Russia's Energy Policy in the Far East and East Siberia

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Introduction

- *Eastward shift* in Russian oil and gas developments
  - Exploitation of oil and gas fields replacing those in West Siberia
  - Diversification of Russia's oil and gas exports (increase in exports to the East Asian market)
  - Economic growth in the Far East and East Siberia.
- This article examines:
  - Concrete policies that have been taken to achieve these aims;
  - Results of these policies so far;
  - Problems expected in the future implementation of these policies.

Structure of the paper

- Aims of the eastward shift
- Major policies
- Results of these policies
- Future perspectives

Table 1. Oil Production in East Siberia and Far East

In million tons

	1970	1980	1985	1990	1995	2000	2005	2006	2007	2008	2009	2010	2013～2015	2020～2022	2030
	in million tons														
Russia, total	284.8	546.7	542.3	516.2	306.8	323.5	470.2	480.5	490.9	488.0	494.3	504.9	486～495	505～525	530～535
Tyumen' *Oblast*	28.5	307.9	361.1	365.3	201.6	213.5	320.2	325.5	323.8	319.0	311.0	307.0	282～297	275～300	291～292
East Siberia	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.6	5.2	16.1	21～33	41～52	65～69
Krasnoiarsk *krai*	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	3.6	12.9	…	…	…
Irkutsk *Oblast*	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.5	1.6	3.2	…	…	…
Far East	2.5	2.5	2.6	2.0	1.9	3.8	4.4	6.6	15.2	13.6	17.4	18.3	23～25	30～31	32～33
Sakha Republic	0.0	0.0	0.0	0.1	0.2	0.4	0.4	0.4	0.4	0.8	2.0	3.5	…	…	…
Sakhalin *Oblast*	2.5	2.5	2.6	1.9	1.7	3.4	4.0	6.2	14.8	12.9	15.4	14.8	…	…	…
Other regions	253.8	236.3	178.6	148.8	103.2	106.2	145.3	148.2	151.5	154.8	160.7	163.5	140～160	142～159	141～142
	in percent of total														
Russia, total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100	100	100
Tyumen' *Oblast*	10.0	56.3	66.6	70.8	65.7	66.0	68.1	67.7	66.0	65.4	62.9	60.8	58～60	54～57	55
East Siberia	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	1.1	3.2	4～7	8～10	12～13
Krasnoiarsk *krai*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	2.6	…	…	…
Irkutsk *Oblast*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.6	…	…	…
Far East	0.9	0.5	0.5	0.4	0.6	1.2	0.9	1.4	3.1	2.8	3.5	3.6	5	6	6
Sakha Republic	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.4	0.7	…	…	…
Sakhalin *Oblast*	0.9	0.5	0.5	0.4	0.6	1.0	0.9	1.3	3.0	2.6	3.1	2.9	…	…	…
Other regions	89.1	43.2	32.9	28.8	33.6	32.8	30.9	30.8	30.9	31.7	32.5	32.4	28～32	27～31	26～27

Table 2. Gas Production in East Siberia and Far East

In billion cubic meters

	1970	1980	1985	1990	1995	2000	2005	2006	2007	2008	2009	2013～2015	2020～2022	2030
	in billion cubic meters													
Russia, total	83.3	254.0	462.0	640.6	595.5	583.9	640.8	656.3	653.0	666.0	584.0	685～745	803～837	885～940
Tyumen' *Oblast*	9.5	160.0	380.7	574.2	544.6	530.4	585.3	600.9	590.4	601.0	514.0	580～592	584～586	608～637
East Siberia	0.2	0.0	0.1	0.0	0.0	0.4	0.8	1.1	1.3	1.5	2.4	9～13	26～55	45～65
Krasnoiarsk *krai*	0.2	0.0	0.1	0.0	0.0	0.4	0.8	1.0	1.2	1.4	2.1	…	…	…
Irkutsk *Oblast*	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.4	…	…	…
Far East	1.2	1.6	1.8	3.2	3.3	3.6	3.5	3.9	8.4	9.8	19.5	34～40	65～67	85～87
Sakha Republic	0.2	0.7	1.0	1.4	1.7	1.6	1.6	1.6	1.6	1.8	2.0	…	…	…
Sakhalin *Oblast*	1.0	0.8	0.8	1.8	1.6	1.9	2.0	2.2	6.8	7.9	17.5	31～36	36～37	50～51
Other regions	72.4	92.4	79.4	63.2	47.5	49.6	51.1	50.5	52.8	53.7	48.1	62～100	128～129	147～151
	in percent of total													
Russia, total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100	100	100
Tyumen' *Oblast*	11.4	63.0	82.4	89.6	91.5	90.8	91.3	91.6	90.4	90.2	88.0	79～85	70～73	68～69
East Siberia	0.2	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.4	1～2	3～7	5～7
Krasnoiarsk *krai*	0.2	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.4	…	…	…
Irkutsk *Oblast*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	…	…	…
Far East	1.5	0.6	0.4	0.5	0.6	0.6	0.6	0.6	1.3	1.5	3.3	5	8	9～10
Sakha Republic	0.2	0.3	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.3	0.3	…	…	…
Sakhalin *Oblast*	1.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	1.0	1.2	3.0	5	4	5～6
Other regions	86.9	36.4	17.2	9.9	8.0	8.5	8.0	7.7	8.1	8.1	8.2	9～13	15～16	16～17

