

## Asian Oil Market Outlook: Role of the Key Players

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# Asia Pacific

## I S S U E S

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**S U M M A R Y** The Asia Pacific region's dynamic oil market is marked by strong growth in consumption, declining regional oil production, and over capacity in its highly competitive oil-refining sector. Its "key players" are China, India, Indonesia, Japan, and South Korea—a group that includes the region's five top consumers and three of its major producers—and developments in these countries will have commercial and strategic implications for the whole region. On the consumption side, Japan's slow growth in demand has failed to dampen regional growth, which is now driven by China and India's fast growing thirst for oil. On the supply side, Indonesia's inevitable transition to a net oil importer highlights the trend toward growing dependence on Middle East oil, which already comprises 42–90 percent of imports among the key players. In response to this trend, China, Japan, and South Korea are pushing to acquire overseas oil reserves, with Japan and China already locked in a fierce competition for projected Russian supplies—a type of struggle that will likely become more commonplace.

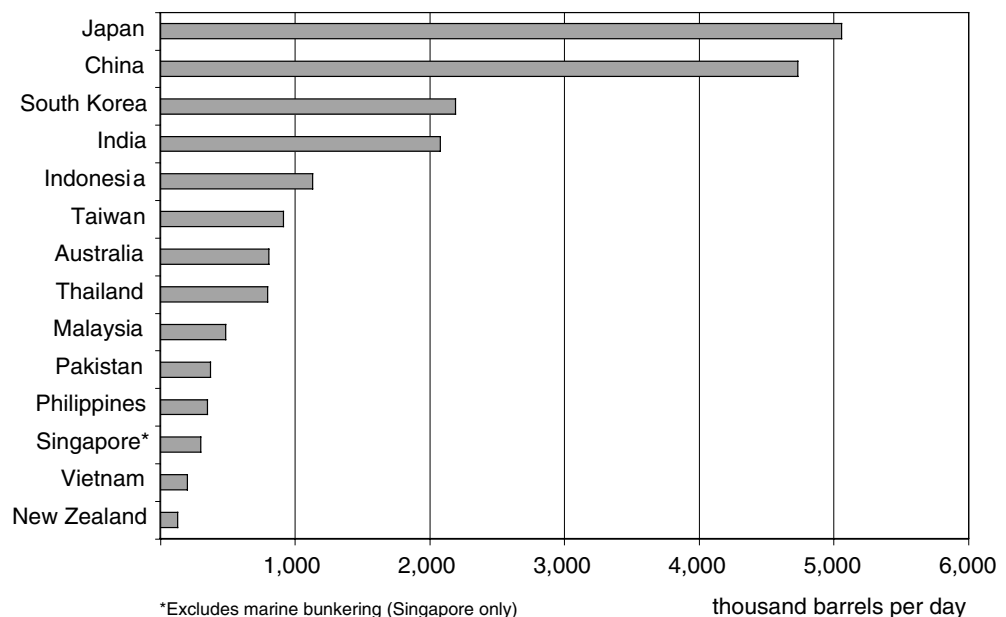
## Introduction

The Asia Pacific region has an exceedingly dynamic oil market, marked by strong growth in consumption, declining regional oil production, and an intensely competitive oil refining sector. The region's "key players" are China, India, Indonesia, Japan, and South Korea, which dominate most aspects of the oil market. This group includes the region's top five consumers (Figure 1) and several of its major producers (Figure 2).

Clearly, future developments among these key players in the oil industry will have major commercial and strategic implications for the region as a whole. For example, Japan is the largest economy and largest oil consumer in the region, and if Japan's economic stagnation continues it will have a substantial impact on the regional growth in oil consumption—a situation which oil producers are watching closely. China and India are the most populous countries in the region and the world, and are also among the region's fastest growing economies. As a consequence, China will soon pass Japan to be the largest oil consumer in Asia, and India will later pass South Korea to be the region's third largest consumer. While South Korea's consumption is not growing as fast as China's or

India's, given its sizable market and refining sector it will continue to play a vital role in the regional demand and supply picture. Finally, Indonesia is the only OPEC (Organization of Petroleum Exporting Countries) member in Asia. In spite of the fact that it is an important exporter, a combination of rapid consumption growth and stagnant production will transform Indonesia from a net oil exporter to a net importer around the middle of this decade.

Of the major strategic challenges that the Asia Pacific region will face in the future, among the most pressing is a long-term decline in regional oil production that will lead to rapidly expanding oil imports over the next 10–15 years. In response to this trend, China is following the path of Japan and South Korea in a push to secure ownership of overseas oil reserves, often paying what many consider to be exorbitant prices in the name of energy security. In addition, a variety of pipeline projects are under consideration that aim to bring Russian oil to Northeast Asia in an effort to diversify away from crucial Middle East sources. China and Japan are currently locked in a diplomatic and commercial competition for the Russian oil—highlighting the type of struggle that is likely to become more commonplace in the future.



