

# *Trade Patterns of Petroleum Products in Northeast Asia*

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- Trade Patterns of Petroleum Products in China, Russia, Japan, and Korea
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- Prospects for Petroleum Product exports in NEA



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## Trade Patterns of Petroleum Products in China, Russia, Japan, and Korea

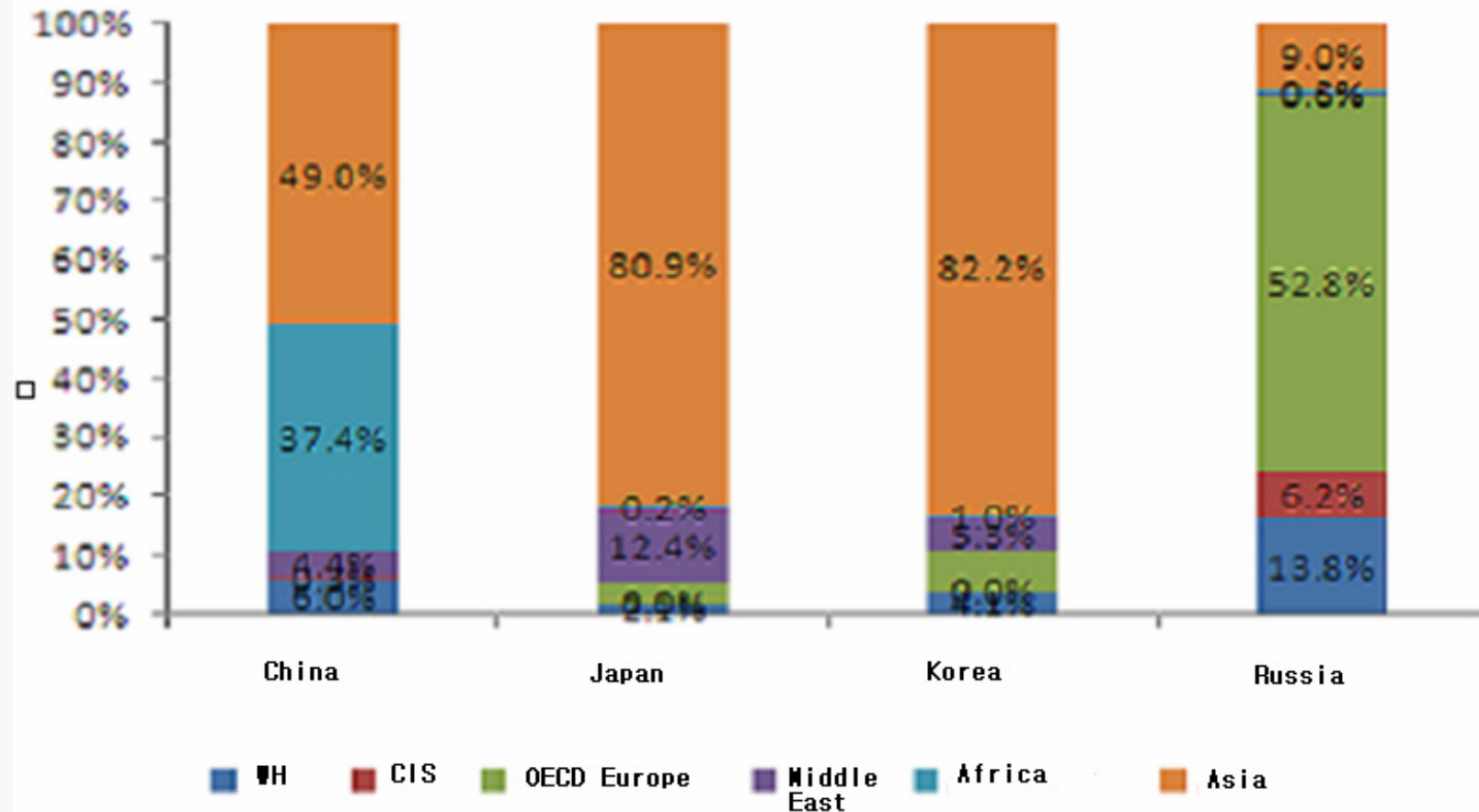
## Exports of Petroleum Products within NEA

HS Code: 2710, Unit: Million Dollars

	China	Russia	Japan	Korea
Annual Average Export Value (1996 ~ 2005)	499.78	797.5	664.9	4,320.4
Share (%)	8.0	12.7	10.6	68.8
Annual Average Export Value (1996 ~ 2000)	318.02	357.3	542.52	3,519.3
Share (%)	6.7	7.5	11.5	74.3
Annual Average Export Value (2001~2005)	681.5	1149.6	787.3	4,961.2
Share (%)	8.9	15.2	10.4	65.5

