collateral manager to establish the beginning stocks balance for subsequent follow-up on movements. On this basis, the collateral manager issues non-negotiable warehouse receipts made out in the name of the bank, which state the quantity received, quality, value at time of receipt and the storage and insurance arrangements.

4. The warehouse receipts will serve as a security for the loan to be disbursed in favour of the oil importer. On the basis of the collateral manager's reports, the bank knows the "borrowing base" for the importer – the total of the value of the goods in stock, and the accounts receivable – and thus has perfect control over his credit risks.

5. Stock releases only take place if the precise conditions set out by the bank are met. Such releases can be either for immediate local sale, or for transit to a depot owned by the same company in a neighbouring country. In case of immediate local sale, the proceeds of the sale must be credited into a collection account. The collateral manager needs to receive either proof of payment into this collection account, or evidence of assigned sales contracts, which become account receivables. If the stock is to be moved to a depot in a neighbouring country, the collateral manager keeps full control over it during the transit period, and thereafter at the depot in the neighbouring country. The importer needs to have received prior authorization from the bank and the road customs transit declaration form from local customs authorities for this transfer.

Figure 5: Oil import finance collateralized with warehouse receipts



It must be pointed out, however, that using oil products as collateral raises various issues related to the nature of the products (valuation difficulties, ageing and contamination), and the high management costs of stored products due to necessary frequent stock measurements and inspections caused by commingling.

Chapter IV

The way forward for oil and gas in Africa

A. Efficient oil and gas procurement in Africa

Experience has shown that there is a compelling need for rationalizing the petroleum downstream activities by dismantling inefficient monopolies, attracting private capital and introducing policy reform. However, a careful and cautious approach to the liberalization of Africa's oil sector is needed to ensure that national oil companies are not abruptly dismantled without any credible successor institutions already in place.

Oil procurement is a challenge for many African countries, mainly because of poor infrastructure, inefficient national price determination policies, difficult access to favourable financing terms and lack of regional cooperation on procurement and price harmonization policies. Moreover, African countries are vulnerable to high volatility in oil prices because of the non-use of effective price risk management tools. There are several ways to improve efficiency in procurement:

First, the prices paid by consumers for oil and gas products should reflect the costs of imports, and any deviations from this policy – for instance, price ceilings introduced to protect consumers from sudden price increases due to rising international prices – should be well explained and, if possible, be subject to publicly known criteria.

Second, considering the very poor state of infrastructure currently in place, substantial improvements are needed in transport, storage and distribution facilities.

Third, rationalization and rehabilitation of existing oil refineries must be a priority. Many refineries need to be redesigned in order to refine crude oil originating from the subregion or have their capacities expanded to cater for expanding markets for oil products. For landlocked countries it may be practical to construct new inland oil refineries with refining capacities that would match regional demand. Such refineries could be partly state-owned and given "offshore" status.

Fourth, access to finance for local companies that would not be eligible for financing on traditional financing criteria should be facilitated by using innovative risk management tools and structured finance techniques. Many opportunities are still not exploited as African policymakers will do not fully understand how to use available tools and, in particular, among most local banks. Another alternative for better access to financing could be the establishment of African oil trading companies to attract international trade financing.

Fifth, African suppliers do not have access to financial instruments used to support bids for supply contract, such as bid bonds and performance guarantees. As a result they are excluded from bidding for African oil business; hence the continuing enhance the tendering processes currently used by many African oil importing countries which tend to exclude potential African oil suppliers.

B. Regional cooperation

As a major oil producer and a net oil importer with growing energy demands, Africa is very vulnerable to the current environment of high volatility and increasing international oil prices. However, there appear to be possibilities to improve both efficiency and profitability by strengthening regional cooperation with respect to refining, bidding and buying procedures, transportation, harmonization in prices and investment in infrastructure.

B.1 Refining cooperation - African Refiners Association (ARA)

The implementation of new refinery projects in the Red Sea, the Persian Gulf and on the west coast of India is likely to add significant quantities of products (in particular gasoil) to the regional balance. A large portion of the new production will be traded internationally and some will end up in African markets. The price of products imported to West and East Africa may fall as a result and could lead to lower refining margins for local refiners. African refineries need to take account of these possible market changes in their planning. Meanwhile, development of the refined product markets continues to be constrained by the ex-refinery and pump pricing mechanisms that vary from country to country.

In an effort to help African refiners address the challenges discussed above, the African Refiners Association (ARA), established in 2006 and with 36 of the 39 refineries on the African continent as members, will investigate challenges and opportunities facing the downstream sector of the oil industry in Africa.