**Figure 1. Total oil consumption by country in 2002**

*China and India are expected to account for at least 50% of the region's increased oil consumption between now and 2015*

### Regional Oil Consumption Outlook

Robust economic growth is generally linked with increased energy consumption, and this has certainly been the case in the Asia Pacific region. Over the past several decades, the economies of China, India, Indonesia, South Korea, and (until the 1990s) Japan have been among the fastest growing in the world. Regional consumption of petroleum products in Asia and the Pacific grew in the range of 5–6 percent per year between the mid-1980s and the mid-1990s before dropping off with the 1997–98 regional economic crisis. Consumption growth has not recovered to previous levels and is likely to remain in the range of 2.5–3 percent per annum, as reflected in Figures 3 and 4. The slowdown can be traced partly to a drop-off in economic growth in some countries, but it must also be attributed to a move toward energy market price deregulation that has left many consumers more exposed to oil price volatility than they were in the past—a trend that is likely to continue. Consumers responded to the recent high oil prices as might be expected, by reducing consumption.

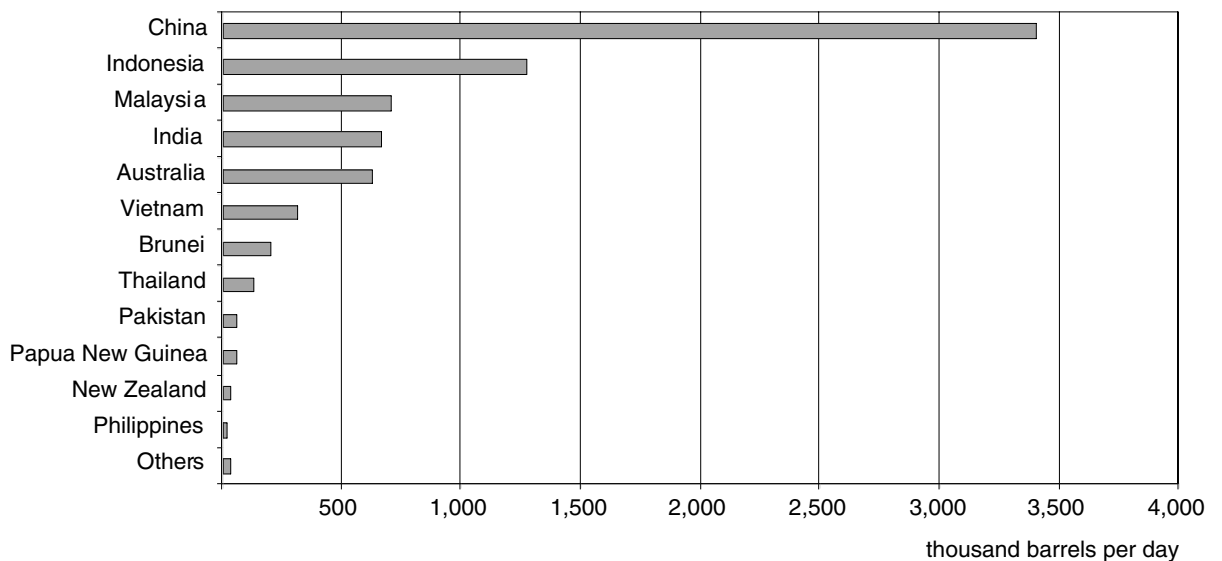
Among the key players in the region, China, India, and Indonesia are set to lead future growth in oil consumption. Each of these countries currently consumes less than 0.01 barrels of oil a day per capita

(Figure 5), and with enormous populations and a robust economic outlook the potential for growth is huge.

Figure 6 shows projected incremental growth in demand among the key countries in the region. China and India alone are projected to account for fully 50–55 percent of regional consumption growth over the period 2002–2015.

Although Japan and South Korea average several times more consumption per capita than the other key players, because their markets are more mature their role in the region's incremental growth is likely to be smaller than in the past. However, as major consumers Japan and South Korea still have the potential to substantially affect the market. For example, in recent years Japan's economic stagnation has contributed to oil consumption declines and dramatically slowed regional consumption growth as a whole. Japan remains a wild card, and if its economy continues to languish, regional consumption growth is likely to remain relatively slow.