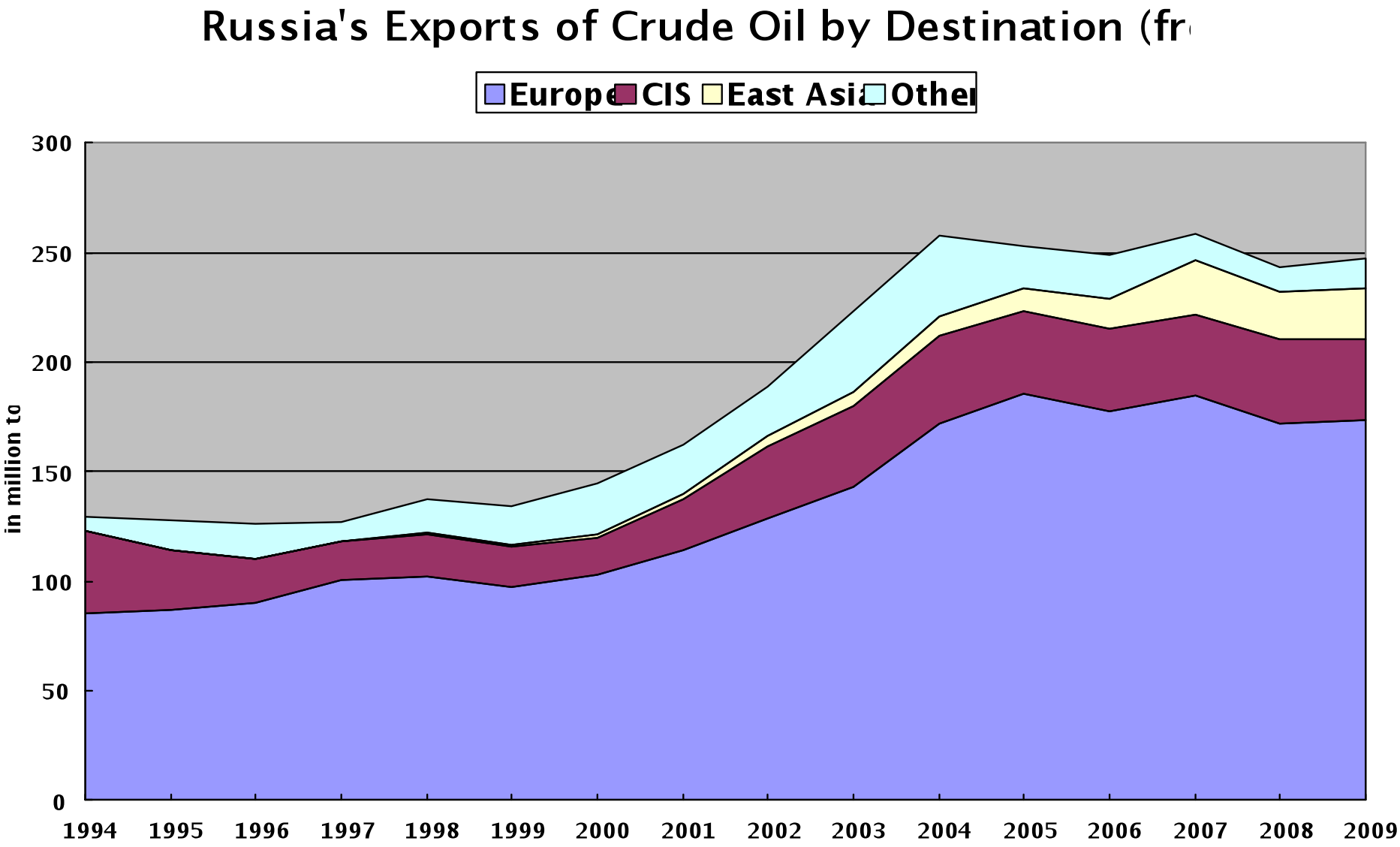

Russia's Exports of Crude Oil by Destination (fr
Europe
CIS
East Asia
Other
in million to
300
250
200
150
100
50
0
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009

Table 4. Crude Oil Ranking in the

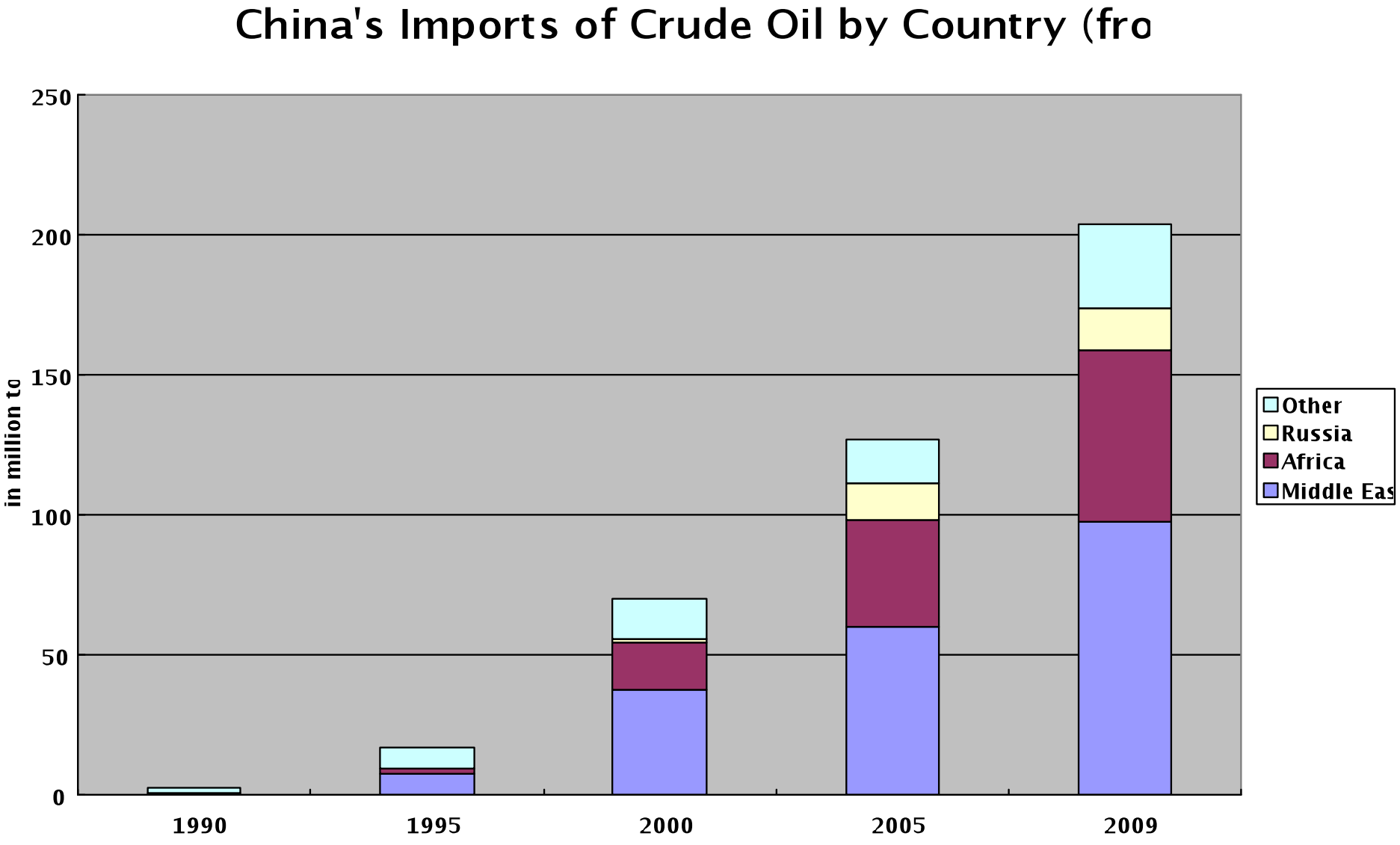
(in million tons)

	2000	2008	Increase	Contribution to increase (%
Consumption, world total	3,541.5	3,968.3	426.8	100.0
USA	888.4	883.9	-4.5	-1.1
China	213.3	362.5	149.2	35.0
Japan	256.8	211.5	-45.3	-10.6
India	108.9	145.6	36.7	8.6
Russia	125.3	136.9	11.6	2.7
Germany	129.7	121.1	-8.6	-2.0
Other	1,819.1	2,106.8	287.7	67.4
Imports, world total	2,031.3	2,293.4	262.1	100.0
USA	511.4	570.7	59.3	22.6
Japan	217.8	199.0	-18.8	-7.2
China	70.3	178.9	108.6	41.4
India	74.1	128.2	54.1	20.6
South Korea	123.3	116.5	-6.8	-2.6
Germany	103.7	105.4	1.7	0.7
Other	930.7	994.6	64.0	24.4

Table 5. Natural Gas Ranking in th

(in billion cubic meters)

	2000	2009	Increase	Contribution to increase (%
Consumption, world total	2,524.8	3,087.5	562.7	100.0
USA	661.3	646.6	-14.7	-2.6
Russia	391.2	429.5	38.3	6.8
Iran	61.7	140.0	78.3	13.9
Japan	80.2	100.1	19.9	3.5
China	27.4	94.9	67.5	12.0
Canada	90.3	92.7	2.4	0.4
Germany	87.7	92.6	4.9	0.9
Italy	70.7	78.1	7.4	1.3
Other	1,054.3	1,413.0	358.7	63.7
Imports, world total	642.1	900.6	258.5	100.0
USA	107.1	106.1	-0.9	-0.4
Germany	75.8	94.6	18.8	7.3
Japan	75.8	92.9	17.1	6.6
Italy	57.4	69.3	11.8	4.6
France	41.0	47.1	6.1	2.4
Other	284.9	490.6	205.6	79.6

