

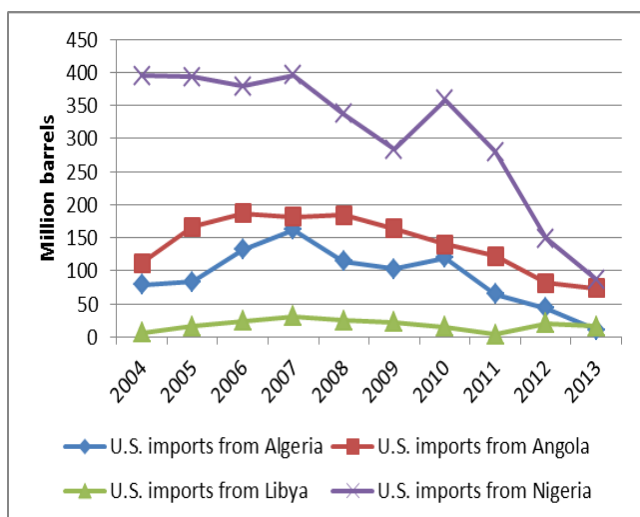
Africa's Crude Petroleum Exports Declined Due to a Shrinking U.S. Market

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Summary: Since 2007, the volume of Africa's crude petroleum exports to the world decreased sharply, led by a dramatic drop in exports to the United States. In contrast, Africa's crude petroleum exports to China and India surged from 2004 to 2010, and fluctuated between 2011 and 2013, but only partially offset the decline in exports to the developed world. Africa faces uncertainty in future petroleum demands from China and India as both countries are seeking new sources of supply and political uncertainty affects production in Nigeria and other African nations.

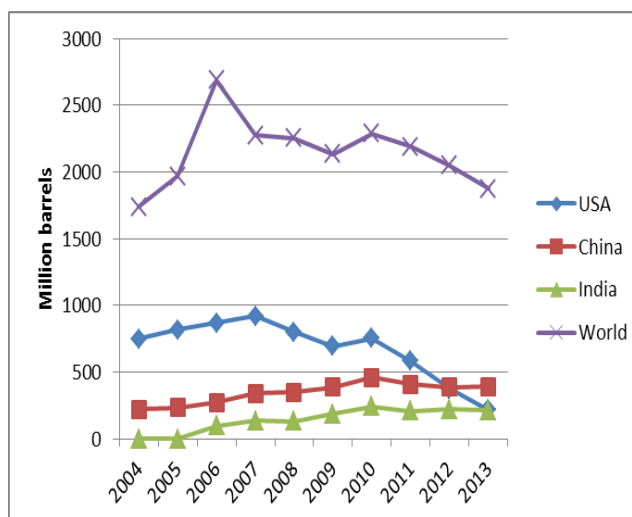
- In 2013, Africa accounted for 10 percent of the world's production of crude petroleum and 8 percent of the world's crude petroleum reserves. In that year, Africa's four major net exporters were Algeria, Angola, Libya, and Nigeria, which together supplied over 90% of African's exports of crude petroleum. The United States, China, and India were the primary markets for African crude petroleum exports, jointly importing 50.4% of total African exports in 2013.
- While the volume of African's exports of crude petroleum to the U.S. market dropped by nearly 70% from 2004 to 2013, African's crude petroleum exports to China and India increased significantly from 2004 to 2010. These exports to China rose from 223.4 million barrels in 2004 to 459.3 million barrels in 2010, declining to 391.9 million barrels in 2013. Its exports to India rose from 1 million barrels in 2004 to 243.9 million barrels in 2010, and have remained relatively stable since. Figures 1 and 2 show the recent trends in Africa's crude petroleum exports to the U.S. China, India and the world:

In recent years, crude petroleum exports to the United States from four major African net exporters decreased sharply (see figure 1 below).



Source: U.S. Energy Information Administration

From 2010 to 2013, most of the decline in Africa's crude petroleum exports to the world was attributable to the United States (see figure 2 below).



Source: World Integrated Trade Solutions

Drivers of Decreasing U.S. Imports from Africa

- **Demand Factors:**
 - The United States moved away from importing petroleum from Africa and other countries in favor of consuming domestic production. U.S. consumption of crude petroleum remained relatively stable while U.S. production increased, particularly from two sources—North Dakota's Bakken formation and Eagle Ford in Texas--which together increased by an average of 33 percent. Crude petroleum from the Bakken formation is mainly sweet and light, which is nearly identical to the type of crude petroleum produced in Nigeria.
 - The United States has been increasing the use of natural gas for electricity generation because it is more environmentally friendly and cheaper (due to increased production from shale wells) than fuel oils produced from crude petroleum. From January 2011 to June 2014, the price ratio of crude petroleum to natural gas in the United States quadrupled (see figure 3). With natural gas becoming relatively cheaper and burning cleaner to generate electricity, U.S. natural gas consumption increased by 8.1%, from 67.5 trillion British thermal units (Btus) per day

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in 2010 to 73.0 trillion Btus per day in 2013. At the same time, U.S. crude petroleum consumption decreased by 1.2%, from 111.2 trillion Btus per day in 2010 to 110.0 trillion Btus per day in 2013.