The incremental growth outlook for individual petroleum products is highlighted in Figure 7. Although growth in the consumption of liquefied petroleum gas (LPG) and naphtha is projected to remain robust as a result of expanding residential and petrochemical energy use, it will slow somewhat



**Figure 2. Total oil production by country in 2002**

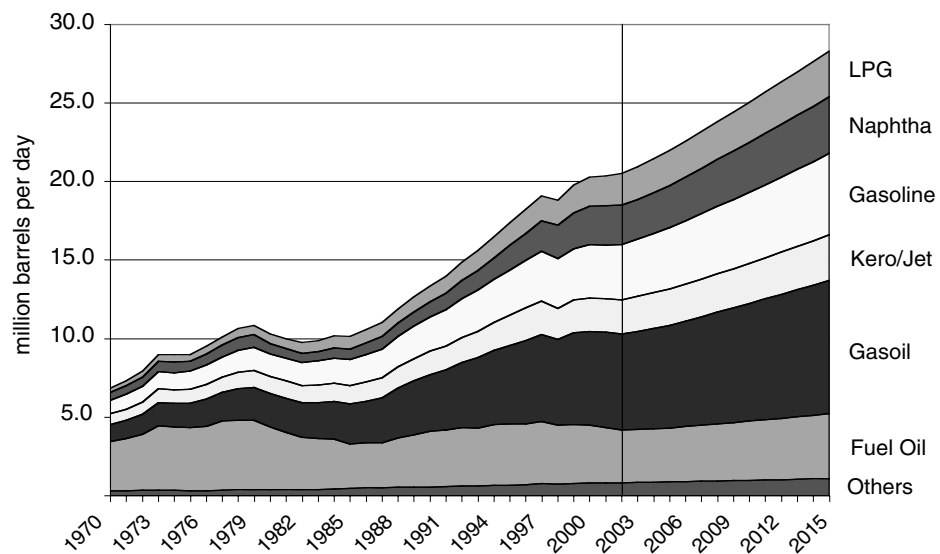
from the extremely high growth rates that these products posted over the past several decades. As would be expected as the region's economies grow and mature, consumption of transport fuels—gasoline, diesel (gas-oil), and jet fuel—will grow faster than overall consumption. Finally, in contrast to other areas of the world where the consumption of fuel oil—which is used primarily for power generation and in industry and shipping—is in decline, in Asia it will continue

to grow, albeit slowly, as alternative fuels are often not as readily available in Asia as in other areas.

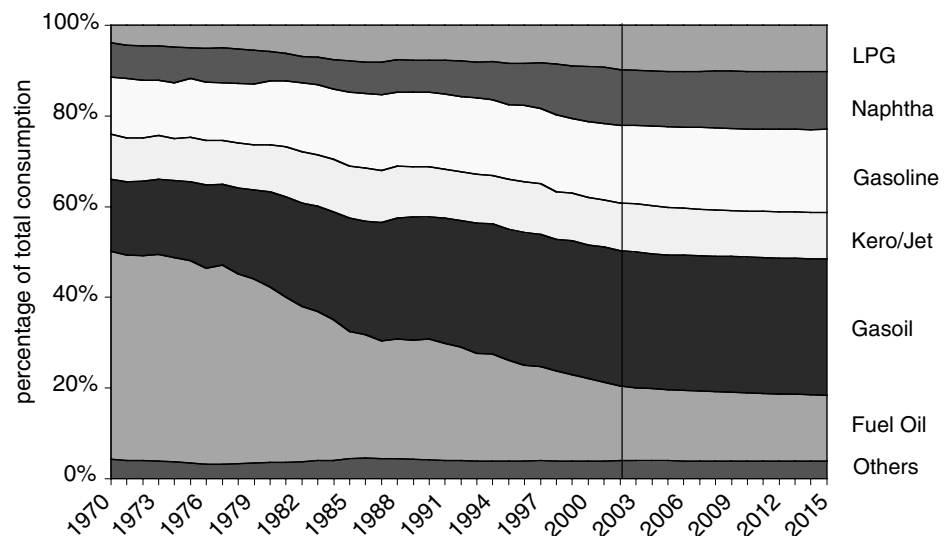
### Regional Refining Outlook

Over the past several years the Asia Pacific region has witnessed dramatic developments in the downstream (refining and marketing) sector. Between 1999 and 2001 approximately 2.5 million barrels per day (b/d)

*In contrast to other areas in the world, in Asia consumption of fuel oil is expected to grow*