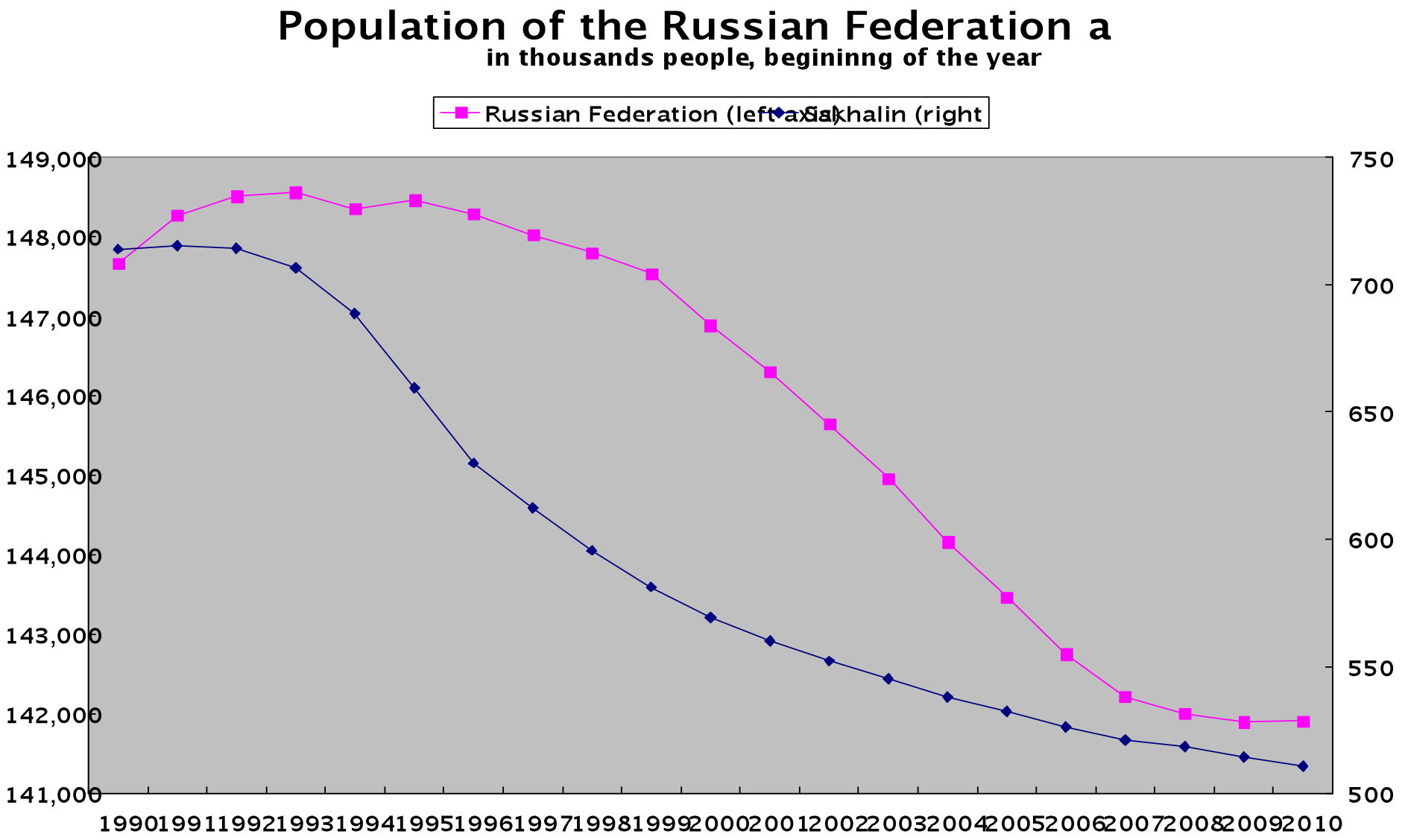

China's Imports of Crude Oil by Country (fro
250
200
150
100
50
0
in million to
1990
1995
2000
2005
2009
Other
Russia
Africa
Middle Eas

Diversification of Russia's oil and gas exports

- China
  - Increase in demand for oil and gas
  - Dependence on the Middle East and Africa: 80%
- Japan
  - Dependence on the Middle East: 90%
- South Korea
  - Dependence on the Middle East: 85%
- Energy Strategy until 2030
  - Combine exploration of oil and gas fields in the eastern regions with their exports to the East Asian market.
  - Share of eastward exports to crude and petroleum products: increase from 8% to 22-25%
  - Share of gas exports to Asia-Pacific Ocean countries: increase from zero to 19-21%

Economic growth in the Far East and East Siberia

- Fundamental change in strategy of regional development after the collapse of the USSR
- In the Soviet era
  - Development of these regions was financed by subsidies from the center because of its military importance and its potential for energy production.
- After 1991
  - In addition to political and economic turmoil in the country, due to the growing economic efficiency consideration in public finance and to the relative decrease in the military significance of these regions, subsidies were substantially reduced and their economic development was left to these regions.


Population of the Russian Federation a
in thousands people, begininng of the year
Russian Federation (left axis)
Sakhalin (right
149,000
148,000
147,000
146,000
145,000
144,000
143,000
142,000
141,000
750
700
650
600
550
500
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010

Economic growth in the Far East and East Siberia

- Specific Federal Program “Economic and Social Development of the Far East and Zabaikal until 2013”
  - By Government Resolution No. 801 of November 21, 2007
- Eastern Gas Program
  - Program of Creating a Single System of Gas Extraction, Transportation and Supply in East Siberia and the Far East, Taking into Account Possible Gas Exports to China and Other Countries of the Asia-Pacific Region
  - By Order of the Ministry of Industry and Energy No. 340 of September 3, 2007

Introduction

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- This article examines:
  - Concrete policies that have been taken to achieve these aims;
  - Results of these policies so far;
  - Problems expected in the future implementation of these policies.

Major policies

- Oil and gas development in Sakhalin
- Construction of the East Siberia-Pacific Ocean (ESPO) pipeline
- Exploitation of oil fields in East Siberia

Oil and gas development in Sakhalin

- Specific feature
  - Foreign countries or companies are permitted to participate in its development by the Soviet and Russian governments.
    - Concession given to Japan in the 1920s and 1930s
    - Joint exploration works with Japan in the 1970s
    - Production sharing agreement (PSA)

PSA

- Sakhalin-2 in June 1994
  - Sakhalin Energy Investment Company: joint company with Royal Dutch Shell, Mitsui and Mitsubishi
  - no Russian companies at the outset
- Sakhalin-1 in June 1995
  - Exxon, SODECO (Sakhalin Oil and Gas Company, a consortium of Japanese companies), ONGC (Oil and Natural Gas Corporation Limited, an Indian national oil company) and Rosneft
- PSA legislation in Russia in December 1995
- Amendments in 1999 and 2003
- Gazprom's participation in Sakahlin-2 in 2006