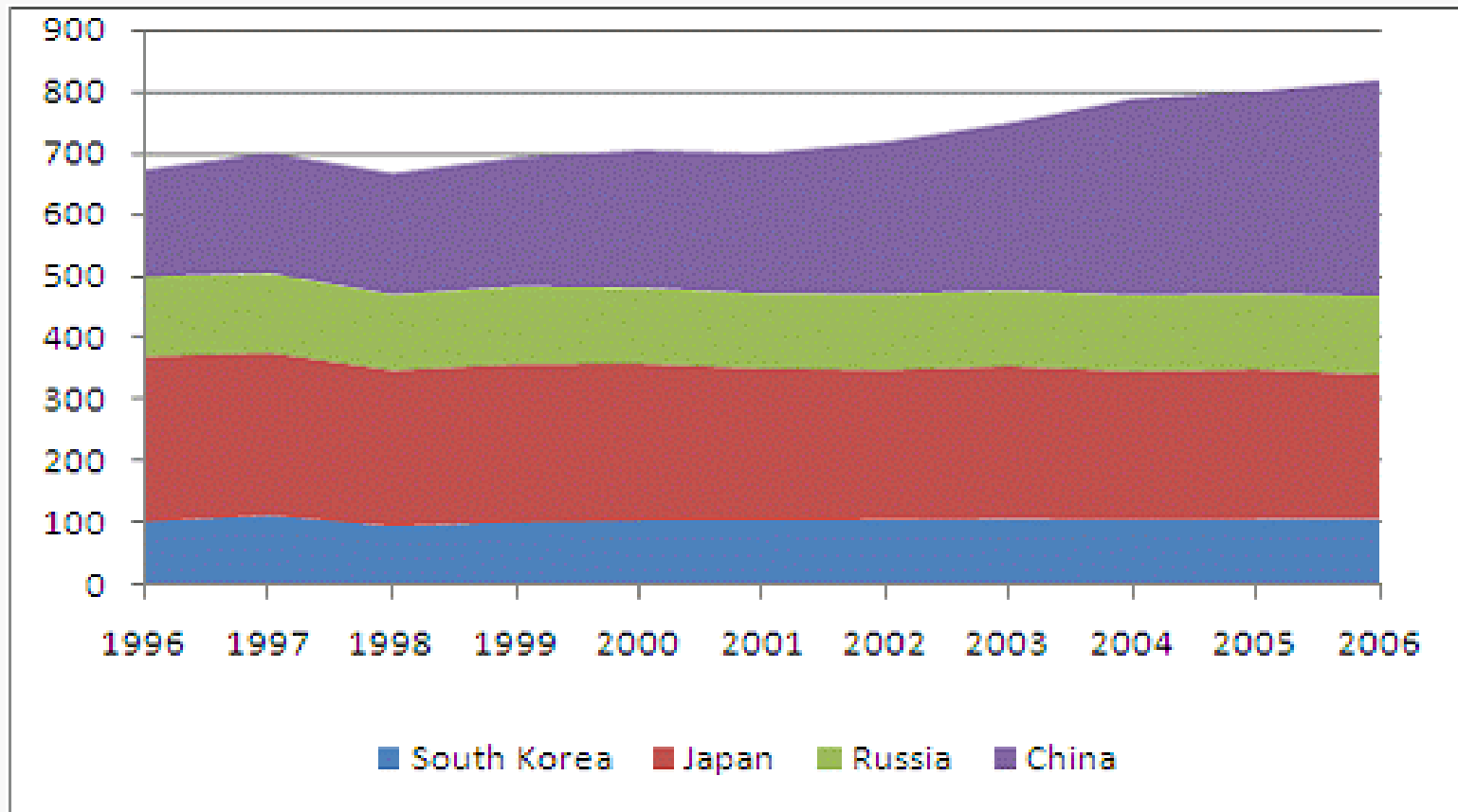
Source: United Nations Commodity Trade Statistics Database

## Regional Structure of Northeast Asian Countries' Exports of Petroleum Products in 2005



Note: WH (West Hemisphere) consists of countries in North & South America.