- **Supply Factors:** International energy companies such as Shell, ExxonMobil, and Chevron are the major players in Nigeria's petroleum sector. Nigeria's civil unrest in recent years prompted these companies to shut down parts of their production, which in turn led to a steep decline in Nigerian crude petroleum production.

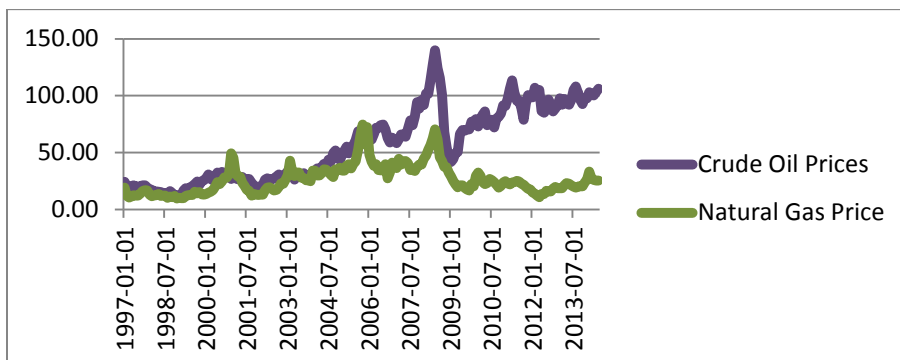


Figure 3: Price Comparison of Crude Petroleum and Natural Gas (in per-barrel of petroleum equivalent).

Source: West Texas Intermediate, dollars/ barrel of petroleum, monthly, St. Louis Fed (for Crude Petroleum); EIA monthly, dollars/million Btus (for Natural Gas). 1 barrel of petroleum equivalent=5.55 million Btus

Drivers of Increasing Chinese and Indian Imports from Africa as well as Future Demand

- **Consumption Outpaced Production Capacity:**
 - China's domestic crude petroleum production capacity increased by 25.5% from 2000 to 2010, from 3.2 million barrels per day in 2000 to 4.1 million barrels per day in 2010. However, during the same period, domestic Chinese petroleum consumption increased by 94.5%, from 4.8 million barrels per day in 2000 to 9.3 million barrels per day in 2010.
 - Similarly, India's domestic production increased by 16.2%, from 646 thousand barrels per day in 2000 to 751 thousand barrels per day in 2010, while its consumption rose by 34.6%, from 2.1 million barrels per day in 2000 to 2.9 million barrels per day in 2010.
- **Future Demand and Supply Remain Uncertain**
Whether Africa will be able to continue increasing its exports to major emerging market economies, such as China and India, remains uncertain, for the following reasons:
 - The annual growth rate of China's domestic petroleum consumption has decreased in recent years, from 14% in 2009 to 2% in 2013.
 - China is deepening its collaboration with Russia and the Gulf Cooperation Council (GCC) to increase its crude petroleum imports from Russia and the Gulf. This effort has included accelerating negotiations for a free trade agreement between China and the GCC as well as clinching supply contracts with Rosneft and Transneft, Russia's two large state-run petroleum companies. In the meantime, China has established pipeline links with Russia, Kazakhstan, and Myanmar to diversify its petroleum import channels.
 - As in Nigeria, political conflicts in other African nations undermine those countries' reliability as suppliers of petroleum exports.
 - All of these factors contributed to a slight decrease in China's crude petroleum imports from Africa from 2010 to the present and likely in the future for petroleum from Africa.
 - India is also seeking to diversify its sources of crude petroleum imports due to some African petroleum exporters' uncertain domestic political environment. As a result, it has increased its crude petroleum imports from Colombia, Mexico, and Iran.

Development Implications of the Fall of Crude Petroleum Prices

- Besides decline in the volume of exports, a nearly 50% drop in crude petroleum prices since late 2014 has already begun to impact the economies of several African nations, particularly Nigeria. The per barrel price of Nigeria's Bonny Light crude petroleum fell from an average of \$99 in 2014 to an average of \$55 during January–April 2015. As a result, Nigeria's currency lost more than 13 percent of its value in early 2015. The sharp reduction of crude petroleum revenue earnings might lead to reduced government spending on education, infrastructure improvements, and pipeline maintenance.

Source: U.S. Energy Information Administration, West Texas Intermediate, World Integrated Trade Solutions, Bloomberg, Reuters, Observatory of Economic Complexity, Xinhua.net, USITC, the Diplomat, Central Bank of Nigeria, OPEC.

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