Map 1. Crude Oil Pipelines in the Eastern Regions of Russia

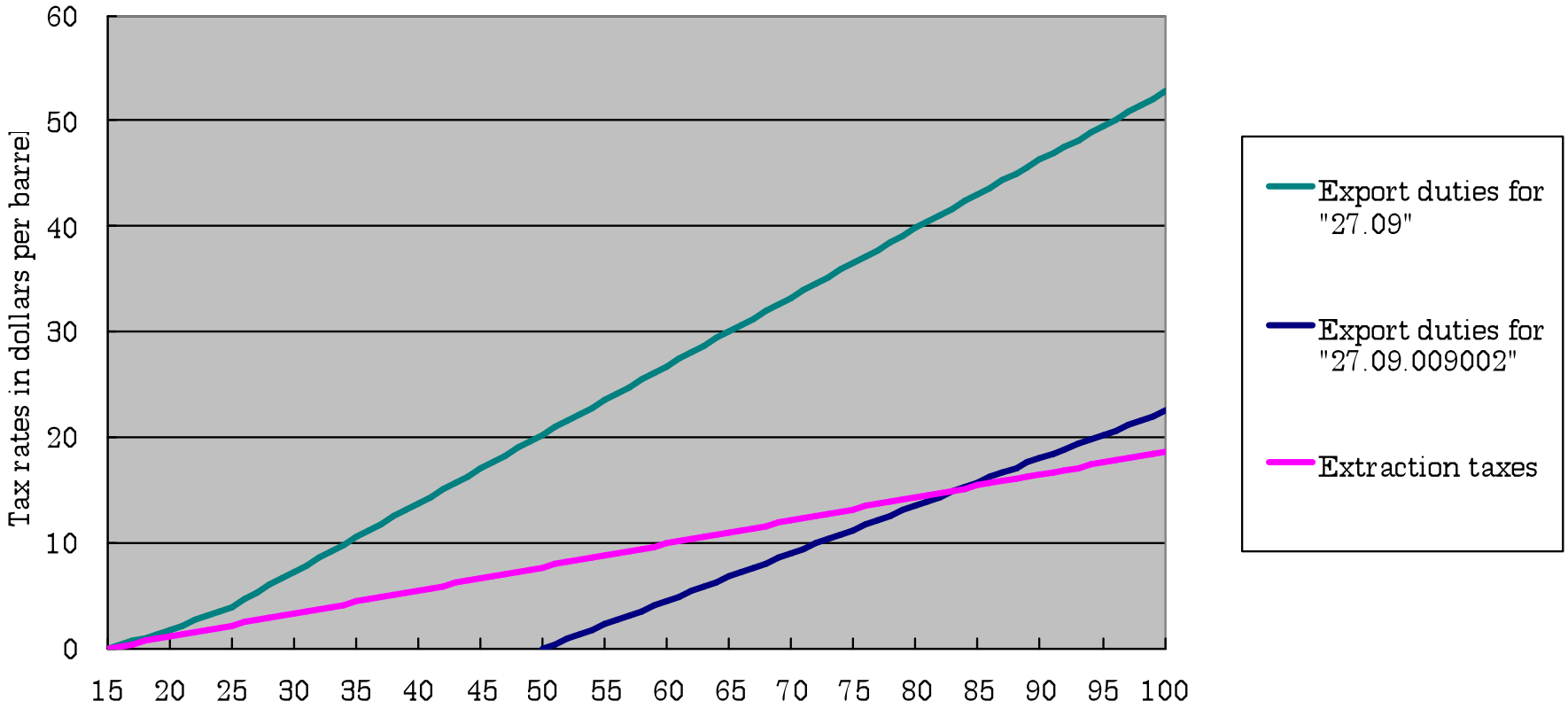
ESPO pipeline

- Political decision to construct ESPO
  - a chicken-or-egg question
    - In the case of the ESPO pipeline, although no big oil fields have been discovered yet in East Siberia, the oil supply from West Siberia is regarded as a substitute.
  - Eastward exports from Siberian oil fields
- Economic decision of the pipeline route
  - To avoid hold-up problems or a monopoly of demand
    - Two destinations: to Daqing and to Pacific countries
- Ecological consideration of the concrete route
  - Great attention to environmental aspects

Exploitation of oil fields in East Siberia

- Exemptions or reduction of extraction taxes and export duties on oil produced in these regions
- Extraction taxes
  - $T = (P - 15) \times 0.22$
  - Exemptions: from the beginning of 2007.
  - Applied to oil fields in Sakha, Irkutsk or Krasnoyarsk that produced less than 25 million tons of oil since the start of their exploitation.
- Export duties
  - $T = 4 + (P - 25) \times 0.65$
  - Exemptions: from December 2009
  - Applied to 13 oil fields in these regions and added another 9 fields in January 2010.
  - Replaced by tax reductions from July 2010.
    - $T = (P - 50) \times 0.45$

Fig. 1. Tax Rates on Crude Oil



Sources: Compiled by the author from federal laws and other sources cited the text.

