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Policy on Oil and Gas

Russia's key dilemma lies in the conflict between its fast economic modernization and its centralized political system. This divergence is particularly evident in the country's dominant economic sector, energy. Russian leaders are calling their country an energy superpower with good reason: It is the biggest producer of primary energy in the world, with one-ninth of world crude output (roughly level with Saudi Arabia) and one-fifth of world natural gas output (in which Russia is the world leader). Russia holds about 27 and 6 percent of the world's known reserves of natural gas and oil, respectively.[1] Russia's reserves are likely to be far larger since exploration has been limited.

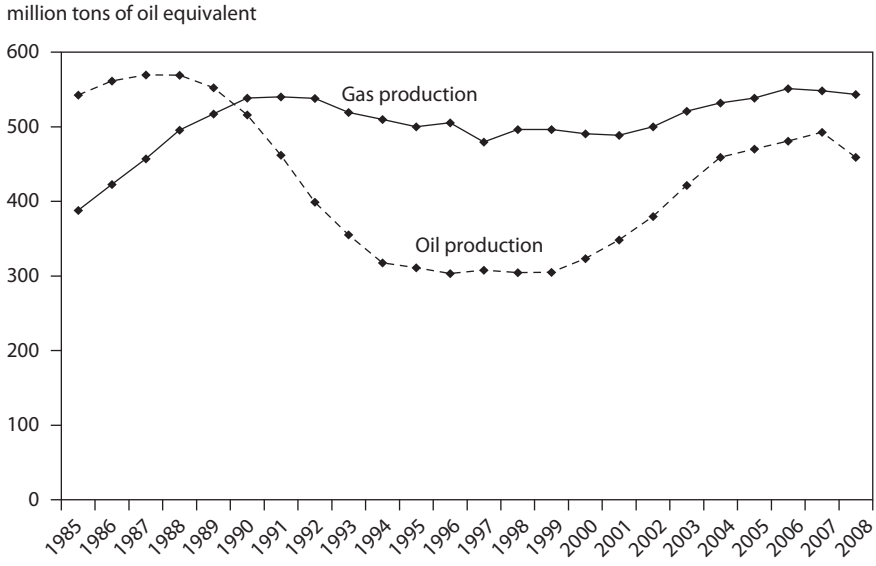
The importance of oil and natural gas to Russia's economy can be measured in three ways. First, according to official statistics, oil and gas account for only 9 percent of Russia's GDP, which is surprisingly little; the explanation is that energy overall and natural gas in particular have much lower prices on the domestic market because of export tariffs and price controls on gas and electricity. At world market prices, oil and gas account for 18 percent of Russia's GDP, which is the relevant statistic. The second measurement is the share of exports; in 2007 oil and gas accounted for 61 percent of Russia's exports. The third measure is the contribution of oil and gas to total federal revenues, which is about 50 percent.

Production of Oil and Natural Gas

Russia's oil production has been on a wild ride in the last two decades. From 1999 to 2004, it rose by no less than 50 percent (figure 4.1), but in

1. BP, *Statistical Review of World Energy 2008*, www.bp.com (accessed on December 12, 2008).

Figure 4.1 Oil and gas production, 1985–2008



Source: BP, *Statistical Review of World Energy 2008*; Deutsche Bank; Russian Federal State Statistics Service; authors' calculations.

2005–07 the expansion slowed to 2.5 percent a year because of partial renationalization and high taxation, both of which limited exploration and development. Oil production peaked in 2007 at the very high level of 9.9 million barrels a day, almost as high as in the late 1980s, but declined by 0.9 percent in 2008 for the first time since 1998.

Russia's output of natural gas remained fairly constant in the 1990s, partly because the new giant gasfields in Western Siberia came on stream later than the oilfields. In 2000–06, the production of natural gas increased by about 2 percent a year, but only because of the contributions of independent producers. The state-dominated natural gas company Gazprom's aging giant fields were in decline, and Gazprom failed to develop both new and secondary fields. Therefore, Gazprom's output is now stagnating and fell by 0.8 percent in 2007 to 607 billion cubic meters.[2] A 1.4 percent recovery in 2008 was entirely due to independent producers, while Gazprom maintained a stable output of 83 percent of Russia's total output in 2008. At this point, large international investments in new oil and gas fields are needed just to keep up Russia's energy output. Expansion seems beyond reach for years to come.

