



Sustaining India's rapid rise as a major refined product exporter

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Over the last decade, India has evolved into the world's seventh-largest exporter of refined petroleum products. According to the US Energy Information Administration (US-EIA), India's refining capacity almost doubled during this period to about 4.35 million barrels/day (mb/d) at the end of 2013, making India the second-

largest refiner in Asia after China, and the world's fifth largest. According to the 2014 *BP Statistical Review*, in 2013, India imported 269,000 mb/d of petroleum products, and exported roughly 1.24 mb/d, making it the largest product exporter in Asia. It has been a net exporter of refined products since 2001.

Interestingly, many of the constraints on the performance of India's upstream sector are present in refining. Indian refining is characterized by large state participation (public sector refining accounted for about 55 per cent of production in 2013/14) and a highly concentrated market. However, in stark contrast to the

upstream sector (which has not yielded material increases in production despite 15 years of liberalization) the refining sector has not been characterized by disappointing outcomes.

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Generally, government policies have encouraged an expansion in refined product capacity, but India's dramatic growth in product exports has arguably been supported by a domestic situation uncondusive towards private sector refined product sales. It has also been supported by trends in international refining, where capacity investments and refined product trading have allowed production from low-cost centres (the IEA in 2013 forecast that global oil trade would decline and give way to more refined product trade, which seems to be playing out), and by overall shortages of refining capacity in the Middle East and Europe. It is therefore unlikely that any well-defined strategic objective, or execution plan to achieve the position of a leading exporter, was in existence, and in this context, the sustainability of India's export refining boom is questionable.

The past was about developing self-reliance

India's government encouraged energy companies to invest in refineries in the 1980s, primarily to build self-reliance in refining capacity and technology, and to reduce expenditure on product imports. Private participation was allowed through joint ventures with public enterprises. By the early 1990s it was acknowledged that precarious government finances would impede public sector oil companies

from making significant investments in refining capacity. In line with economy-wide reforms, 100 per cent private sector investment was approved for refining, and independent licences (for wholly owned private refineries) began to be issued.

Since the 1973 oil shock, the Administered Price Mechanism (APM) had aimed at shielding Indian consumers from crude price volatility and despite the liberalization of refining in the early 1990s, product prices continued to be regulated through this system. In order to attract private investments (and achieve other fiscal and upstream objectives), in 1997, the government announced a phased deregulation of the oil industry and the dismantling of the APM. Measures were undertaken to introduce market-oriented pricing by 2002 (these efforts were short-lived as pricing controls were re-introduced in 2004).

Marketing controls on refined products continued, with the issuance of marketing outlet permits tied to oil production or investment milestones (such as a minimum investment requirement of about US\$400 million in hydrocarbon infrastructure). In 1998/9, the government began reducing customs duty on imported crude (from 27 per cent to 22 per cent in 1998/9, then from 22 per cent to 10 per cent in 1999/2000, and subsequently to 5 per cent in 2005). Later, in the 2000s, the export potential of Indian refineries was recognized (by 2007, India was exporting more than US\$20 billion in refined products) and from 2007 onwards 'Export Oriented Unit (EOU)' status was provided to exporting refineries, with Reliance's Jamnagar refinery becoming the first. EOU status, among other benefits, provided exemptions on customs duty on crude oil imported for refined product exports. A seven-year tax holiday and general exemption on payment of excise duties

for export-oriented refinery units (initially set to expire in 2007) were extended for refineries that commenced production before March 2012.

The last decade: private refiners dominated exports

Private participation in India's refining sector was marked by the entry of companies such as Reliance and Essar, who sought to own the end-to-end refining and marketing value chain capabilities by supplying their own retail outlets with products from their refineries. By about 2005 the private sector was estimated to have captured about 20 per cent of India's petroleum retail market. With higher refining margins (primarily due to higher cost efficiencies) than public sector enterprises, the business of operating along the entire production, distribution, and marketing chain made sense for private refiners.

However, such market entry initiatives were short lived. With the increase in global crude oil costs since 2006, the government reversed its policy towards 'market parity pricing' for refined products. Consequently, product sales at subsidized prices by public sector oil marketing companies resulted in private retail outlets being unable to compete in the domestic market. Whereas public refineries were able to receive subsidies for selling products below cost, such benefits were unavailable to private producers. Given this, private refiners stopped product sales through their retail outlets and moved more refined output to the export market (some product sales continued to be made directly to public sector oil marketing companies at trade-parity prices). This trend has continued since 2006 and has supported the rapid increase in refined product exports (in terms of economic value, Indian refined product exports have trebled from



about US\$20 billion in 2006/7 to about US\$60 billion in 2013).

Diesel is India's primary export product, comprising over 40 per cent of the export basket by value, followed by petrol at 25 per cent, and naphtha at 12 per cent. The Middle East is the largest destination for Indian product exports (followed by east Asia), estimated as taking over 20 per cent. Europe is also an important buyer of Indian products, primarily due to contracting refining capacity over the last several years.

Looking ahead – increased capacity in key markets and among competitors

European demand for refined products is not expected to grow substantially over the coming decade, in keeping with slower projected economic growth. While consumption in the Middle East continues to grow, countries across that region are planning and executing multiple refinery projects (the Yanbu refinery with a 400,000 barrels/day capacity was close to commissioning in late 2014) which will reduce its demand for imports. Oil producers in the Gulf (Saudi Arabia, the UAE, Kuwait, Oman, and Qatar) are expected to add about 3.5 mb/d in refining capacity by 2022. While some of these are capacity replacements for older refineries that will be decommissioned, capacity addition in the Middle East is bound to shrink the market for Indian product exports, as there is little prospect of these large volumes being replaced by growth in product demand from other regions.