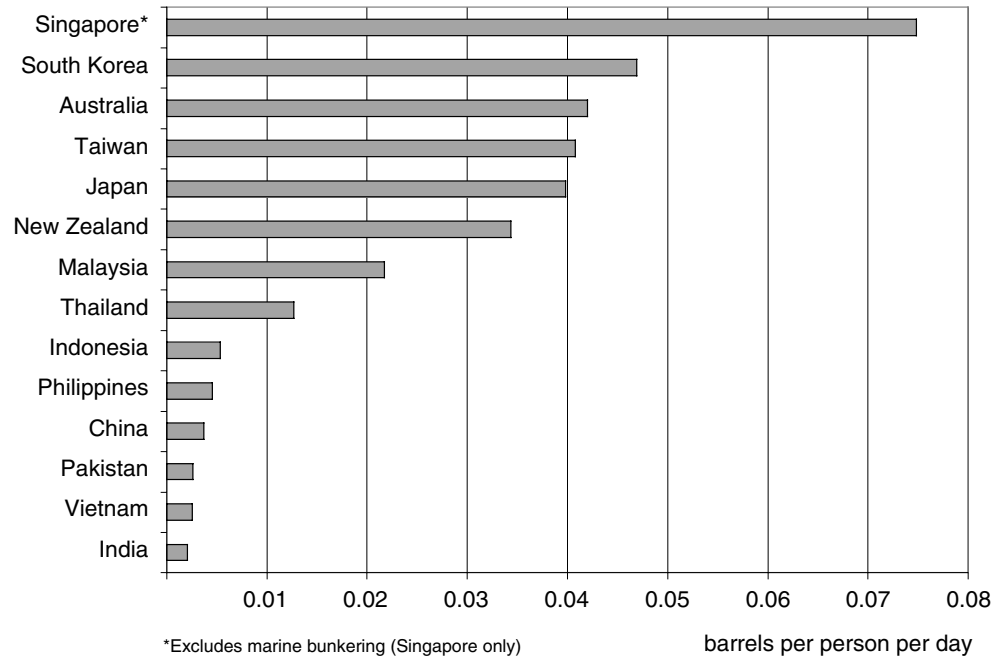
**Figure 3. Product demand (amount): history and forecast**



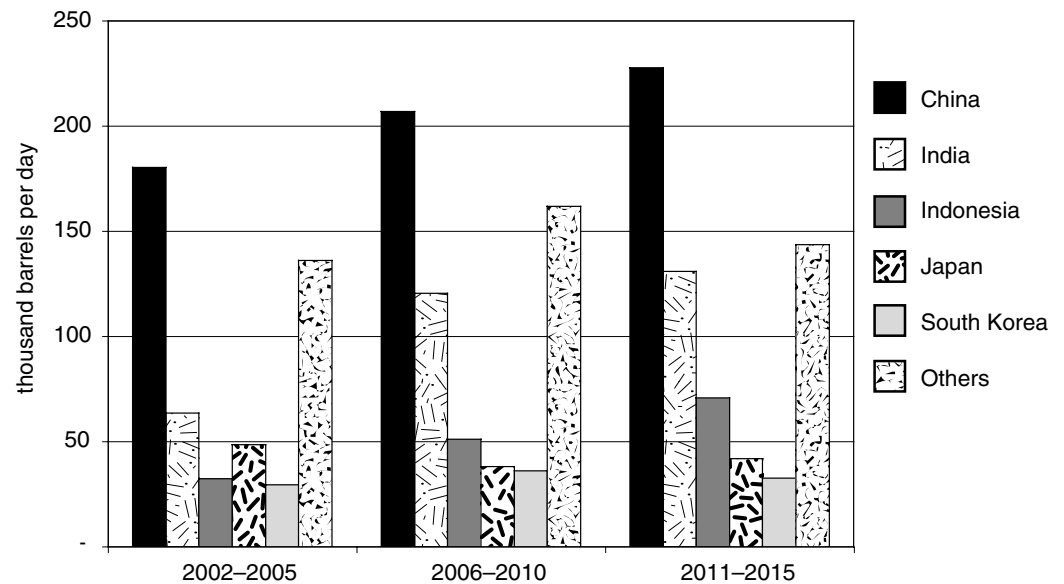
**Figure 4. Product demand (percentage): history and forecast**

of new refining capacity came on line, mostly in China, India, and Taiwan. Until recently, the oil markets in these three economies were highly protected, and, in China and Taiwan, dominated by state-owned monopolies. Government development policies and the