2. Ibid.

Alternative Approaches to Risk Management

One of Russia's greatest challenges is the management of its oil and natural gas sector. Risk management has always been the key to success in oil and gas, a business inherently fraught with high geologic, technical, financial, and political risks. Balancing the risks and rewards is the true test of business acumen in the petroleum industry and is even more important for state policy. Companies that fail in the marketplace are replaced by smarter and better-performing competitors. The failures of governments have much more serious and enduring consequences.

Russia's former Prime Minister Yegor Gaidar has argued that one of the factors contributing to the collapse of the Soviet Union was an overreliance on the oil and gas sector after world oil price spikes in the 1970s, followed by the collapse of prices in the mid-1980s.[3] In 1988 the Soviet Union was the largest oil producer in the world, with peak production of 12.5 million barrels per day, 11 million of which came from Russia. The problem was that the world oil price dropped from almost $40 per barrel in the early 1980s (after the Iranian revolution and the start of the Iran-Iraq War) to well below $20 per barrel just before the Soviet Union collapsed in 1991. The nadir of $10 per barrel was in the midst of the financial crash of 1998.

This recent history is an object lesson for current Russian leaders about the long-term cyclical nature of the oil industry, which they have overlooked for the last five years. The reason is understandable. From the time Vladimir Putin emerged on the Russian national stage in 1999, the world oil price rose steadily during his first presidential term and then leaped during his second term to an all-time high (in inflation-adjusted terms). In light of this steady climb, Gazprom's CEO Alexei Miller boldly predicted in June 2008 that oil prices would rise to $250 per barrel in 2009. In fact, he almost perfectly called the top of the most recent oil price bubble: The world benchmark crude oil, West Texas Intermediate, reached a peak price of $147.27 per barrel on July 11 before promptly nose-diving. The next price level it tested was a floor of $35, which is where it stands as of this writing in February 2009.

Still the $35 price tag is historically high. If the real (inflation-adjusted) oil price returned to its level of the first half of this decade, it would drop to about $30 per barrel, which would not be an altogether shocking development given the current global financial meltdown, recession, and resulting decline in oil demand. Just as the price overshot on the upside, it is likely to overshoot on the downside as well before it finds a new equilibrium. Yet in September 2008 Minister of Finance Alexei Kudrin stated

3. Yegor T. Gaidar, *The Collapse of the Empire: Lessons for Modern Russia* (Washington: Brookings Institution, 2007).

that the Russian government needed an average price of Russian export blend crude oil of $70 per barrel for its budget to break even. Only in February 2009 did the government announce its intention to revise the 2009 budget to an oil price of $41 per barrel. Gas export prices to Europe follow European oil prices with a lag of 6 to 9 months, so what is true of oil prices is also valid for gas prices with a minor delay.

The Oil Sector: Reinforced State Control rather than Market Reforms

How have the fluctuations in prices informed Russian government policy toward the oil and gas sector? What are the consequences of this policy? And what are the implications for the future, including possible course corrections?

When Putin came to national prominence in 1999, the Russian oil industry had begun recovering as a result of ruble devaluation (which lowered production costs), privatizations that led to efficiency gains, reinvestment by oligarchs with newly acquired property rights, and the introduction of Western technology and management skills. Foreign investment was growing and demonstrating what could be achieved with international industry practices. Production improved rapidly with the use of modern oilfield techniques for brownfield projects in existing production areas. With lower domestic consumption from a slower economy and higher prices, oil exports grew steadily and became an important driver of the Russian economic recovery.

The reform process was incomplete, however. Trunk oil pipelines remain in the hands of the state-owned monopoly Transneft, with antiquated business practices and nontransparent access rules and regulations. For example, because of exchanges based on weight (tons) rather than volume (barrels or liters) and the lack of a crude quality adjustment mechanism, producers do not receive fair market value. This has the perverse effect of providing incentives to producers of low-quality heavy crude oil to increase their production, while producers of the higher-quality light crude oil are disadvantaged and seek less efficient methods of transporting their product. Extended production license periods would encourage larger investments that would take longer to pay back, but extensions are not granted. License renewal and award remain a capricious process subject to political interference and the whims and corrupt demands of bureaucrats.

In 2003 the entire reform process in the oil sector not only stalled but also went into reverse. The signal event was the arrest and imprisonment of Mikhail Khodorkovsky, the Yukos oil company CEO, who was at the forefront of modernizing the Russian petroleum sector under private ownership and the discipline of capital markets, outside of government's

political control. Yukos was forced into bankruptcy and its prized assets acquired by the state-owned and -controlled oil company Rosneft. Other Russian oil oligarchs quickly fell into line to accommodate the Kremlin's new policy of state control and recentralization of decision making for the oil sector.