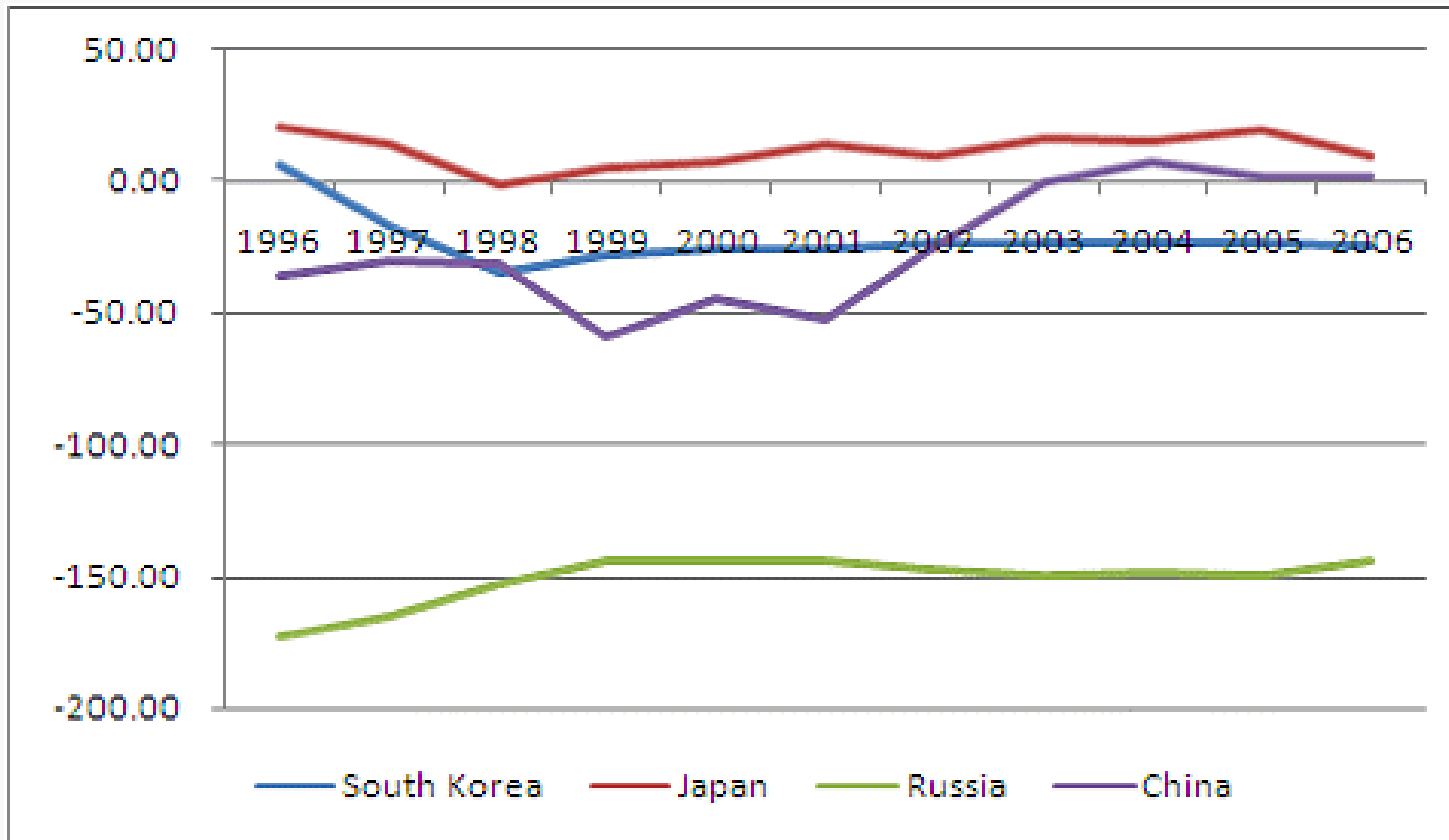
## Oil Consumption in NEA Countries



Source: BP Statistical Review of World Energy, 2007

## The Gap between Oil Consumption and Refining Capacity in NEA (Oil Consumption-Refining Capacity)

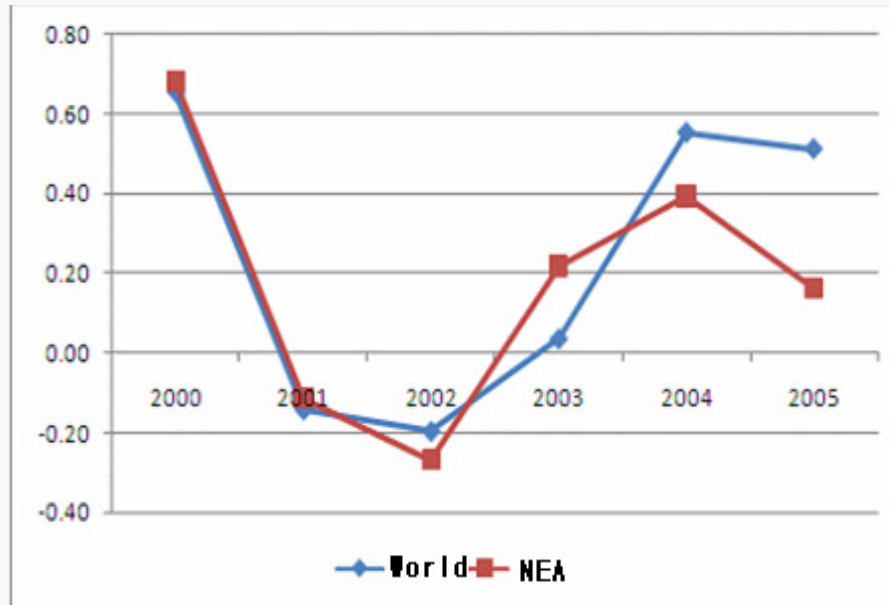
Unit: Million Ton



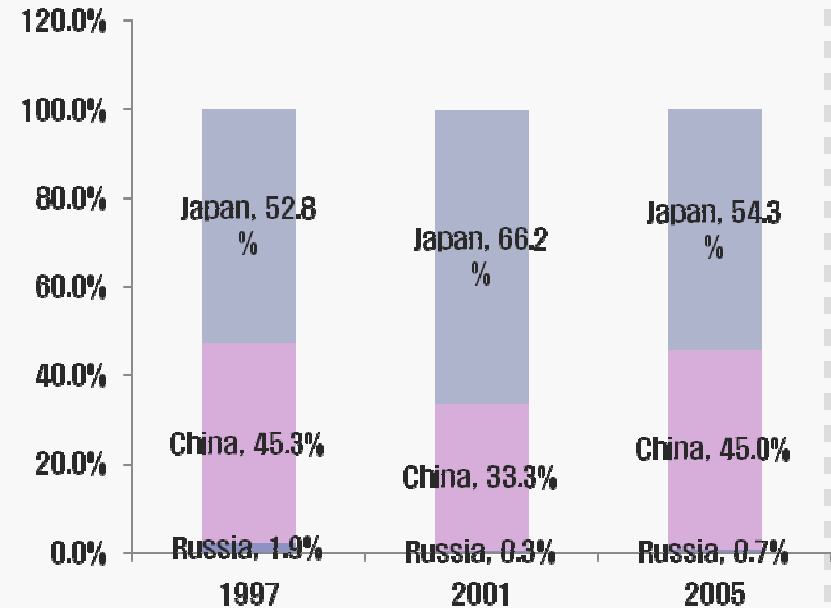
Source: BP Statistical Review of World Energy, 2007

# Korea's Exports of Petroleum Products in NEA (Net Exporter)

Annual Growth Rate of Korea's exports of Petroleum Products



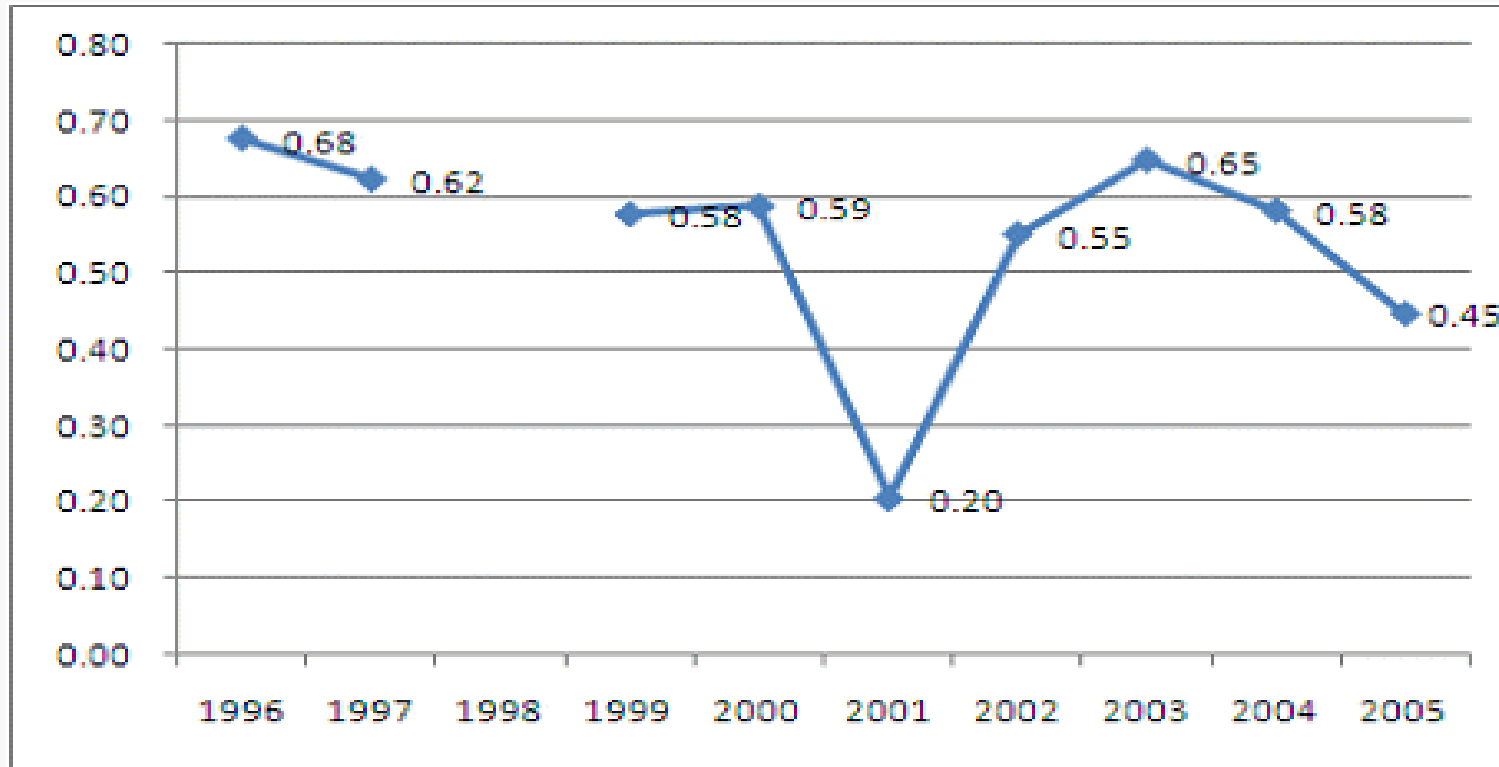
Destinations of Korea's exports of Petroleum Products in NEA