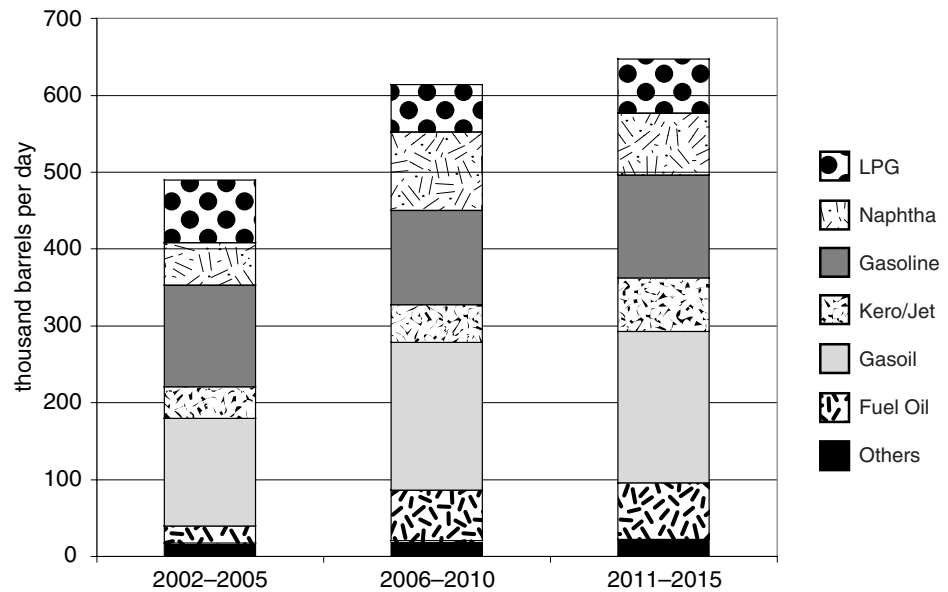
assurance of profitability in protected markets led to a massive buildup of new refining capacity in these three economies. These additions coincided with relatively weak product demand growth, and consequently they had a tremendous negative impact on the



**Figure 5. Per capita oil consumption**



**Figure 6. Projected average annual growth in Asian oil consumption, 2002-2015**

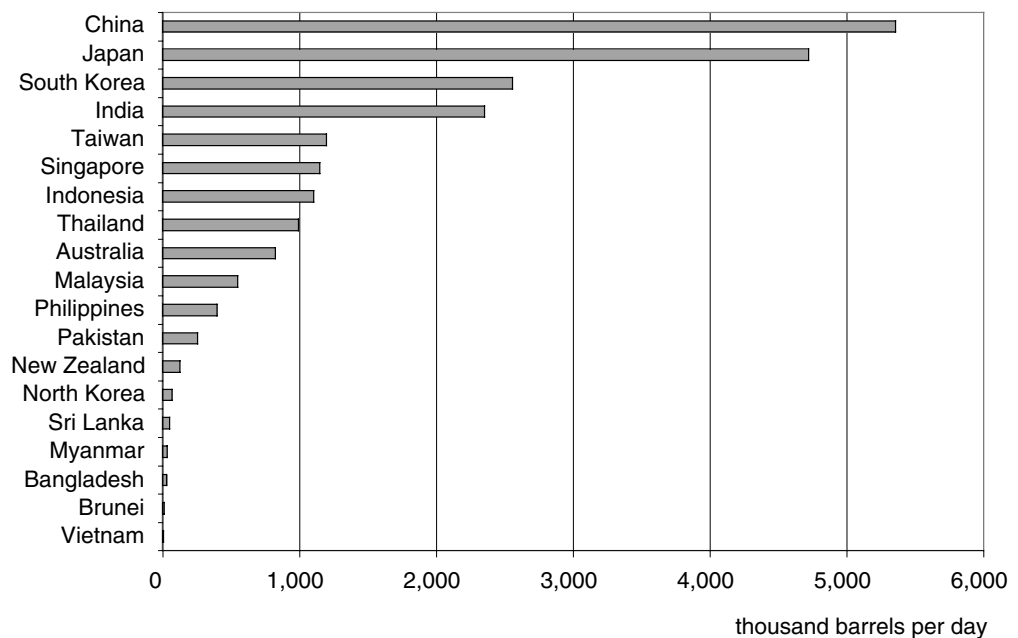


**Figure 7. Projected average annual growth in product demand (by product)**

profitability of many of the region's refiners. Figure 8 shows that the key players dominate the regional refining scene.