As world oil prices continued to rise, Russian oil export taxes rose to take as much as 90 percent of the incremental financial benefit for the government treasury, thereby reducing cash flow for Russian oil producers to reinvest in their businesses during a highly favorable market environment. Plans for privately funded major pipeline projects to Murmansk or China ceased. Instead Transneft proceeded to build economically suboptimal oil pipelines to the Baltic and Pacific coasts. Unlike Murmansk, the shallow Baltic ports in the Gulf of Finland cannot accept supertankers and they freeze in the winter.

Russian leaders rediscovered the political benefits of central control of the petroleum industry. The bonanza in oil income allowed them to parcel out wealth, pay social benefits, reward friends, punish enemies, buy electoral victories, and maintain power, all without seeking political legitimacy of the sort required by broad taxation of the public in a diversified economy.

The tradeoff is that centralization shifts the risks inherent in the petroleum business, especially commodity price risks, from a competitive private sector and capital markets to the state. It dries up investment flow, which is the lifeblood of a capital-intensive business like petroleum that requires long lead times. Responsibility for risk taking moves from market players to state bureaucrats, with accompanying loss of effectiveness and efficiency, after the easy improvements, such as enhanced oil recovery, have been made and frontier exploration and development are needed to replace declining oil reserves.

In 2005 the growth rate of oil production slowed considerably, and in 2008 Russian oil production actually declined. Russia joins the ranks of Venezuela and Iran as major oil-producing countries that have pursued policies that discouraged investment in future production capacity at a time of extremely favorable conditions of high prices and market premiums for access to resources. In contrast, Libya and Angola took advantage of the favorable climate by attracting foreign investment and increasing their productive capacity.

Producing-country governments often consider volume growth unnecessary at a time of high prices, but it can be critical when prices soften, particularly if the country is highly dependent on oil income. Again, balancing risks and rewards should be the key consideration. A farsighted host government attracts investment at a time of high prices when it can drive the best economic bargain as owner of the resource. A shortsighted host government appeals for investment after prices drop and bargaining leverage shifts in favor of oil investors. But political perception frequently

lags market reality, and governments act late when it would be more prudent to respond in a countercyclical manner, getting maximum investments when prices are high so as to enjoy volume growth when prices soften, as they inevitably do.

The Gas Sector: A Serious Concern

In many ways the situation in Russia's gas sector, dominated by state-controlled Gazprom, is of more serious concern than oil. Unlike the oil sector, the gas sector never went through a period of reform and privatization. Gazprom is run much like the old Soviet gas ministry, with near monopoly control over the production, transport, distribution, and export of natural gas. Although Russia remains the largest gas producer and exporter in the world, with a quarter of all proven gas reserves, gas never enjoyed the boom in production growth that oil did.

Because of delays in instituting domestic gas pricing reform, fully two-thirds of Russia's massive production goes to domestic consumption, completely out of proportion to the size of the Russian economy and population, even after taking the cold climate into account. The waste is not limited to gas consumption. The Russian government estimates that 20 billion cubic meters of gas are flared every year because Gazprom restricts Russian oil producers on pipeline and market access for their associated gas; the producers, therefore, have little economic incentive to collect and process the gas associated with oil production. Estimates by international agencies such as the World Bank and the International Energy Agency put the actual figure for Russian gas flaring two to three times higher, which would make it equivalent to more than the annual gas consumption of France.

Meanwhile, production from three of Gazprom's four major fields—Medvezhye, Urengoy, and Yamburg—is past its peak and declining rapidly, and the fourth (Zapolyarnoe) is at its peak. In the short run, Gazprom is increasingly reliant on gas supply from Central Asia, particularly Turkmenistan, and is reducing its supply commitment to traditional customers in the former Soviet Union, such as Ukraine, in order to meet its domestic gas balance and contractual commitments to Western Europe. In the longer run, domestic pricing reform and massive investments in difficult greenfield projects are needed to maintain Gazprom's supply as well as its prominent roles both as exporter of gas to Europe and in Russian domestic politics.

In the gas industry, as in oil, Russia no doubt has a huge resource base. But many questions accompany the disposition of this resource. What are the right types of investments and what is the best way to ensure that they are timely and effective? Is continued centralization and government control the best way to achieve the desired results, for example, in the devel-

opment of Eastern Siberia, the Yamal Peninsula, and the Arctic Region? Should the state assume sole risk in frontier projects or share the high risks—and rewards—with the domestic private sector and international capital? Should the government reconsider and resume market reform, perhaps in a more thoughtful and fair way than in the 1990s? Given the importance of the oil and gas sector to the Russian economy, foreign exchange earnings, and government revenue, the stakes are high.