Source: United Nations Commodity Trade Statistics Database



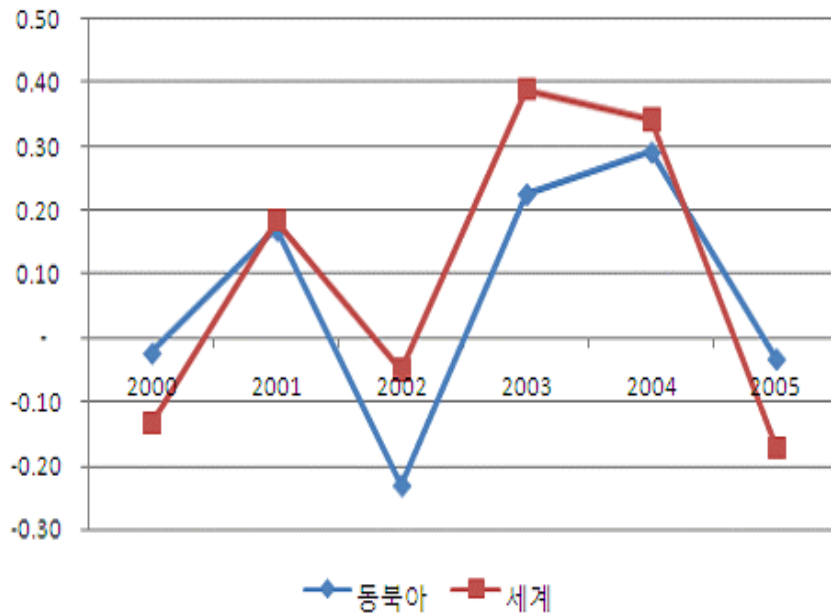
## The Share of NEA Countries in Korea's Exports of Petroleum Products



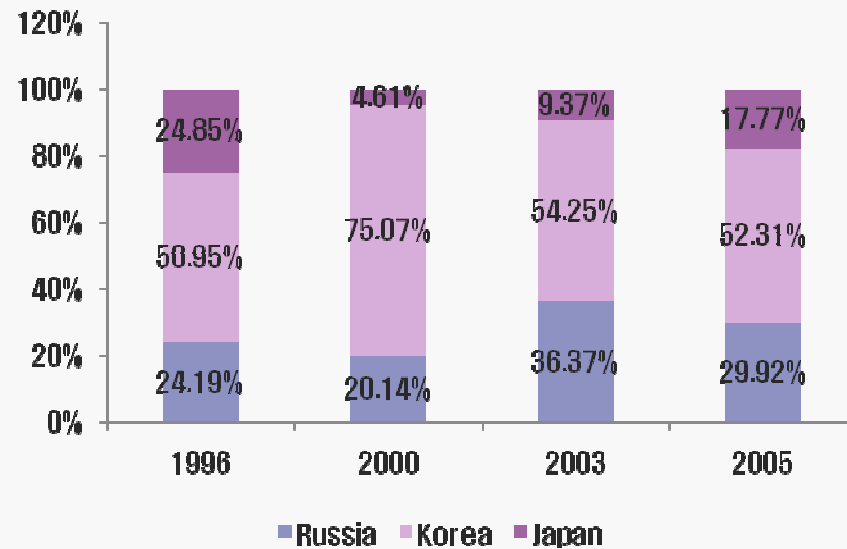
Source: United Nations Commodity Trade Statistics Database