Although steps have been taken toward deregulation, most Asian refineries continue to operate under protection. For example, in China and India refiners are protected by an import duty structure

that places lower duties on crude than on products derived from crude. As a consequence, they often enjoy healthy profits even when those in the open market are operating at a loss. In Indonesia there is also heavy market intervention, with Indonesian refiners enjoying a guaranteed rate of return. Japanese and South Korean refiners do not have the protection



**Figure 8. Regional crude distillation (refining) capacity**

*The Asia Pacific region imports 59% of its oil, a figure that will likely grow to as much as 69% by 2010*

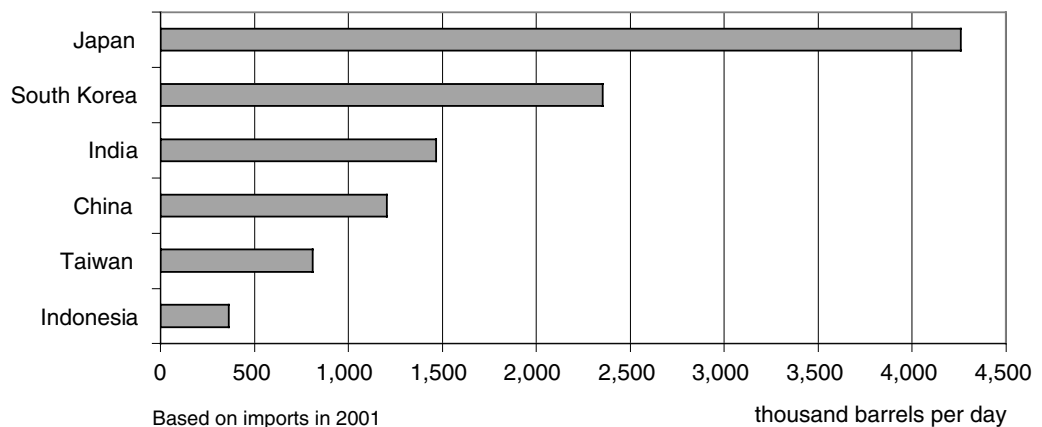
of a formal barrier to entry, but their market structures make it very difficult for outside competitors to establish refineries or import petroleum products. Because most Asian markets are subject to some form of explicit or implicit protection, the refiners operating in the region's few fully deregulated markets (e.g., Singapore and Thailand) are bearing the brunt of the impact of the regional excess in refining capacity. Excess products are most easily exported into these countries, which is having a severe negative impact on domestic refiners.

#### Regional Oil Production and Trade Outlook

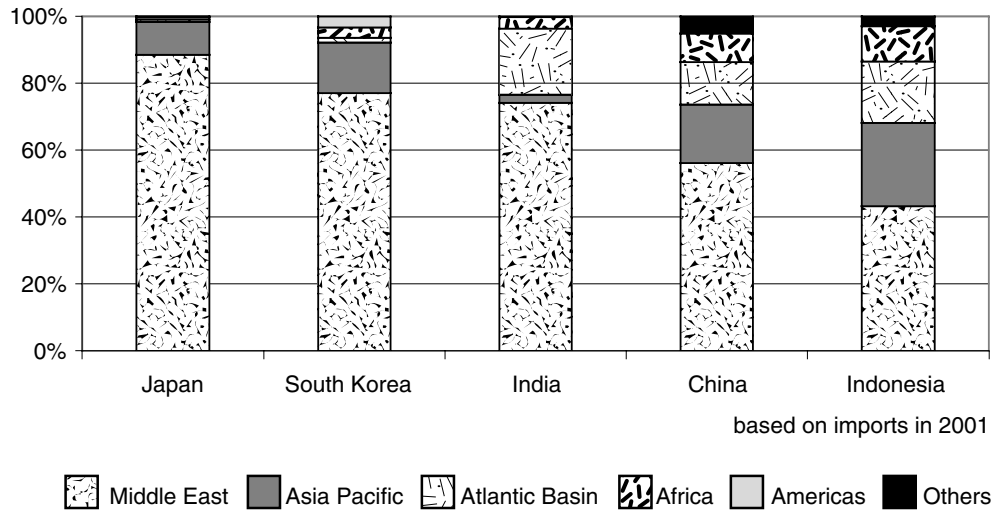
Among the Asia Pacific countries that produce crude, most consume it domestically. In 2002 almost 70 percent of the crude produced in the various Asian countries was consumed within the same country. China is by far the region's largest producer, at 3.4 million b/d in 2002, followed by Indonesia at 1.3 million b/d. Of the other key players in the region, India is the region's fourth largest producer, with 659,000 b/d. China's production is projected to increase in coming years, but this increase will be counteracted by declines in Indonesia, Australia, and Malaysia, so that overall regional crude output is projected to decline. India's production is stable, but growth will remain sluggish unless India adopts a more open foreign investment policy in the upstream (exploration, development, and production) oil sector.