The Changing Role of the Outside World

Even as the production growth rate slowed, the Russian government moved against foreign investors, notably Royal Dutch Shell in the Sakhalin II project, TNK-BP in the Kovykta gasfield, and ExxonMobil in Sakhalin I, in further reassertion of state domination.[4] On April 29, 2008, Russia adopted a new Law on the Procedure for Contributing Foreign Investments in Legal Entities Which Are of Strategic Importance for the Defense of the Country and Security of the State, commonly called the Law on Foreign Investments in Strategic Industries. It restricts foreign company access to large upstream opportunities. This measure is again contrary to the conventional industry wisdom that calls for spreading risks to foreign investors in expensive and challenging projects and for favoring domestic producers in smaller projects that they can easily handle and for which foreign investors are not needed.

Not only foreign companies but also private Russian corporations suffer from discrimination. Gazprom and Rosneft, the two national champions, now have the right of first refusal in new offshore exploration blocks. Gazprom has selected Norwegian StatoilHydro and French Total as partners for the development of the gigantic and difficult Shtokman offshore gasfield on the Barents Sea north of Murmansk. But with no license rights, it is unclear how StatoilHydro and Total will be able to book any gas reserve or what rights they can claim. The fate of that project is hard to discern at this point.

Russia's external energy relations present a more complicated picture. In an oil market dominated by the Organization of Petroleum-Exporting Countries (OPEC), Russia is a price taker, not a price setter, because it has neither the long reserve life nor the production flexibility of Saudi Arabia. However, it continues to exhibit tendencies of wanting to extend power beyond its borders by using oil and gas as foreign policy tools. The January 2006 gas cutoff to Ukraine after the Orange Revolution, disrupting gas supply to eight Western European countries in one of the coldest winters

4. Royal Dutch Shell and its Japanese partners were forced to give up a majority to Gazprom in the Sakhalin II oil and gas venture, and BP was compelled to give up the Kovykta gasfield in East Siberia to Gazprom.

in memory, was a vivid example. A year later, Belarus had the same experience. In 2008 Russia reduced its oil supply on the Southern Druzhba pipeline to the Czech Republic, right after Prague signed an agreement with Washington on radar installation for a missile defense system. In January 2009 Gazprom again cut gas supply to Europe through Ukraine, this time affecting no fewer than 20 countries; the disruption of gas flow was complete and lasted for two weeks. There are scores of other examples in the former Soviet space and in Central and Eastern Europe. Russia has become notorious as a very unreliable energy supplier.

Moscow's willingness to play outside the international system also means it uses oil and gas in unconventional deals, such as the Chinese bridge loan for Rosneft's takeover of Yuganskneftegaz and reportedly to meet its recent financial needs due to the global crisis. Russia has played one European country against another in securing supposedly favored business relationships in the energy sector for its national champion companies, such as E.ON, ENI, and Total. The recent experience of BP in its TNK-BP partnership may be an indicator that a 50-50 partnership with Russian companies is a dubious long-term strategy for Western companies. The Conoco-Lukoil relationship has yet to prove itself a commercial success. But as long as access to resources is restricted, companies, including those from China and India, will be tempted by special relationships.

Russia continues to talk about security of demand from Europe and about wanting to diversify markets for its oil and gas exports. As long as the basis for such diversification is economic, it poses no problems for the international marketplace; if not, then it raises concerns about whether arms sales and other geostrategic factors are part of the trade consideration. Similarly, Russia is promoting hugely expensive pipeline projects, such as Nord Stream and South Stream, that seem primarily intended to bypass transit countries like Poland and Ukraine and leave them more vulnerable to a supply cutoff. They would also increase the cost of gas to European consumers and reduce the netback price for Russian producers—seemingly another triumph of politics over economics.

In the past, when international energy prices plummeted, the market capitalization of Gazprom and Rosneft fell as well; the market value of Gazprom peaked at $350 billion in May 2008, but it has since fallen by no less than 80 percent to as low as $70 billion, and Rosneft has seen a similar drop, reflecting the market's distrust of these nontransparent state hegemons. Their considerable indebtedness also has raised concerns and is likely to limit future investments. The two tentative gas pipelines to China have always appeared unlikely. South Stream now seems out of the question as too expensive and without gas. The Shtokman project is in doubt, as is the much-promoted Nord Stream pipeline. Gazprom never had financing for its many pet projects, and now it is running short of cash for its current operations and prime capital expenditures.