ARA will bring together refiners whose combined output exceeds 3 million b/d and who supply fuel to the entire population of the continent. ARA provides a private forum for refinery management to discuss issues facing refiners in the global market, an opportunity to exchange information and ideas, and the means to improve data collection and availability. Its principal aims are to:

- address economic, environmental, and social issues deemed by its membership to impact on oil refining in Africa, or upon the importing of petroleum products into Africa;
- address issues within the international oil industry which impact on the African oil industry;
- promote the exchange of experience between members, with the aim of improving technical and economic performance;
- improve communication and co-operation between members and the international oil market. To achieve this ARA cooperates with the relevant industry groups, governments, regulatory bodies, international financial institutions (e.g. World Bank, IMF), academic institutions and NGOs.

With respect to product specifications, ARA members have been working with other stakeholders to propose a set of core specifications for gasoline and diesel for African counties. These recommendations are based on the adoption of a banded system of specifications known as the ‘AFRI’ system (based on the EURO specifications system).

B.2 Consumer-consumer cooperation

Bidding procedures vary between the various importing countries in the region. There is considerable scope for harmonization, in particular through grouped invitations to tender. Cooperation at regional level (for example by means of an association of oil importers or traders) should be established to have better bargaining power when participating in tenders. In this way, importers of small quantities will benefit from more favourable terms.

Illicit trading in oil products represents a significant share of the market in some countries, and is sometimes larger than the legal trade. It operates side by side with the formal sector but its products are rarely available at service stations. It leads to lower public revenues and consumer losses due to poor quality of products. Possible actions to reduce illicit trading include stronger control measures so as to prevent products to enter illegally and the harmonization of the pricing policies between countries within the same region.

B.3 Producer-consumer initiatives

Cooperation could also be developed between hydrocarbon producing and importing countries. The possibility of producer-consumer dialogue would go a long way in providing some form of low-cost long-term financing to many importing countries facing balance of payment arising from high oil prices.

On the other hand, poor infrastructures are the root cause of high transportation costs of petroleum products in sub-Saharan Africa. Across borders only a few pipelines exist in transportation of crude or products and rail or road offer very little in safety and efficiency. National oil companies could cooperate at regional level by providing the capital needed to enhance Africa's infrastructure development.

C. Strategies for better price risk management

The various impacts of oil price increases are sufficiently serious for governments to adopt a pro-active approach to manage oil price risks. Such an approach passes through several steps:

- *Identification of the risks*. What really happens when oil prices increase? Certain effects may not be linear, but rather, may become strong only when certain price benchmarks are reached (for example, certain energy- or transport-intensive export industries may become non-viable when costs reach certain levels).

- *Quantification of the risks*. What, exactly, is the relation between a $1 oil price increase (again taking into account the possible non-linear effects) and various economic variables (balance of payments, government budgets, cash flow of parastatal companies, price levels for imported goods, public transport and export commodities)? This analysis requires some understanding of how prices are passed on in various parts of the economy.

  - *Decisions on acceptable "pain levels"*. Realistically speaking, how much damage could the government budget or the country's foreign currency reserves sustain and for how long? How much loss can parastatal companies absorb without serious long-term negative effects? By how much can public transport companies raise their tariffs without causing social disruption?

- *Formulation of a risk management strategy*. Possible impacts that go beyond these "pain levels" should be managed systematically and proactively. A risk management strategy can contain different instruments – saving funds built up in times of low prices; arrangements with international organizations or banks which ensure that extra loans will be forthcoming in times of high prices; strategic oil reserves; linking foreign debt service to oil price development; or the use of various market-based instruments.
- *Development of a mechanism for price risk management strategy,* including regulations and implementation mechanisms that may involve both public and private sector entities.[57]
- *Regular re-evaluation of the strategy and implementation mechanism*, and when necessary, adaptation and fine tuning.

D. Ensuring that hydrocarbon resources satisfy developmental needs for current and future generations

The increasing export revenues of oil exporting countries in Africa as a result of higher oil prices can bring real development benefits if bold steps are taken to use part of the revenues to meet the continent's considerable investment needs, as well as creating new opportunities for non-exporters in the region. Investments in infrastructure, in particular energy, would not only unlock considerable productive potential, but could also bring high direct economic returns.

The issue of how to invest surplus revenues is receiving growing attention. While prudence would dictate that the excess funds should be invested conservatively so as to provide income for future generations, it could be argued that it would be possible to invest in development without straining the absorptive capacity of the surplus country, for instance by placing the surplus in a fund for investment in regional development projects.

At a meeting of Finance Ministers in Africa hosted by the African Development Bank in 2005, a proposal was made for the Bank to establish an oil fund with voluntary contributions coming from part of windfall gains of major oil companies from oil-producing countries.[58] This type of fund, according to the ministers, could be used to help African countries absorb oil price shocks and support African development efforts. It was argued that "it should be in the enlightened self-interest of oil producing countries to share their wealth with their "poor" neighbours through a regional solidarity or equalization mechanism, especially as many African oil-exporting countries are expected to soon reach the limit of their absorptive capacity for investments". In order to capture such funds and put them to use for development, players should therefore actively call for and support, the establishment of national funds, but also, the idea of multi-country oil funds with a view to spreading the financial benefits and making a solidarity-based contribution to equitable regional development." This would strengthen cooperation in the region, decrease resource-based development disparity, and reduce the potential for conflicts between countries[59].