Oil and Gas Production in Sakhalin Oblast (1

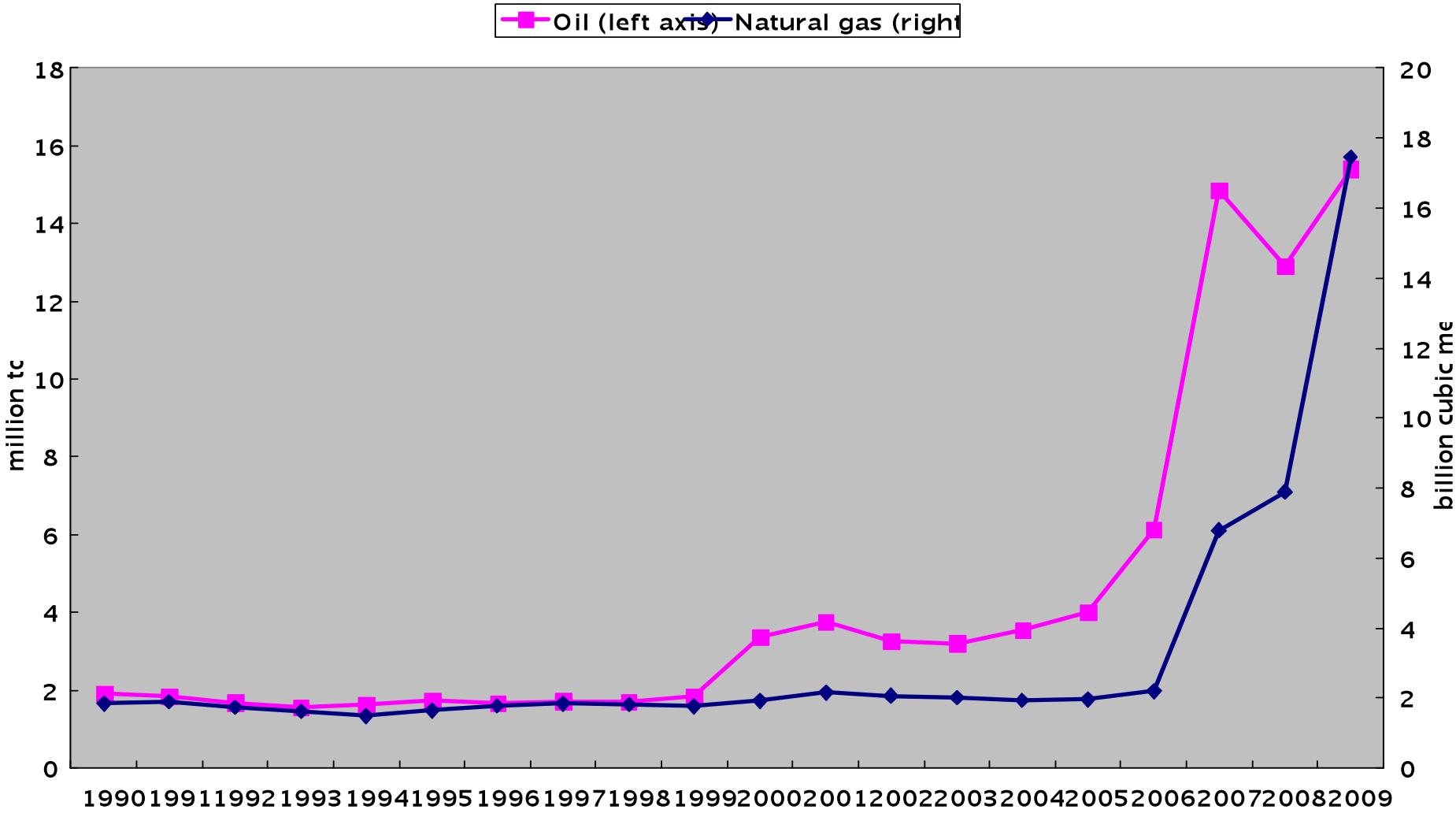


Table 1. Oil Production in East Siberia and Far East

In million tons

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Irkutsk *Oblast*	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.5	1.6	3.2	…	…	…
Far East	2.5	2.5	2.6	2.0	1.9	3.8	4.4	6.6	15.2	13.6	17.4	18.3	23～25	30～31	32～33
Sakha Republic	0.0	0.0	0.0	0.1	0.2	0.4	0.4	0.4	0.4	0.8	2.0	3.5	…	…	…
Sakhalin *Oblast*	2.5	2.5	2.6	1.9	1.7	3.4	4.0	6.2	14.8	12.9	15.4	14.8	…	…	…
Other regions	253.8	236.3	178.6	148.8	103.2	106.2	145.3	148.2	151.5	154.8	160.7	163.5	140～160	142～159	141～142
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Tyumen' *Oblast*	10.0	56.3	66.6	70.8	65.7	66.0	68.1	67.7	66.0	65.4	62.9	60.8	58～60	54～57	55
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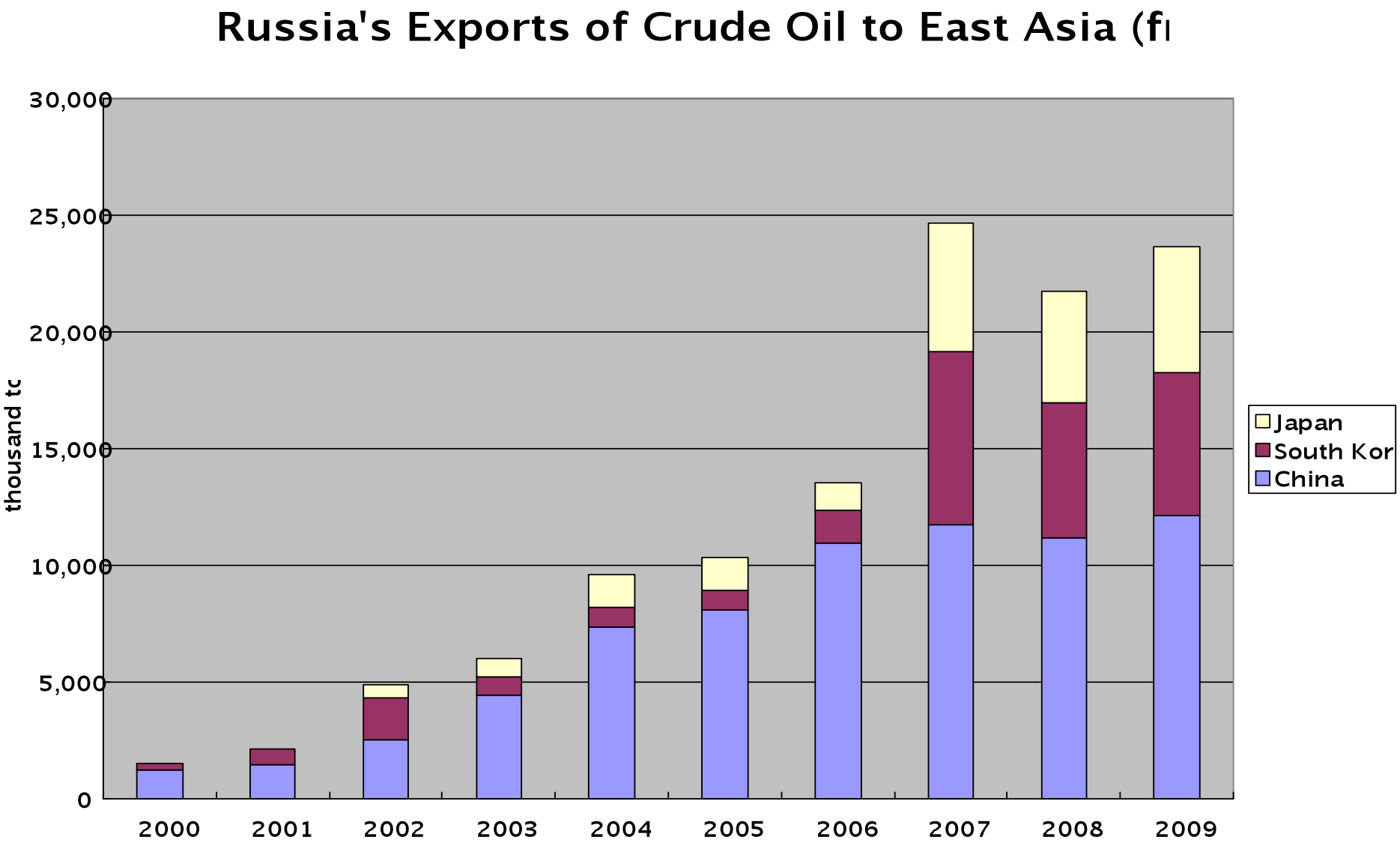
Irkutsk *Oblast*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.6	…	…	…
Far East	0.9	0.5	0.5	0.4	0.6	1.2	0.9	1.4	3.1	2.8	3.5	3.6	5	6	6
Sakha Republic	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.4	0.7	…	…	…
Sakhalin *Oblast*	0.9	0.5	0.5	0.4	0.6	1.0	0.9	1.3	3.0	2.6	3.1	2.9	…	…	…
Other regions	89.1	43.2	32.9	28.8	33.6	32.8	30.9	30.8	30.9	31.7	32.5	32.4	28～32	27～31	26～27