# Korea's Exports of Petroleum Products in NEA (Net Importer)

The Growth Rate of China's imports of Petroleum Products

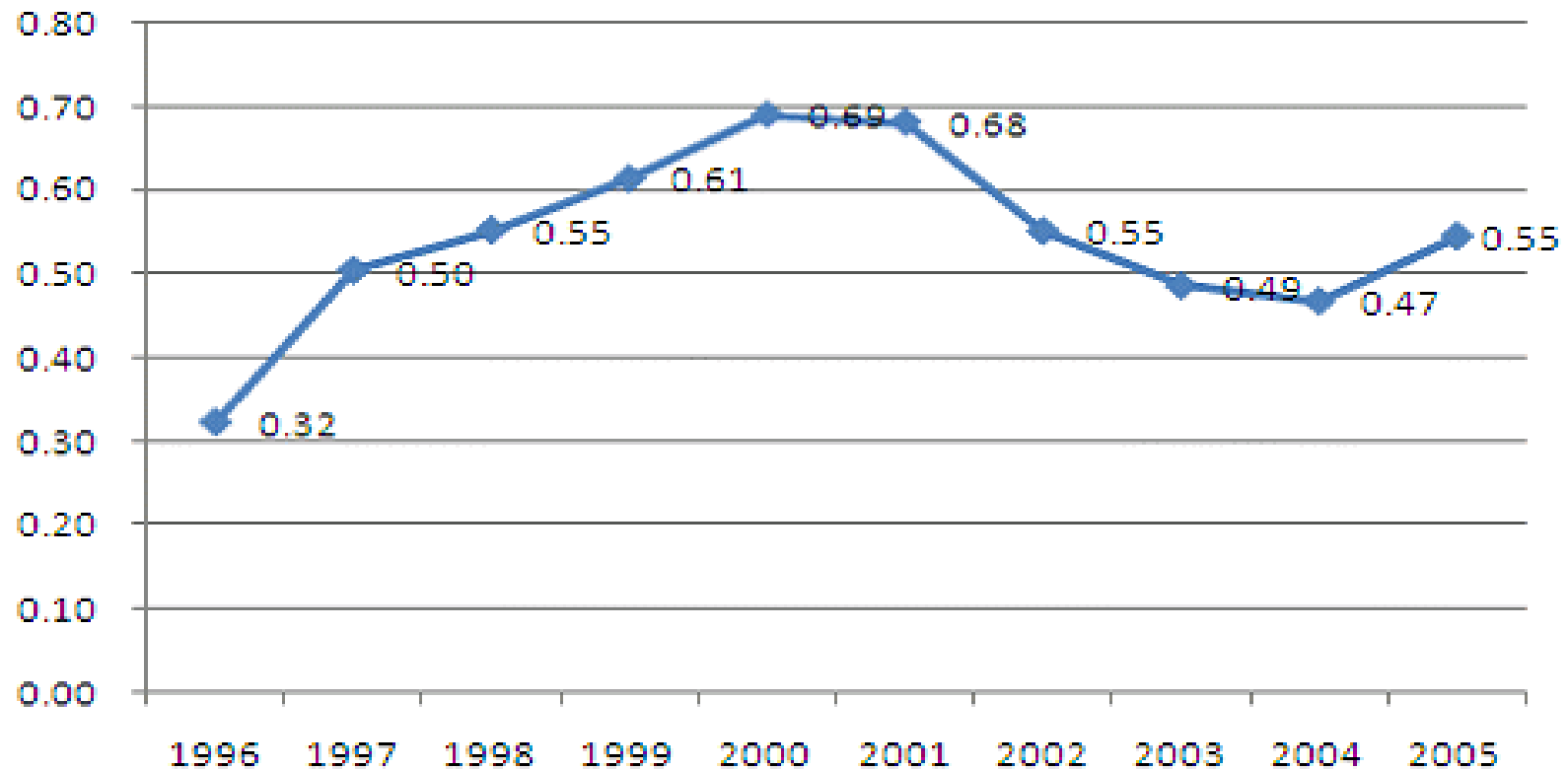


Destinations of China's imports of Petroleum Products in NEA



Source: United Nations Commodity Trade Statistics Database

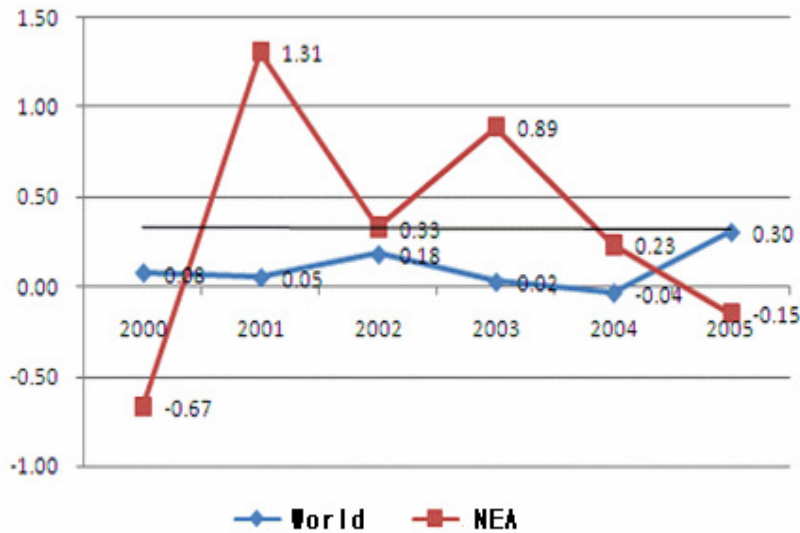
## The Share of NEA countries in China's Exports of Petroleum Products



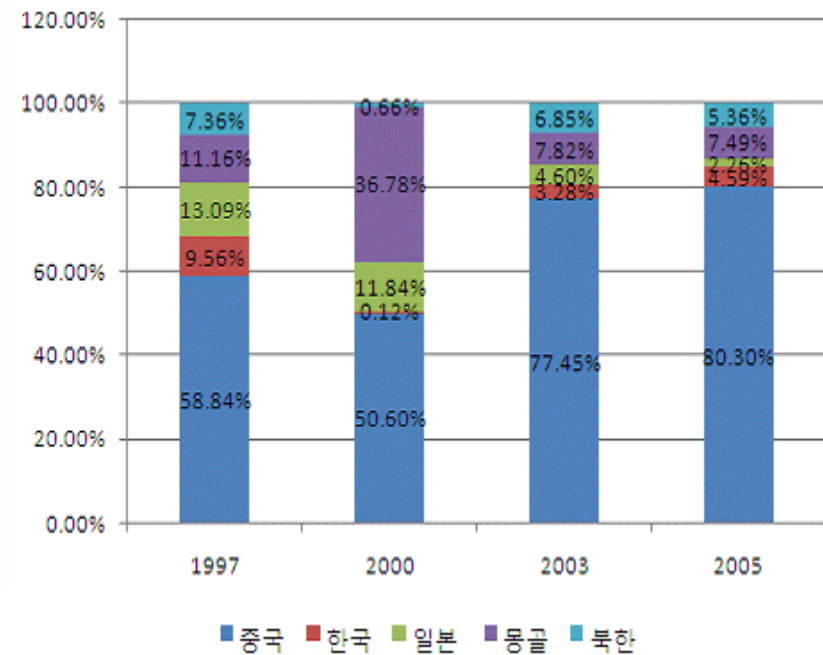
Source: United Nations Commodity Trade Statistics Database