The oil sector is also facing dilemmas. With lower world oil prices, Russia has revived discussions of cooperating with OPEC and has actively promoted the idea of forming a "gas OPEC" with Iran, Qatar, and Venezuela. This raises questions of whether Russia sees itself as part of the Group of Eight (G-8) industrialized democracies or as part of a cartel of oil and gas export countries seeking to extract the maximum economic rate by curtailing production from time to time in order to prop up prices.

The international actions of Russia as a major oil and gas exporter call for close monitoring and coordinated responses from the West, particularly when the vital interests of the United States and its allies are involved. However, as long as US imports of oil and gas from Russia are negligible, American and European approaches will necessarily be influenced by America's more geopolitical and Europe's more geoeconomic interests. Hot spots like Ukraine will be a test of the US ability to reconcile these interests into a coordinated position and course of action on Russia policy.

Energy Intensity and Climate Change

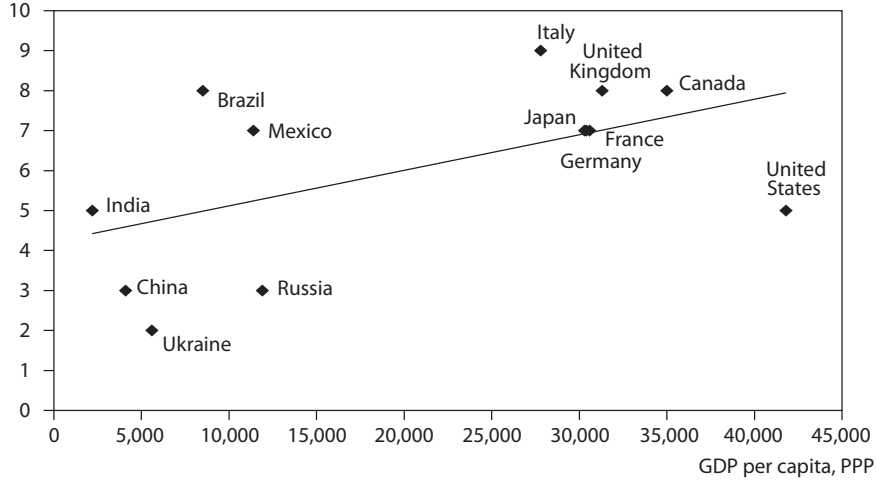
Climate change and the control of carbon emissions will be one of the greatest issues in the future. Russia has a rather peculiar starting position that influences its policies. The Soviet Union suffered from the greatest energy intensity of production of any country, because of its abundance of steelworks and other heavy industries and a wasteful economic system, while its GDP was relatively low. Since the end of communism, Russian industry has gone through impressive structural change. In the 1990s, unprofitable production that was also energy inefficient was closed down, which reduced Russia's energy intensity. As output growth resumed in 1999, heavy industry—and Russia as a whole—greatly improved energy efficiency as the most modern factories expanded and the obsolete ones stayed shut. Even so, in 2005, Russia was, together with China, among the least energy-efficient countries in the world (figure 4.2). Its energy intensity has declined but is still three times higher than Italy's.

As a consequence, Russia has very large emissions of carbon dioxide, although its carbon emissions declined from 13.3 tons per capita in 1992 to 10.5 tons in 2004, or by 21 percent over 12 years. Russia's GDP per capita is only one-quarter of the US level, but its carbon dioxide emissions are half that of the United States and still twice China's level (figure 4.3). In short, despite its improvements, Russia remains a major polluter.

Russia's economy has grown fast, but its potential for further cuts in energy consumption and carbon emissions remains huge. Because of price controls and export tariffs, the country's domestic energy prices have stayed far below world levels, but the recent decline in energy prices and

Figure 4.2 Energy intensity, 2005

GDP per unit of energy use (PPP dollars per kg of oil equivalent)