Russia's Exports of Crude Oil to East Asia (fi
30,000
25,000
20,000
15,000
10,000
5,000
0
thousand tc
2000
2001
2002
2003
2004
2005
2006
2007
2008
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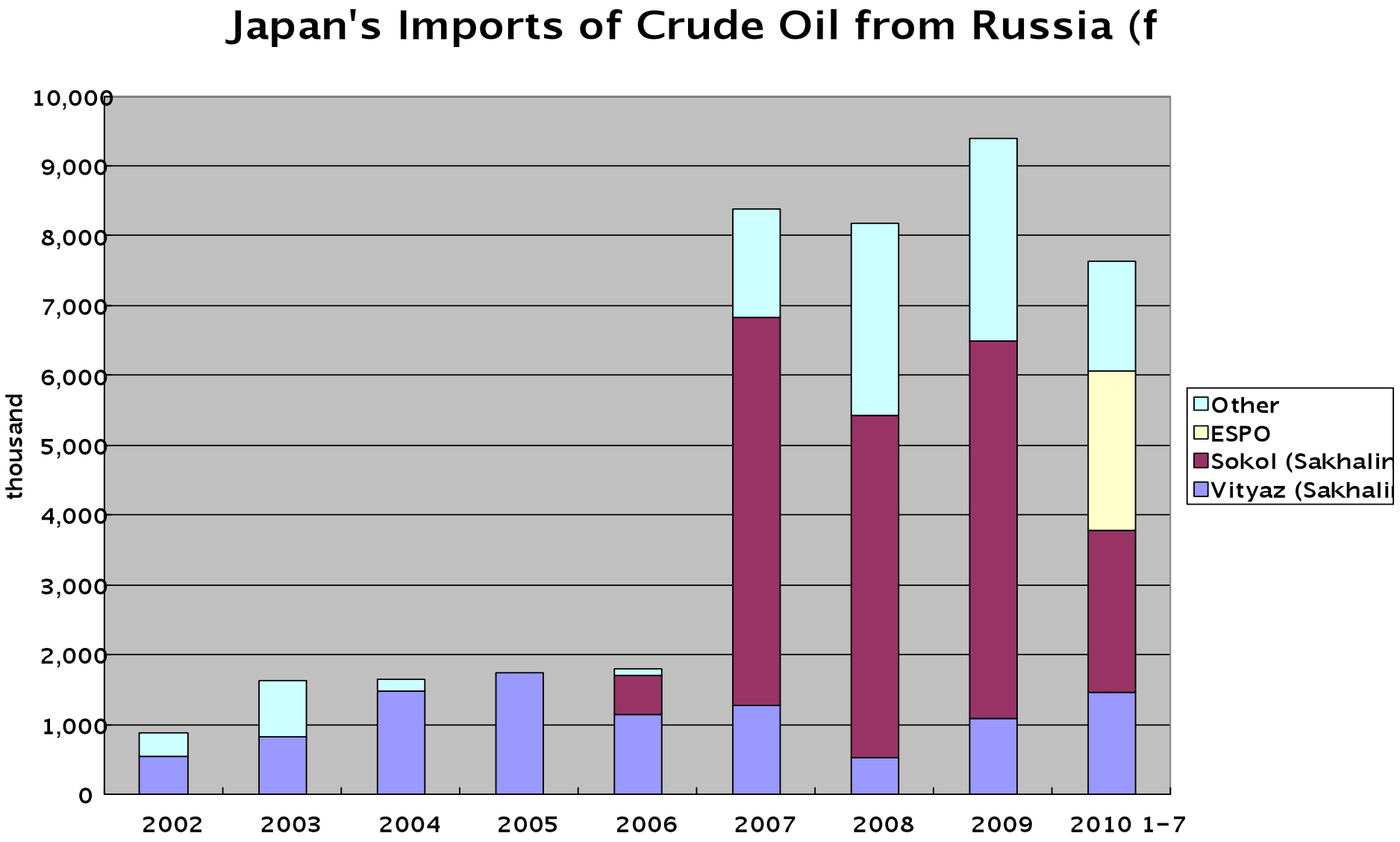
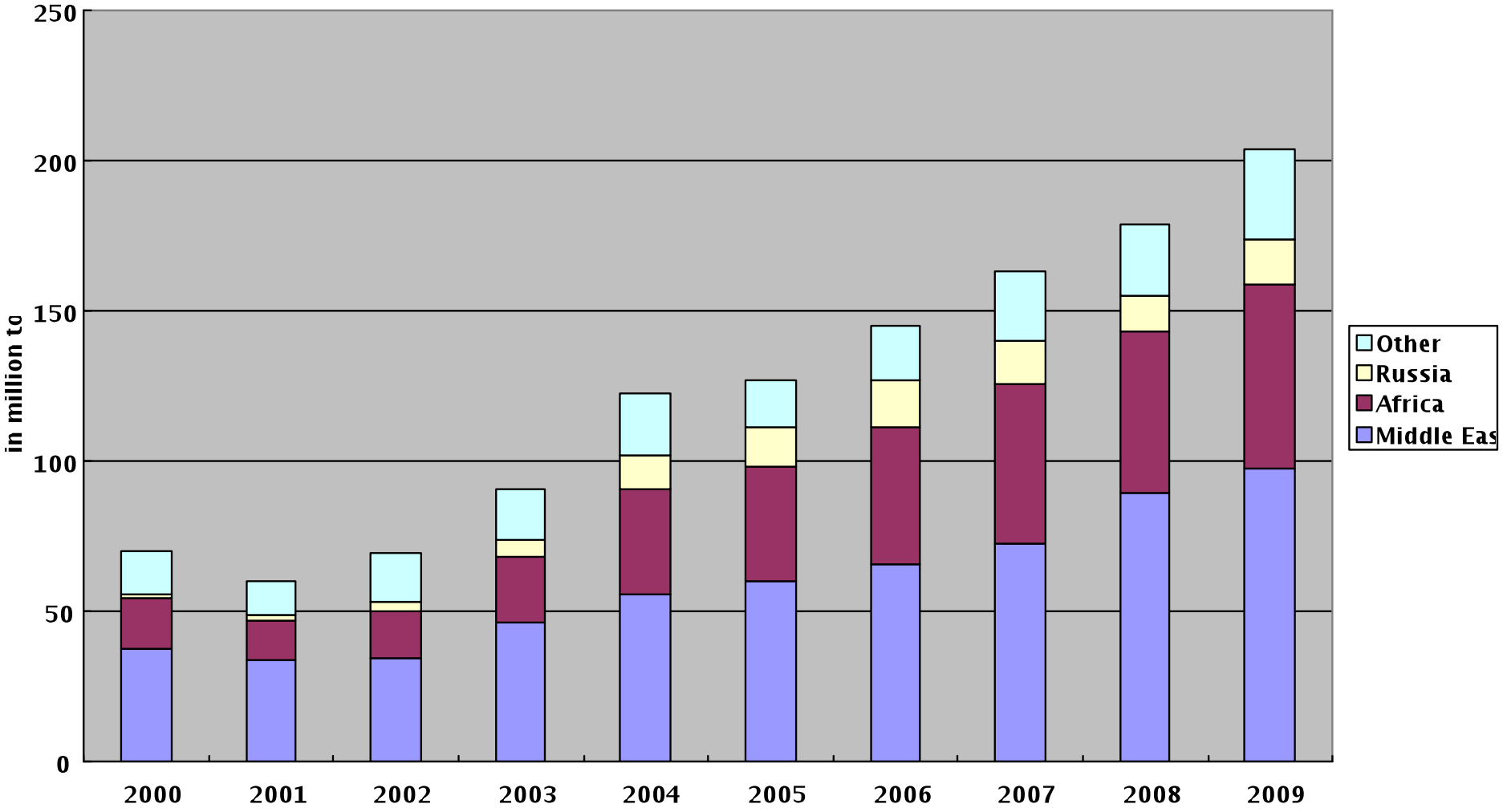
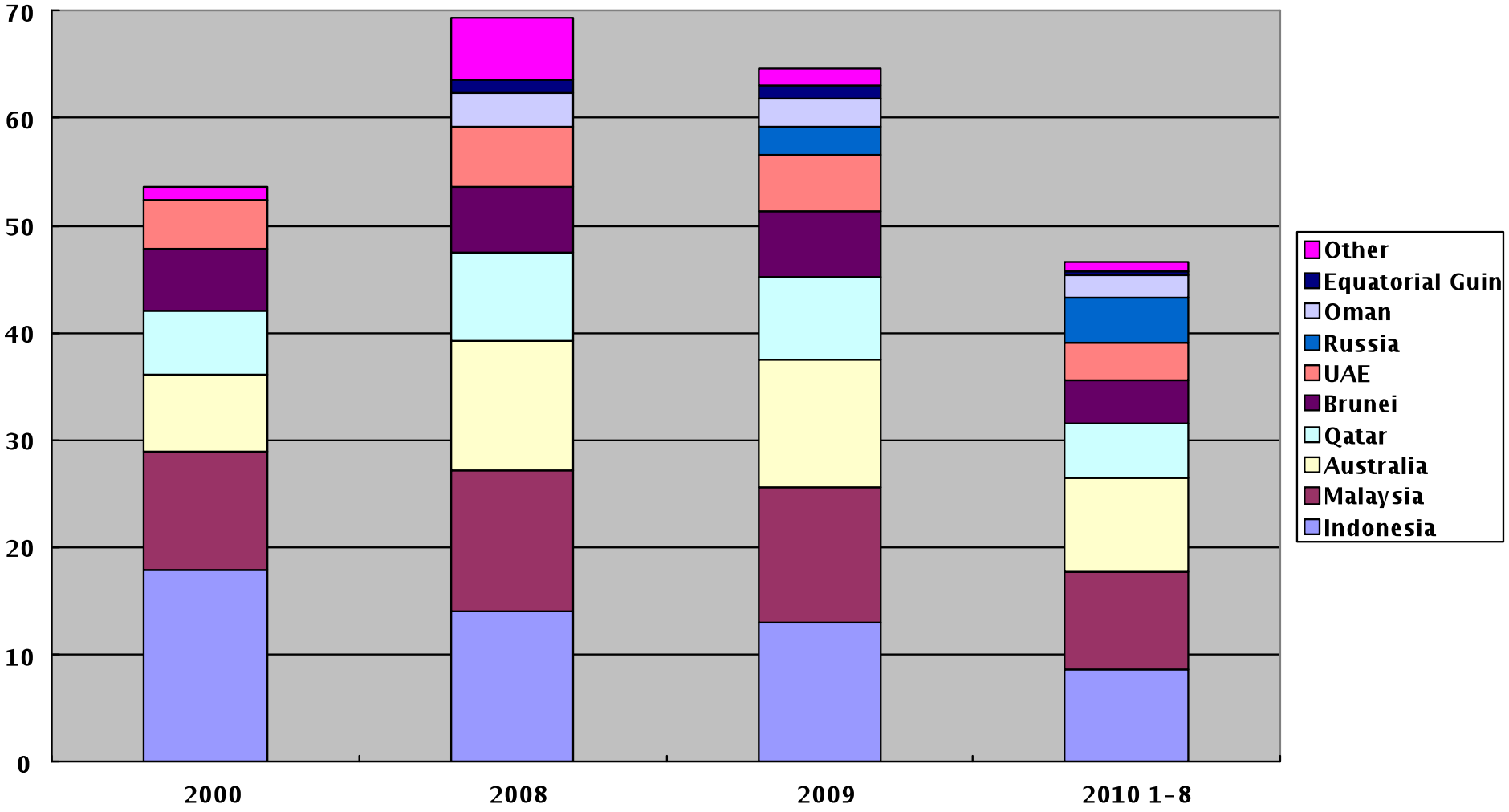
Japan
South Kor
China