Currently, the Asia Pacific region imports approximately 11 million b/d of oil, or 59 percent of total consumption. However, with regional production projected to remain flat, Asian imports will grow in the future—possibly to as much as 14–15 million b/d toward the end of the decade, or 65–69 percent of total consumption. Japan is the region's largest importer, followed by South Korea, India, and China (Figure 9). Indonesia sits in the number six position. Of this group, Japan has the highest dependence on Middle Eastern oil and Indonesia the lowest (Figure 10).

Overall, Middle Eastern oil accounts for over 75 percent of the region's imports. At the same time, Asia is the Middle East's largest customer, accounting for over 60 percent of the crude exported from the region. Given current trends in production and consumption, it is clear that these two regions will become increasingly intertwined, both commercially and strategically, in the future. Already, Middle East oil producers retain shares of downstream operations in consuming countries, such as Saudi Aramco's interest in South Korea's S-Oil, and they are seeking to develop new ties, such as Saudi Aramco's joint venture with ExxonMobil and China's Sinopec to build a refinery in Fujian province. In general, these relationships are actively promoted by the respective countries as a way of promoting energy security for Asian consumers and revenue security for Middle East producers.



**Figure 9. Top five Asian importers of crude**



**Figure 10. Sources of imports of the key players**

#### Highlights of the Key Players

Given the dominant role played by China, India, Indonesia, Japan, and South Korea in the Asia Pacific oil market, it is clear that future developments in the oil markets in each of these countries will have major commercial and strategic implications in terms of import requirements and the pursuit of enhanced energy security, as discussed earlier. In particular, the importance of China and India will grow as their economies continue to develop at a rapid pace. Recent developments in the oil markets of these key countries are highlighted below.

#### China

- The petroleum industry is one of the most protected industries in China. However, this is changing, especially with China's entry into the World Trade Organization (WTO) at the end of 2001. A leadership change in late 2002 and a governmental reshuffle in early 2003 may also open the door for continued moves toward market deregulation and liberalization during the coming years. As a result, China is likely to import more oil and petroleum products in the future and it may also attract more foreign investment in its oil, gas, and petrochemical sectors.
- A combination of rapid growth in petroleum product consumption and slow growth in crude

oil output will lead to a rapid rise in imports, especially from the Middle East. Over the past several decades, China experienced the most radical changes in Asia, evolving from the region's largest oil exporter to a giant oil importer. China will soon surpass Japan to be Asia's largest oil consumer, and it currently imports approximately 30 percent of its consumption.

- China has pushed hard to promote overseas oil investments by its state oil companies through buying stakes in foreign oil-production ventures as part of the government's overall strategy to deal with growing concerns over the country's energy security. These moves have produced mixed results, with some successes and some failures.
- In the long term, Russia is likely to emerge as a major energy supplier to China, but the country's dependence on the Middle East will continue to grow.

#### India

- India's refining capacity doubled between 1995 and 2001, transforming the country from a major importer to a net exporter of certain petroleum products, such as diesel. In spite of this dramatic increase in refining capacity and the fact that consumption growth recently slowed, Indian refiners prosper under an umbrella of tariff protection.

*The petroleum industry is one of the most protected industries in China, but this is changing*



*A gauntlet of obstacles makes it difficult for competitors in the refining sector to penetrate the Japanese market*

- Over the past several years, India has initiated a number of oil industry reforms. For example, in April 2002 the government dissolved its administered pricing mechanism (APM), which in principle resulted in a partial decontrol of domestic product prices. In practice, however, oil marketing companies still require the government's agreement to adjust prices.
- Over half of India's crude is sourced from the Middle East. Domestic crudes account for about 30 percent of the total crude requirement, and the remainder is imported from the Atlantic Basin and other Asian countries.
- In recent years, India has adopted a much more aggressive approach toward overseas investment. This should help offset declines in domestic crude oil production, which has dropped from a peak of 630,000 b/d in the mid-1990s to current levels of approximately 500,000 b/d. Depletion of existing fields and a lack of investment in upstream exploration on the part of the largely state-controlled oil industry are the major reasons behind the production decline.

#### **Indonesia**

- In October 2001 Indonesia passed the Oil and Gas Law that ended state-run Pertamina's monopoly over the nation's oil market. At present there is confusion over Pertamina's future role and the rules governing foreign players in the domestic market, which is inhibiting new investment.
- Among the challenges Indonesia faces is bringing petroleum prices, which are subsidized, more in line with the global market. In the past, moves to reduce subsidies have been met with major protests. While price subsidies are politically popular, many feel that they should be scaled back because they are a major drain on government resources, distort consumption patterns, and encourage smuggling.
- Because of security problems in some producing areas, and the fact that new finds have not offset declines in older producing fields, Indonesia's crude oil production has been in decline since the mid-1990s. In the future, Indonesia will likely

have to offer more attractive contract terms to encourage investment and increase production.