Export-oriented Indian refineries have complexities at the higher end of the range than those conventionally seen for refineries (the Nelson Complexity Index for the Reliance refinery is 9.93, while for the overall Jamnagar Complex it is over 14.0), and are thus able to generate greater margins (or provide higher value addition). Even so, it is

unlikely that Indian exports will continue to remain competitive with incremental refining capacity from newer Middle Eastern refineries, due to shipping costs for inbound crude and outbound product, together with import (and export) tariffs and charges. Additionally, much of the existing and new Middle Eastern refining capacity has common or overlapping shareholding with upstream entities and is able to secure discounted crude supplies.

On the supply side, while China has traditionally been a net importer of refined products, it has seen huge capacity additions in recent years. According to the US-EIA, China's refining capacity increased by about 7.3 per cent in 2013 and stood at 13 mb/d at the end of 2013. Similar additions were planned in 2014. However, faced with an economic slowdown, Chinese demand has not kept pace with capacity additions, leading to capacity utilization rates of about 75 per cent. The excess capacity is bound to find its way towards the export market – in recent years China has been exporting some refined products, primarily within its neighbourhood.

Assuming broadly similar advantages in capital and labour costs, and refinery complexity, when compared with Indian refiners, Chinese refined product exports are disadvantaged by additional shipping charges when exporting to the larger demand centres of the Middle East. Consequently, Chinese exports currently tend to be oriented towards east Asia and neighbouring countries in the South China Sea. However, this is a crowded market with growing export capacity in South Korea, Singapore, and Taiwan and surplus refining capacity developing in Japan from declining domestic demand. Therefore, with large capacities combined with slowing domestic Chinese demand growth and increased export capacity in the neighbourhood, it is likely that there will

be increased competition from Chinese (as well as Korean) refined products for Asian, Middle Eastern, and European market shares – which are currently also served by Indian refineries.

Looking ahead – domestic diesel consumption growth could choke export capacity

A strong correlation arguably exists between economic growth and product demand. Given the revised economic outlook for India (the IMF estimates 6.3 per cent GDP growth this year and 6.5 per cent in 2016), it can be expected that a good portion of the demand for refined products over the next decade will come from the Indian domestic market. As diesel forms a significant portion of India's export basket, the growth in domestic diesel demand will have a significant bearing on the country's refined product export capacity. Global average demand for diesel represents 30 per cent of all refined products, while in India it is around 5 per cent. Under a base case scenario of healthy economic growth and continued liberalization and globalization of the Indian economy, the country's diesel demand could rise towards the global average.

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The trajectory of domestic diesel demand is especially important following recent developments in India's diesel pricing policy. Since the late 1990s, successive Indian governments have aimed to achieve the deregulation of petroleum product prices and reduce the petroleum subsidy burden on the government (estimated at about 0.5 per cent of GDP in 2014/15). Petrol prices were

deregulated in June 2010. Beginning in January 2013, diesel prices began to be decontrolled, with a gradual movement towards international levels. The fall in crude oil prices since June 2014 expedited this process. The subsidy on diesel ended in September 2014 and diesel prices were officially deregulated in October 2014.

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'... A SUSTAINED AND REGULAR INCREASE IN THE PRICE OF DIESEL HAS NOT REDUCED CONSUMPTION.'

The deregulation of diesel prices will have a two-pronged impact on diesel marketing within the domestic market and, by extension, on diesel exports. While increased diesel prices should logically lead to a fall in domestic demand, the deregulation of prices makes it lucrative for Indian refineries to sell in the domestic market, and thereby avoid potentially reduced margins on diesel exports. In their paper 'Diesel Pricing Reforms in India – a Perspective on Demand' (OIES

Energy Comment, 2013) Fattouh, Sen, and Sen, have concluded that while domestic diesel demand growth should fall with the price increases that have followed the deregulation, diesel demand in India is contingent on other factors, such as the relative prices of petroleum products and the impact of differential rates of state taxation. India's domestic diesel demand is unlikely to decline immediately, despite the effects of relative pricing and taxation. An analysis of diesel consumption/demand in India, when compared to the wholesale price of diesel, shows that a sustained and regular increase in the price of diesel has not reduced consumption.

Refined products constitute about 20 per cent of India's non-service exports by value. The growth in exports is a recent phenomenon but has been backed by genuine product pricing competitiveness – exports have been led primarily by India's private refiners operating new and complex refineries.

Even so, India faces challenges to its ability to sustain export growth rates, or even to the maintenance of current levels of exports. Growing product demand and price deregulation in the domestic market, combined with greater competition to supply India's current core export markets, could result in a redirection of products into the domestic market, reducing refined product exports. Alternate markets in Africa and Latin America are less lucrative for Indian refiners than the Middle East, as they require higher shipping tariffs. A sustained increase of refining capacity, combined with increased and aggressive international marketing, will be required to continue India's export momentum. If, however, product exports were to fall, while India's foreign exchange earnings would also fall, its domestic market could gain from increased competition and access to products at competitive retail prices as a result of the lower cost bases of the relatively efficient private sector producers.