# Russia's Exports of Petroleum Products in NEA (Net Exporter)

The Growth Rate of Russia's Exports of Petroleum Products

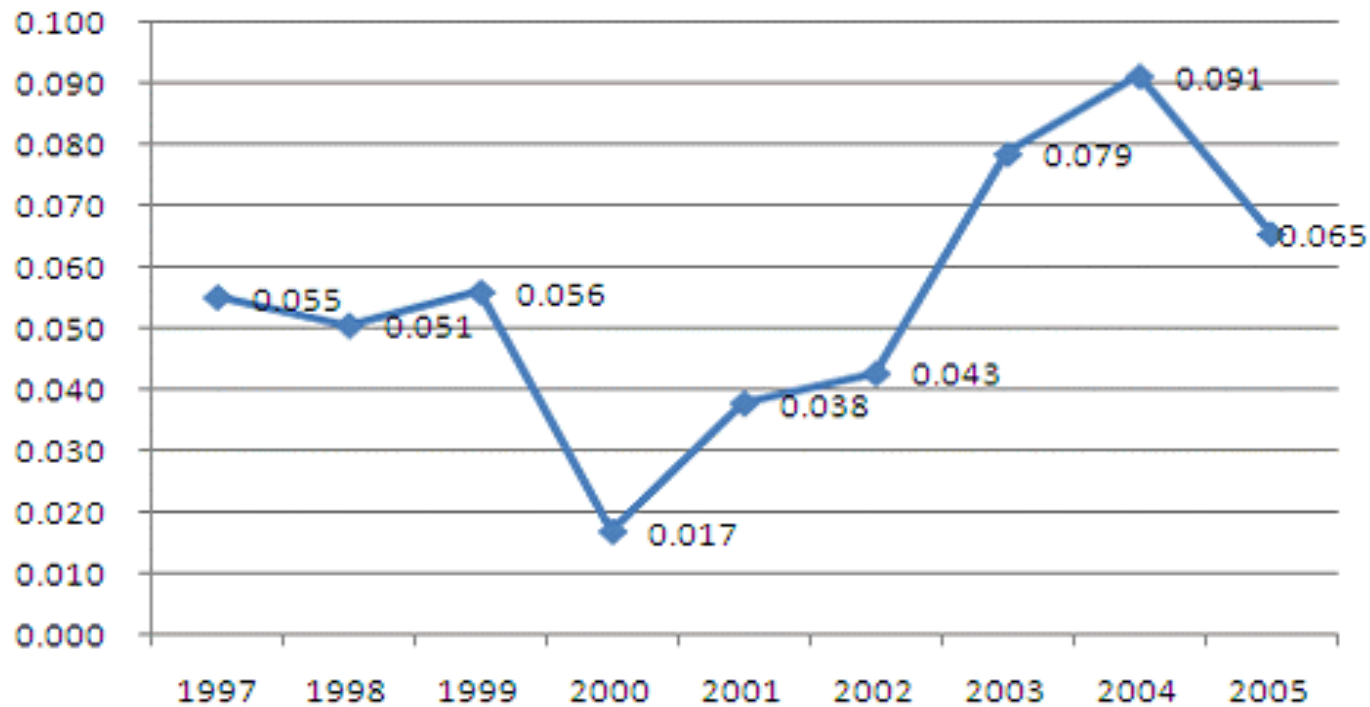


Regional Structure of Russia's Exports Of Petroleum Product in 2005



Source: United Nations Commodity Trade Statistics Database

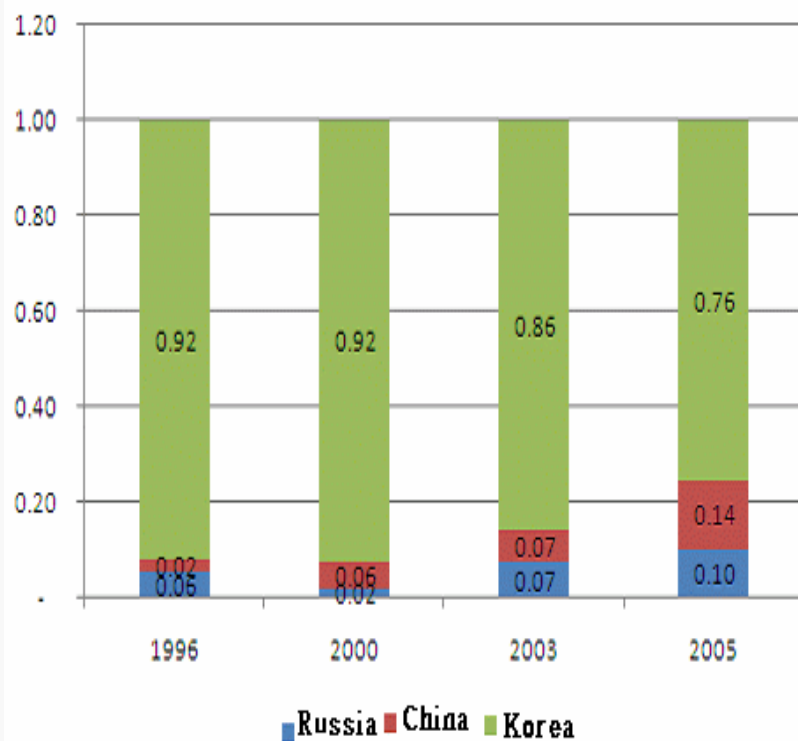
## The Share of NEA countries in Russia's Exports of Petroleum Products



Source: United Nations Commodity Trade Statistics Database

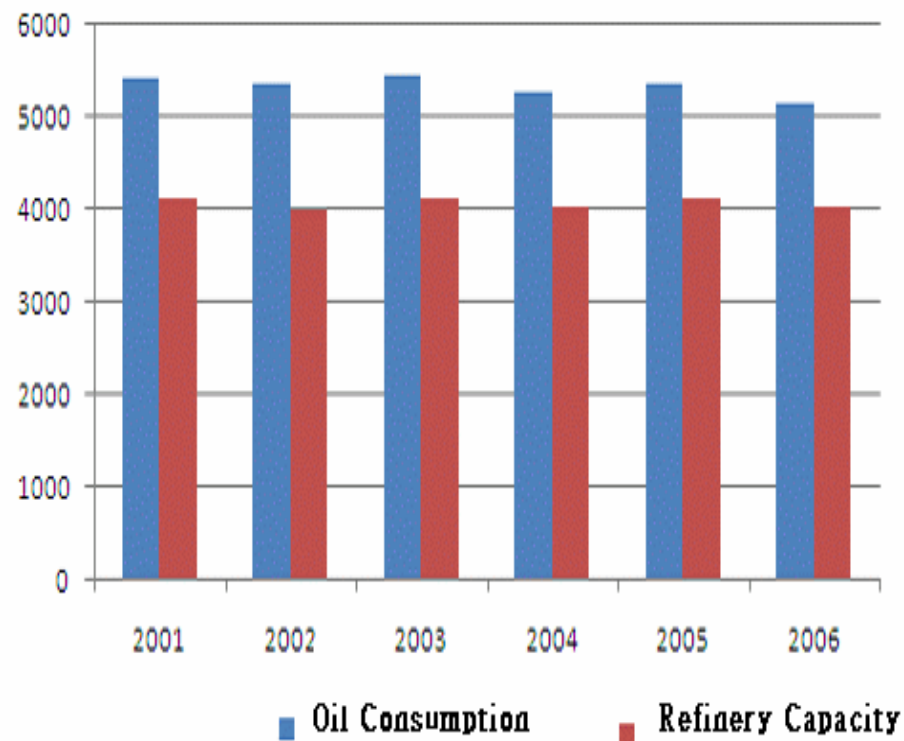
# Japan's Imports of Petroleum Products in NEA (Net Importer)