#### **Japan**

- In 2002 Japan posted its third consecutive annual decline in petroleum product consumption. Combined with a pending move toward stricter petroleum product specifications that would increase costs, this could force some refineries to close down.
- While the situation appears bleak for Japan's refiners, it could be worse—although the market is nominally deregulated and open, there are several characteristics of the Japanese market that serve to protect domestic refiners from outside competition. For example, the country has relatively small product receiving terminals and hefty storage requirements for product importers, which combine to act as a major brake on competition. In addition, Japanese refiners enjoy favorable tariffs that provide protection from imports, particularly for fuel oil. This gauntlet of obstacles makes it difficult for competitors to penetrate the market.
- As Japan imports essentially all of its oil, energy security has always been a top priority. The state-run Japan National Oil Company (JNOC), which has performed dismally, is scheduled to be dismantled by 2005, but Japan is continuing its drive to secure overseas oil assets. The government is in talks with both Russia and Iran about investment opportunities.
- The details of the JNOC dissolution are still in the works, but a proposed plan would merge certain key assets into an internationally competitive flagship company. This company would eventually be privatized, but safeguards will be put in place to ensure that it is not taken over by an international oil company. The hope is that the new company will, unlike JNOC, successfully secure overseas oil assets at a reasonable cost.

#### **South Korea**

- Over the course of the 1990s South Korea moved steadily toward deregulation of the domestic petroleum industry. Since 1999 new entry into the retail market and imports of refined products have been

*It is inevitable that the 'key players' in Asia and the oil-producing nations of the Middle East will become increasingly intertwined*

allowed and a few independent retailers are putting some pressure on prices. Indeed, around 10 percent of the market is now controlled by independents, as opposed to one percent in 1999.

- Like Japan, South Korea is entirely reliant on oil imports. In an effort to enhance energy security, state-owned Korea National Oil Company (KNOC) is pushing forward in pursuing overseas equity stakes in exploration and production. The South Korean government has charged KNOC with the goal of providing 10 percent of South Korea's oil from its overseas investment projects by 2010. Currently KNOC is a shareholder in production in fields in Yemen, Argentina, Peru, and the U.K.

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### Conclusion

The five key players discussed here are the driving force behind the Asia Pacific region's oil demand, supply, and import outlook. On the consumption side, the slow growth in Japan and, to a lesser extent, Korea is more than compensated for by the continuously fast growth in China and India, pushing up the region's overall consumption to unprecedented levels. In terms of oil supply, Indonesia's move toward becoming a net oil importer is indicative of the overall trend toward lower regional oil production and growing consumption that will result in a dramatic increase in Asia Pacific oil imports, especially from the Middle East.

Asia's dominant oil-consuming countries—particularly the five countries discussed here—are wary of current trends and several have sought to establish relationships with suppliers outside the Middle East, such as Russia, to enhance security of supply. In terms of overall supply, however, such moves will not fundamentally change the supply situation. For

example, the potential for large-scale Russian oil exports to Asia is limited by the lack of export facilities in the Russian Far East and insufficient investment in exploration, production, and infrastructure in the eastern part of the country. As a result, Russian oil will continue to move mainly to Europe. Overall, it is inevitable that the key players in the Asia Pacific region and the Middle East producing nations will become increasingly intertwined in the future.

Due to a combination of rampant capacity additions and relatively stagnant demand, the profits of many Asia Pacific refiners have been miserable in recent years. The situation varies somewhat among the key countries in the region, depending on the status of the domestic market, but in general moves toward deregulation and open markets have left domestic refiners more exposed to lower regional margins than they were in the past. In the long run, however, these moves will help to establish the correct incentives when decisions about adding refining capacity come in the future, thereby ensuring the health of the industry. In spite of a more promising long-term outlook, the near-term profits will remain low until the regional excess refining capacity is absorbed.

A final important trend that has emerged over the past several years is the increasingly aggressive pursuit of overseas assets by Asian countries. While Japan, Korea, and to a lesser extent Taiwan, have been pursuing overseas oil investment for decades, China and India have emerged as new players. Oil producers in these two countries—plus Malaysia—are especially assertive, sometimes moving into areas where others are hesitant to tread for either political or public relations reasons, such as Iran and Sudan. This trend will most likely continue as the concern over increasing import dependence and energy security grows in these countries.

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2003 as *East-West Center Working Papers, Economic Series No. 55*, which can be found on the East-West Center website at [www.EastWestCenter.org](http://www.EastWestCenter.org). Data presented draw on the East-West Center and FACTS Inc. database, as well as industry sources.

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### For Further Reading

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