Another alternative could be to structure a fund as a Private-Public Partnership initiative, where the resources would be managed by independent financial professionals and the capital would come from the oil exporting countries but without them influencing investment

[57] The operational aspect of implementation is discussed fully in UNCTAD document, *The exposure of African governments to the volatility of international prices, and what to do about it*, UNCTAD/DITC/COM/2005/11

[58] Communiqué of African Finance Ministers, Nov 2005, African Development Bank (AfDB)

[59] See Geerd Wurthmann (2006), Ways of Using the African Oil Boom for Sustainable Development, Senior Councilor, Federal Ministry for Economic Cooperation and Development, Germany, *Economic Research Working* Paper No 84, AfDB, March 2006

decisions. This will reduce political risk factors and will allow the funds to leverage their own capital, mitigating the risks in projects and thus attracting supplementary new finance from the western capital market.[60] This strategy would include deals to team up with foreign companies as a way to bring technology back to Africa through direct investment and or private equity partnerships. A more detailed description of how such a fund could work is included in an Annex.

E. Improving the development multiplier of the hydrocarbon sector in oil-exporting countries

Developing local content is another key element in ensuring that hydrocarbons reserves do not just serve the current generation but also future ones. To achieve this, it is necessary to stimulate debate on the development of local entrepreneurs in the oil industry so as to better integrate hydrocarbons exploitation into the economy as a whole and use it as a stepping stone to wider industrial development. The annual loss of revenue to foreign contractors working in oil field services is estimated at over $8 billion in Nigeria alone [61]; money that could have been reinvested into the economy. African leaders have a duty to ensure that the benefits of hydrocarbons exploitation can be extended to other sectors of the economy. This is achievable by joint cooperation from stakeholders (government, multinationals, financiers, etc.), and developing the necessary environment and tools including finance, education and training to nurture local content.

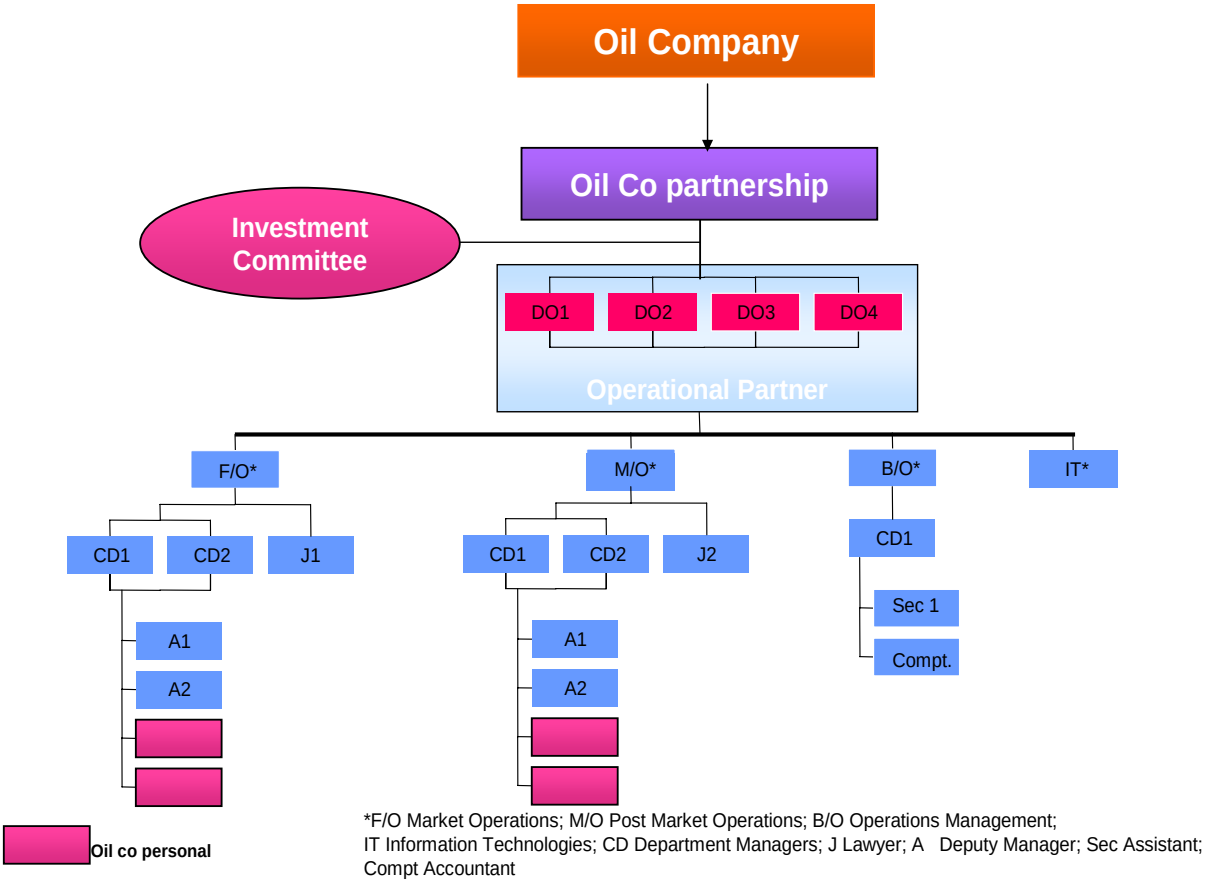
[60] See also UNCTAD Document, *Boosting Africa's growth through re-injecting surplus oil revenue*: *An alternative to the traditional advice to save and stabilize,* UNCTAD/DITC/COM/2006/10, 2006