## Regional Structure of Russia's Exports Of Petroleum Product in NEA



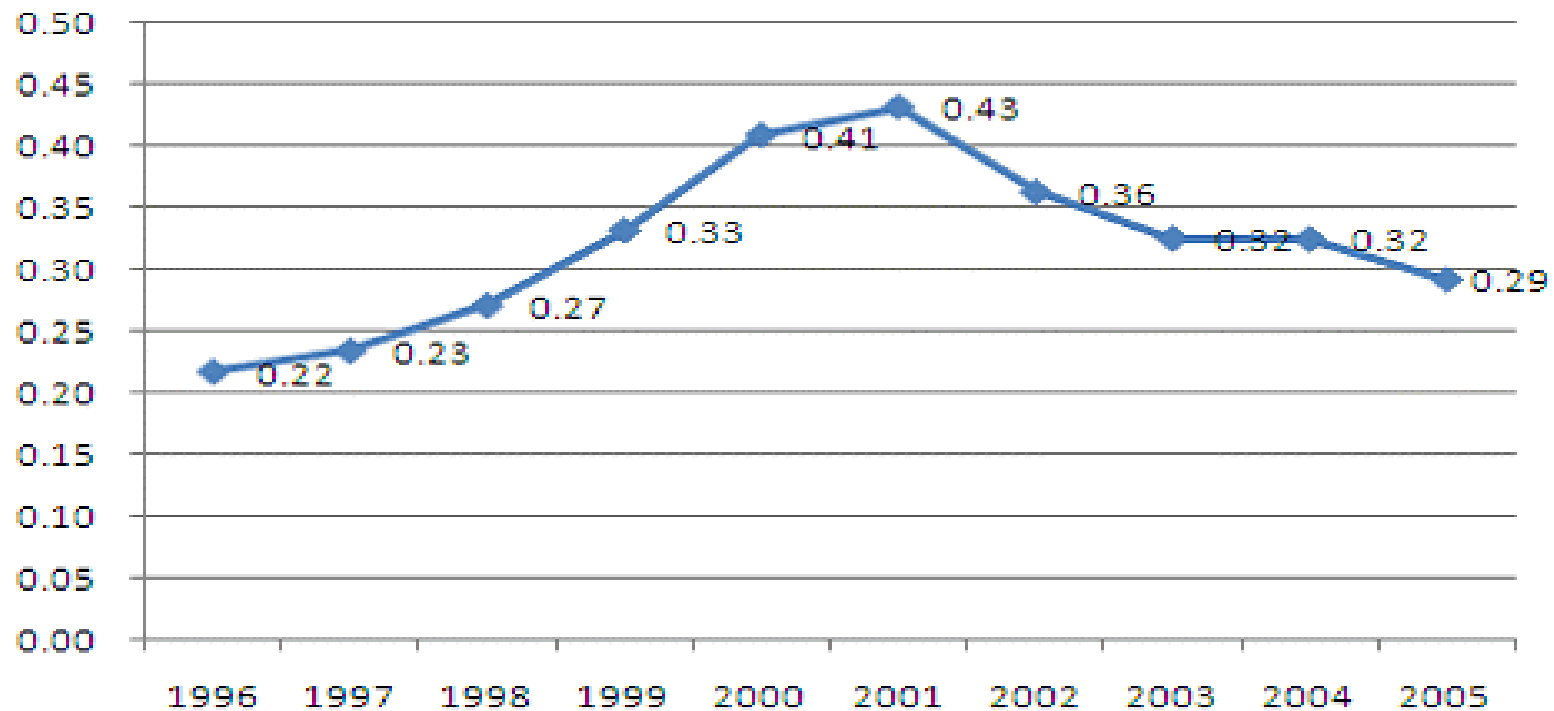
## Oil Consumption VS Refinery Capacity

Unit: Thousand bpd



Source: United Nations Commodity Trade Statistics Database

## The Share of NEA countries in Japan's Exports of Petroleum Products



Source: United Nations Commodity Trade Statistics Database

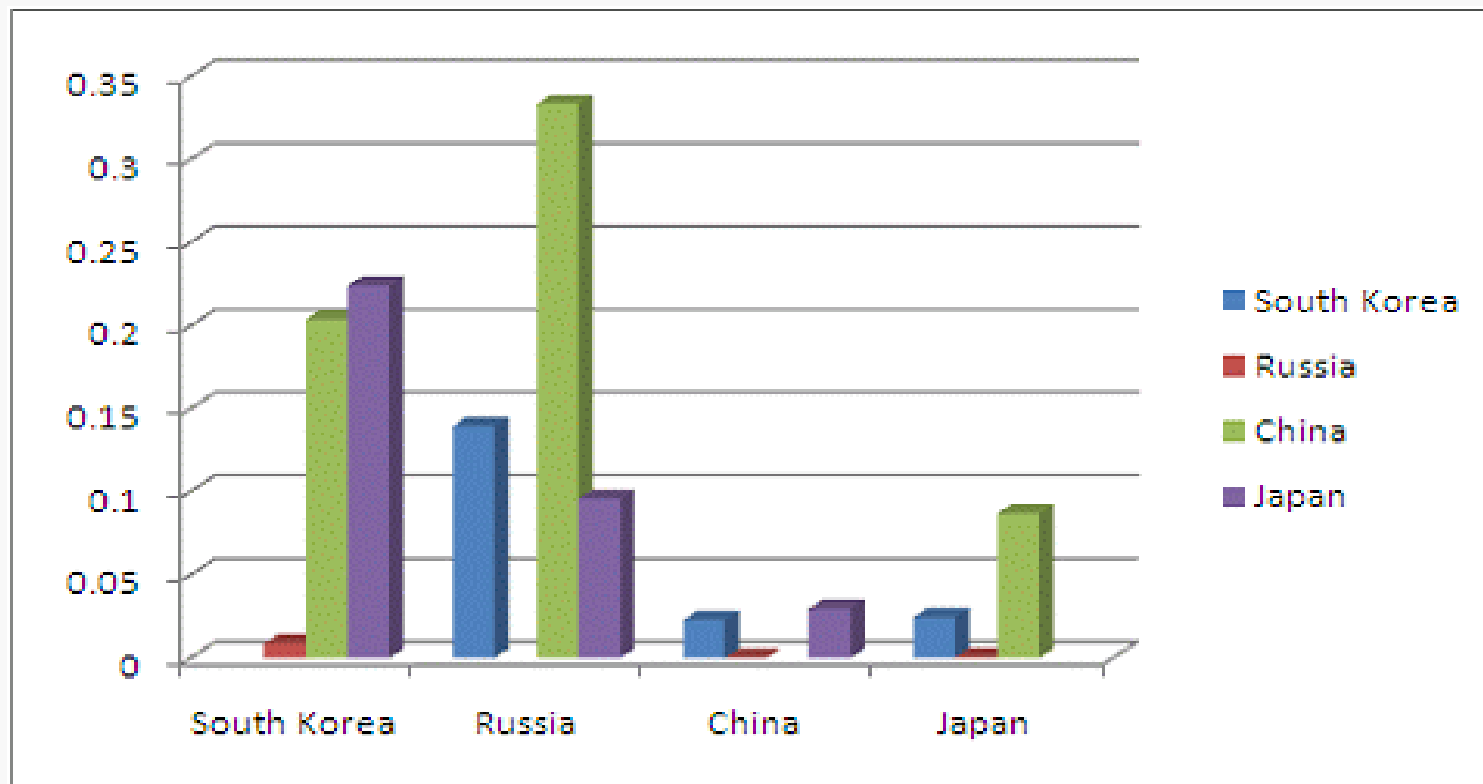


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## Size- and Distance-Adjusted Bilateral Exports in Northeast Asia



## Size- and Distance- adjusted Bilateral Exports in NEA (2005)



$$\text{EX) Exports}_{Korea, China} / (\text{Production}_{Korea} \times \text{Consumption}_{China} / \text{Distance}_{Korea, China})$$



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## Prospects for Petroleum Product exports in NEA

# Prospects for China's Demand of Petroleum Products

## Outlook for Refinery Capacity in China

Unit: Thousand bpd

Refinery Capacity			Change	
2003	2010	2015	'03~'10`	'10~'15
5,619	8,446	10,158	2,827	1,712

## Trend of Petroleum Demand in China

Unit: Thousand bpd

Demand			Change		AAGR (%)	
2003	2010	2015	'03~'10`	'10~'15	'03~'10`	'10~'15
5,304	7,723	9,555	2,419	1,832	5.5	3.3

## Prospects for China's Net Exports of Petroleum Products

- China's demand for petroleum products continues to increase due to its rapid economic growth.
- The share of domestic petroleum supply in China is expected to increase due to its large-scale refinery expansion.
- The main items in China's imports of petroleum products are fuel oil, LPG, and asphalt. In the future, China's gasoline imports are expected to increase due to the rapid growth of the automobile demand.
  - the annual growth rate of its automobile demand is approximately 20%
  - 32 million cars (2005) → 230 million cars(2030)



- The increase in the demand for petroleum products in China is projected to exceed the expansion of refining facilities. Therefore, China is expected to maintain its position as a net exporter at least until 2015

## Prospects for Production of Petroleum Products in Russia

Unit: Million Ton

	1990	1995	2000	2005		2010		2015		2020	
				(l)	(li)	(l)	(li)	(l)	(li)	(l)	(li)
				Total	298	182	174	195	190	200	190
Gasoline·Light Oil	130	90	83	100	95	111	101	125	110	136	117
Heavy Oil	97	62	51	52	51	45	45	37	36	30	29
Refinery Utilization Rate(%)	65	63	71		72		75		80		84

Source: 「Energy Strategy of Russia until 2020」

Note: (i) represents the optimistic case while (ii) represents the case having the highest probability.

# Prospects for Russia's Exports of Crude Oil and Petroleum Products toward the Asia-Pacific

Unit: Million ton

Production Place	2010	2015	2020	2025	2030
<b>Crude Oil</b>					
West Siberia	20	30	35	35	30
East Siberia & Republic of Sakha	6	20	75	75	75