Japan's Imports of Crude Oil from Russia (f
thousand
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
2002
2003
2004
2005
2006
2007
2008
2009
2010 1-7
Other
ESPO
Sokol (Sakhalir
Vityaz (Sakhali

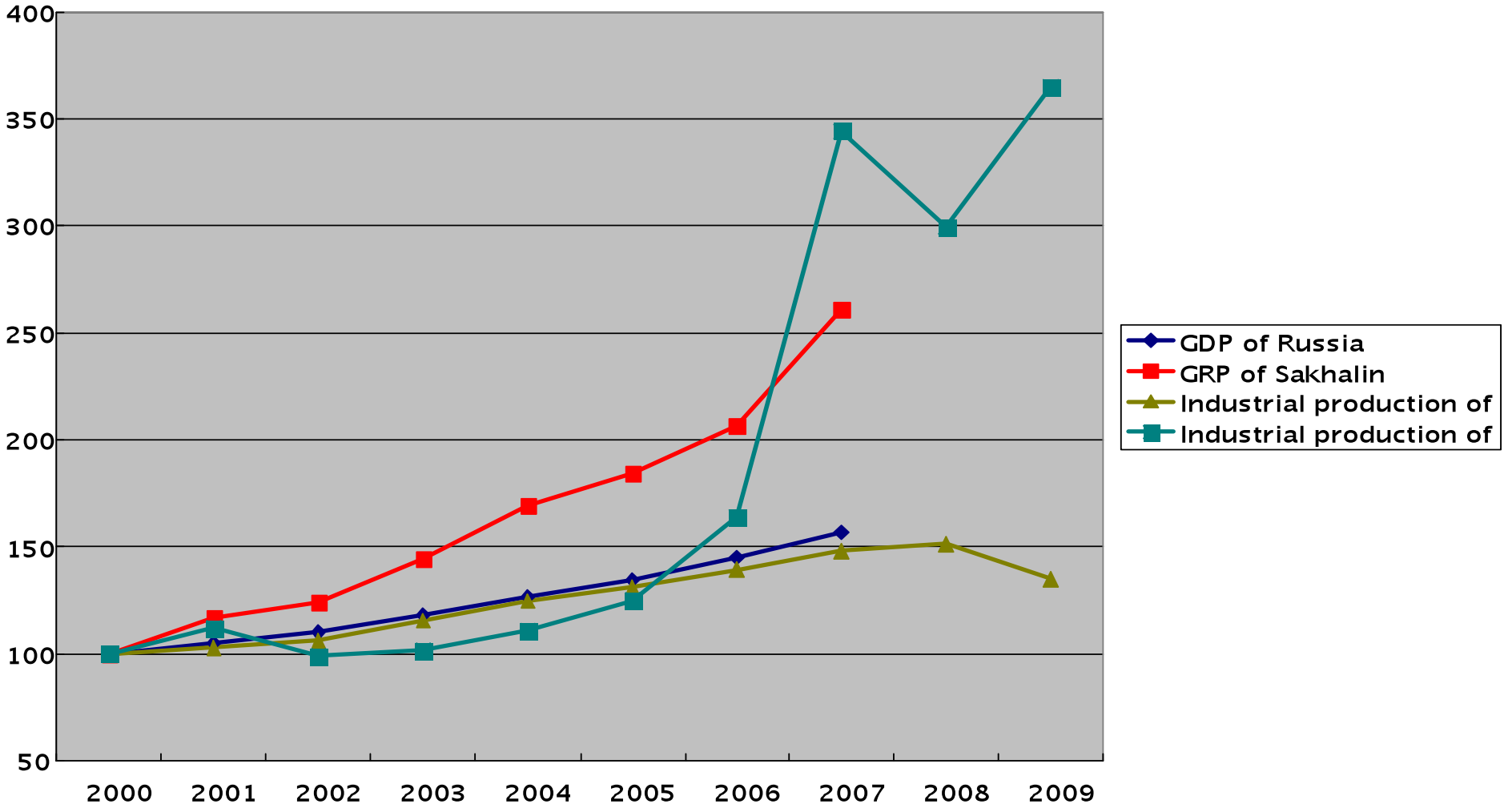
China's Imports of Crude Oil (from

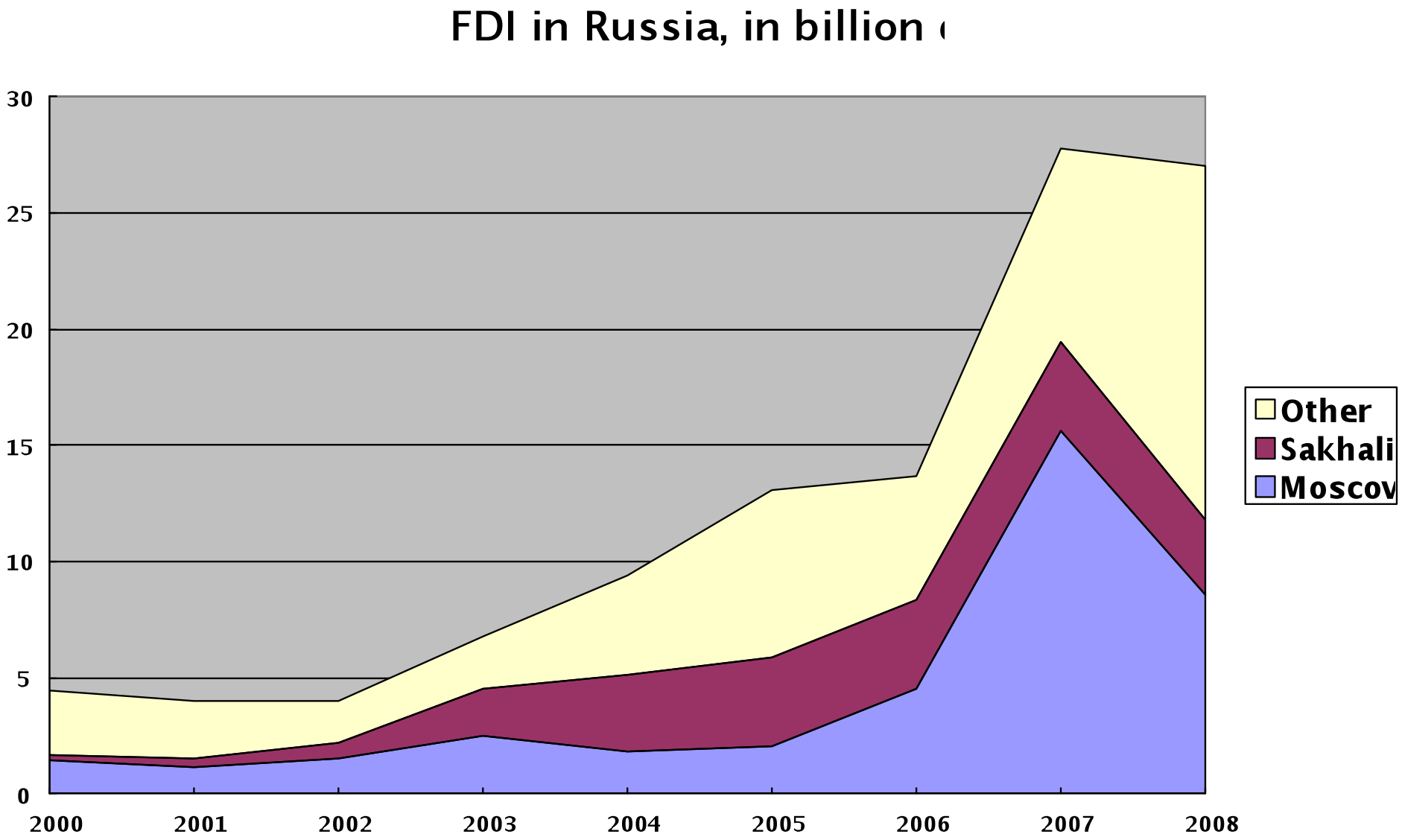


Japan's Imports of LNG by Country, in million tons (fr



Economic Growth of Sakhalin, 2000=100 (fi




FDI in Russia, in billion
30
25
20
15
10
5
0
2000
2001
2002
2003
2004
2005
2006
2007
2008
Other
Sakhali
Moscov

Future perspective

- Development in Sakhalin is on track
- Development of oil and gas fields in East Siberia
  - Heavy tax burden
  - High transportation fees
  - Shortage of natural gas demand

Heavy tax burden

- General argument: oil price increases enable oil companies to develop new fields in remote areas with harsh geological and climatic conditions.
- Russian case: because 87 percent of oil price increases are transferred to the state budget, such incentives are weak.
- In East Siberia
  - Exemption of oil export duties was replaced by its reduction in July 2010.
  - Exemption of oil extraction taxes has been applied to other regions since January 2009.
- Fundamental question: whether you should maintain stabilization-like funds for a rainy day or you should give priority to develop new oil fields.
  - Russian stabilization-like funds play an important role in keeping inflation rates low by sterilizing increased MS resulting from strong interventions in forex markets by the CBR.
  - Strong interventions in forex markets were necessitated by the growing influx of oil dollars.

Table 14. Oil Pipeline Tariff of Transneft, per 100 tkm

	2006	2007	2008	2,009	201
Average tariff in Dec.	16.73	18.04	23.85	29.31	33.9
Increase rate (%)	9.9	7.8	32.2	22.9	15.9
Basic tariff	from Jan. 1	from Jan. 1	from Jan. 1	from Jan. 1	from Jan.
	8.6228	9.6778	12.8927	17.8338	22.324
	from Oct. 1		from Aug. 1	from July 1	from Aug
	8.9691		15.4103	19.1795	23.505
					from Dec.
					25.383
Increase rate (%)	5.6	7.9	59.2	24.5	32.3
Increase rate in produ prices in industry (%)	10.4	25.1	-7.0	13.9	...

High transportation fees

- ESPO tariff
  - a network tariff, which is applied regardless of the distance of transportation, has been introduced.
  - It includes the charge for the use of railroad transportation and for service of the transportation terminal and special sea port for oil exports at Kosmino.
  - It was set at 1,598 rubles per ton and increased to 1,651 rubles per ton in August (7.5 dollars per barrel), and to be raised to 1,815 rubles per ton in December 2010.
  - The same level of tariff is to be applied to the transportation of oil through the ESPO pipeline and the pipeline between Skovorodino and the Chinese border for exports to China.

Shortage of gas demand

- Overall decreases in demand for Russia's natural gas
  - Prolonged recession in developed countries
  - Increase in shale gas production in the USA
- Japan has no intention to import gas through pipeline.
- Eastern Gas Program
  - Sakhalin-Khabarovsk-Vladivostok (SKV) pipeline
    - Phase I: 6 bcm
    - Phase II: 30 bcm
  - Yakutia-Khabarovsk-Vladivostok (YKV) pipeline
    - 47.2 bcm together with SKV pipeline
    - Production will be 91-122 bcm by 2020-2022
  - Plans to export gas (50 bcm) to China and South Korea.

Map 2. Natural Gas Pipelines in the Eastern Regions of Russia