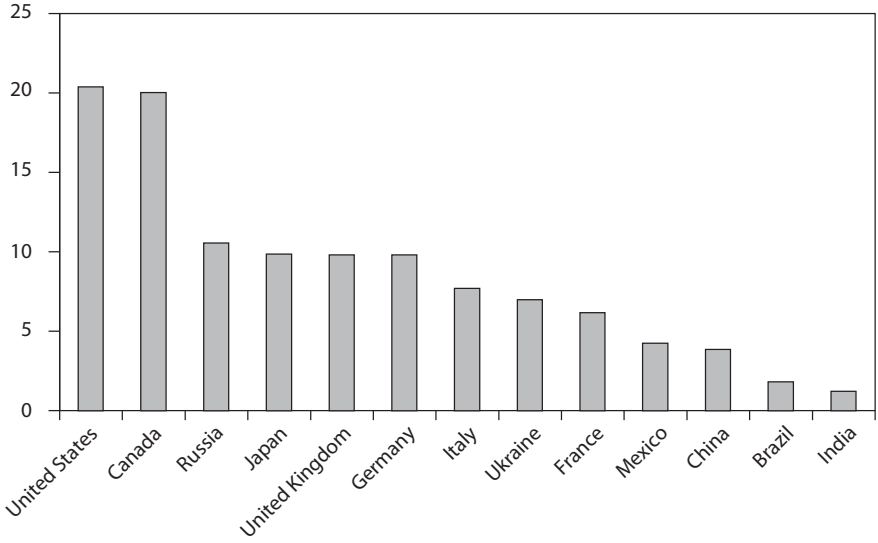


PPP = purchasing power parity

Source: World Bank, *World Development Indicators* database, www.worldbank.org (accessed on December 12, 2008).

Figure 4.3 Carbon dioxide emissions, 2004

metric tons per capita



Source: Millennium Development Goals Indicators database, http://mdgs.un.org/unsd/mdg (accessed on December 12, 2008).

domestic price hikes have reduced that discrepancy. The Russian government has long professed the aim of raising energy prices closer to international prices (albeit not all the way), a move that would undoubtedly contribute to energy saving.

Russia's heavy industry, despite its trimming and restructuring, is still large as a share of GDP by any international comparison. However, most of the metallurgical and other commodity-producing industries are likely to be streamlined and rendered less polluting.

Given these preconditions, Russia is one of the big swing states in climate control negotiations. After long hesitation, Russia acceded to the Kyoto Protocol in 2004, in many ways as a goodwill gesture to the European Union as the European Union concluded its bilateral protocol with Russia on the latter's WTO accession. The decision was beneficial to Russia because, thanks to the decreased industrial production of the 1990s, it had already reduced its emissions so much that it could profit from selling certificates of reduced emissions. Russia also has a strong interest in pursuing cap and trade for the future, since it is likely to be the biggest seller of emissions certificates in the world given that the Soviet Union was an enormous polluter in the base year of 1990.

In contrast, Russia has no particular interest in any agreement on carbon or energy taxation. First, it would lose its comparative advantage of low energy prices, which the government strongly emphasizes. Second, it would not benefit from any sale of emissions certificates.

Naturally, Russia would prefer changes in absolute carbon emissions rather than per capita emissions. Russia should, therefore, be a strong ally of the United States against China, India, and the European Union. In addition, Russia strongly believes in nuclear power, which it sees as an important means to reducing carbon emissions. On this, too, it shares the US position.

Logically, Russia should engage strongly in discussions of climate change policy, pushing for cap and trade based on current levels of carbon emission and for expansion of nuclear energy. However, so far, the Russian government has been more ambiguous and less focused on climate change than an observer would expect on the basis of the facts.

Conclusion

The recent return to a degree of normalcy in world oil prices and its impact on Russian economic assumptions may give the Russian government reason to pause for strategic consideration. It is doubtful that such national policy decisions in Russia can be much influenced from the outside. It would be somewhat similar to America trying to influence Mexican oil policy 70 years after the nationalization of oil assets in that country. If and when Mexican policy shifts to include private investment, domestic and

foreign, in oil, it will be due to the dynamics of Mexican politics and leaders creating a policy consensus that recognizes the benefits of such a policy change. It will not be because Westerners lecture the Mexicans. Similarly, the West will have to exhibit understanding, patience, realism, and astuteness about the extent of its influence on Russia's decision making in its oil and gas policy.

The United States can make clear to Russia that it does not have to be consigned to the natural resource–producing part of the world economy. Its oil and gas assets can ease the path toward reindustrialization and the modern global economy of technology and services, much as North Sea oil helped the United Kingdom in the 1970s and 1980s. If this is the path Russia chooses, then the West will welcome and embrace it. Certainly Western companies are prepared to share the risks and rewards of developing Russia's oil and gas resources, even after the unhappy experiences of recent years. The choice is Russia's.