Sakhalin	18	20	25	27	35
Total	44	70	135	137	140
<b>Exports to China</b>	32	50	81	85	90
<b>Petroleum Products</b>					
Total	9	10.2	11.5	11.8	12
<b>Exports to China</b>	8.5	9.7	11	11.3	11.5

Source: SibAcademInnovation(Sibai.ru)

## Prospects for Russia's Net Exports of Petroleum Products

- Russian refining facilities are badly deteriorated due to the lack of investment. Therefore, heavy oil is being overproduced. Heavy oil overproduced in Russia is exported to CIS and Europe at a low price.
- As the demand of high quality light oil increases due to Russia's fast economic growth, Russian oil companies started to expand their investment in that area.
  - The large portion of Russia's petroleum production will be supplied domestically since the demand of overall petroleum products in Russia is expected to increase quickly.
  - While heavy oil production will decline, gasoline and light oil production is expected to increase.



- Russia's current volume of net exports of petroleum products is forecasted to decline. However, Russia's exports of petroleum products to the Asia Pacific region is expected to grow.

# Prospects for Japan's demand of Petroleum Products

## Outlook for Refinery Capacity in Japan

Unit: Thousand bpd

Refinery Capacity			Change	
2003	2010	2015	'03~'10`	'10~'15
4,703	4672	4672	-31	0

## Trend of Petroleum Demand in Japan

Unit: Thousand bpd

Demand			Change		AAGR (%)	
2003	2010	2015	'03~'10`	'10~'15	'03~'10`	'10~'15
5,389	5,136	5,097	-253	-39	-0.7	-0.2



# Prospects for Japan's Net Exports of Petroleum Products

- Japanese government plans to:

- (1) decrease the share of oil consumption in its primary energy from 50% now to 40% until 2030,
- (2) decrease the share of oil consumption in the transportation sector from 100% in 2006 to 80% until 2030.
- (3) Increase the share of nuclear energy in the power generation sector up to the level of 80% until 2030.

- An increment in the total number of cars in Japan is forecasted to increase by only 3million cars.



- In result, Japan's net imports of petroleum products is expected not to increase significantly.

## Future Direction of Korea's exports of Petroleum Products NEA

Country	Net exports of petroleum products	Prospects for the petroleum product trade until 2015
Japan	Negative	Decline (Import volume)
<b>China</b>	<b>Negative</b>	<b>Increase (Import volume)</b>
Russia	Positive	Decline (Export volume)

- **Korea has to focus on Chinese petroleum product market.**  
- China's imports of gasoline, kerosene, and jet oil are expected to increase.
- **Korea's exports of petroleum products are too much focused on Asian market.**  
It has to make an effort to diversify the exporting regions .

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*Thank you for your attention!*