[61] UNCTAD/CALAG, Africa Oil and Gas Services Survey, March 2006

Annex
A public-private partnership to invest oil funds: possible details

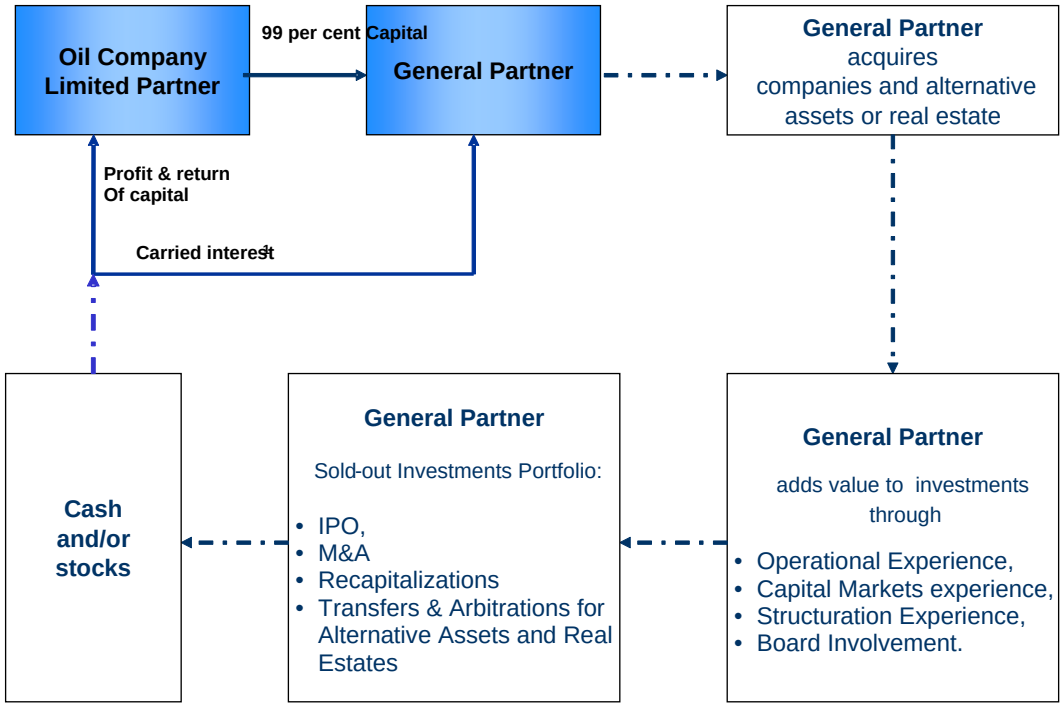
Figures A1 and A2 show how the investment fund would be structured and managed. It is proposed that a long-term view be taken, i.e. in a 5-to-8-year-time frame, as investments and developing competencies take time to mature. The investment platform should be built with an experienced professional team mixed with local professionals as part of the team with the purpose of training them on best practices of corporate finance and asset management. One of the investment criteria should be to transfer industrial, financial and management techniques to recipients so as to allow them to develop competencies in various sectors.

Figure A1: Possible structure of an oil company-supported investment fund



Source: Jean-François Casanova (2006), Commodity Risk Management, An alternative view for investing huge revenue windfall, 10th African Oil & Gas Trade and Finance Conference, 2-5 April..

<u>Figure A2:</u> Possible management principle of an oil-company-supported investment fund



Source: Jean-François Casanova, Commodity Risk Management, *An alternative view for investing huge revenue windfall*, 10th African Oil & Gas Trade and Finance Conference, 2-5 April 2006.