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FROM THE EDITORS

Introduction to This Special Issue on Russia's Foreign Economic Relations

This issue of the Russian Analytical Digest includes three articles that were developed by teams of American and Russian authors working under the aegis of the Yegor Gaidar Fellowship Program in Economics. The Gaidar Fellowship is a program of the U.S. Russia Foundation for Economic Advancement and the Rule of Law (USRF) and is administered by the International Research & Exchanges Board (IREX). The goal of the program is to support economic advancement in Russia by strengthening the human capacity at Russian institutions in developing entrepreneurship, economic diversification, technological innovation, and globalization. The program provides opportunities for leading Russian economists to conduct collaborative research in the United States with U.S. experts in the same field, and to engage with the wider community of U.S. and Russian economists on topics of importance to both countries. The Yegor Gaidar Fellowship Program in Economics is named in honor of Yegor Gaidar (1956–2009), the first Minister of Economy and Finance of the RSFSR, the first Minister of Finance of the Russian Federation, Deputy Prime Minister, Chairman of Democratic Choice of Russia, and Member of the State Duma.

The RAD Editors

ANALYSIS

The “Golden Age” of Gas in China: Is There Still a Window of Opportunity for More Gas Exports to China?

By Ksenia Kushkina and Edward Chow, Moscow and Washington¹

Abstract

China is conducting pricing reform that could make its markets more attractive to exporters. However, it is also developing unconventional sources that could reduce demand for imports. Currently, the Chinese market has enough gas, but there may be opportunities for exporters like Russia in the future. Nevertheless, both Russian and U.S. companies should be careful about overly optimistic expectations for doing business in China's dynamic market.

Introduction

Chinese gas consumption was comparable to Germany's in 2010 and is expected to match that of the entire EU by 2035.² Given China's attractiveness for potential liquefied natural gas (LNG) and pipeline gas imports, what happens in such a large market is of the utmost interest to Russia, the United States, and the rest of the world, particularly when American shale gas technolo-

gies are transforming the global market.

A quick increase in Chinese gas consumption provides opportunities for gas exporters, but how much of the gas consumed in China will be imported and from where still present major uncertainties for potential gas suppliers.

This article examines the major factors that might drive Chinese natural gas production (with a special focus on pricing reform and shale gas) and provides estimates for the window of opportunity that companies from Russia and the U.S. might enjoy in China over the next 20 years.

What Is the Basis for High Estimates of Chinese Gas Consumption?

Talk about a “golden age” of gas in China started in 2011 when the International Energy Agency published its “Golden Age of Gas” report, increasing its forecast for annual Chinese gas demand from roughly 400 billion cubic meters (bcm) to as much as 634 bcm by 2035.³

1 The authors would like to acknowledge additional contributions by: Frank Verrastro, Senior Vice President and Director, Energy and National Security Program, Center for Strategic & International Studies (CSIS); David Pumphrey, Deputy Director and Senior Fellow, Energy and National Security Program, Center for Strategic & International Studies (CSIS); Jane Nakano, Fellow, Energy and National Security Program, Center for Strategic & International Studies (CSIS); and Aloulou Fawzi, Energy Economist, International, Economic, and Greenhouse Gases Division, Office of Integrated Analysis and Forecasting (OIAF), Energy Information Administration (EIA)

2 International Energy Agency, World Energy Outlook (New Policies Scenario), 2011.

3 International Energy Agency, World Energy Outlook (Golden

Higher consumption forecasts also reflected China's newly published 12th Five-Year Plan, which envisions a major expansion of domestic use of natural gas. Many analysts and market players were inspired by China's ambitious target to double the share of gas in its primary energy mix by 2015 and expect this big leap in consumption will lead to a substantial increase in imports. Forecasts of Chinese gas imports by 2035 vary greatly, but most of them lie in the upper end of the 120–330 bcm range (Figure 1 on p. 9).

However, few experts noticed that, apart from environmental reasons, there were other considerations forming the basis for the energy policy shift towards gas. In 2010, the Chinese Ministry of Land and Resources (MLR) published a reassessment of national oil and gas resources, which helped inform the 12th Five-Year Plan. An official reassessment, conducted by the main Chinese national oil companies (NOCs) and covering the largest 13 oil and gas fields, revealed that, compared to the first national oil and gas resources assessment in 2008, China has 45–49% more recoverable and geological resources. More optimistic data on resources prompted suggestions that Chinese domestic production also might grow larger. Consequently, MLR increased its forecast for Chinese domestic gas production from 200 to 300 bcm by 2030.⁴

It is worth mentioning that these new forecasts rely on exploration data available only for conventional, tight gas and coal-bed methane (CBM) and do not yet include shale gas. A national shale-gas resources assessment was launched just this year and is expected to be finished in a few years, so gas production from shale might be covered only in the 13th Five-Year Plan.

As a result, the high 12th Five-Year Plan's gas consumption target is based mainly on anticipated growth in domestic gas production and does not rely on shale gas at all.

But concluding that gas production in China will grow three times by 2030 is not that simple. On the one hand, there is huge potential for future production growth. Due to low domestic gas prices, Chinese producers have not had much incentive to produce gas. Chinese gas exploration density still is very low (18%⁵), and most of the exploration wells were drilled recently (16,000 wells from 2004–2009⁶). However, the coming price liberalization might heighten companies' interest

in gas exploration and production, and more gas discoveries might be coming in the future.

On the other hand, the 12th Five-Year Plan targets should not be taken too literally. China has a long history of not fulfilling its plans, especially energy ones. The country simply lacks institutional capacity for calculating reachable targets and largely is setting targets as guidance, rather than as an ultimate goal. At the same time, national companies may overestimate their resources and capabilities, since it helps them keep control over resources and enjoy benefits from the government.

Taking into account that the Chinese gas market largely is supply-driven, and the country has abundant coal, it is easy to imagine that in case of a lack of domestic gas supply, China might prefer not to meet gas targets and use more coal instead of expensive imported gas. It is very likely that higher gas consumption in China won't translate into equal growth in Chinese gas imports.

How Far Reaching Is Pricing Reform, and How Will It Influence Import Projects?

Currently pipeline gas in China is priced on a cost-plus basis. The federal government sets city-gate, transportation and well-head prices. The latter are being calculated on a base of costs and moderate margins for producers, so prices for producers are set at a comparatively low level (\$3–6\$/MBTU).

At the same time, the government does not control prices for LNG, and most of the LNG cargoes are priced at an international level. Early long-term LNG contracts were concluded at a stable \$3–4\$/MBTU price, but later ones have much higher prices, which also have a tendency to grow over time (\$7–18\$/MBTU⁷) (Table 1). Also, about 20% of Chinese LNG imports are coming in at high spot prices.

Table 1: Average Prices on LNG Coming Into China

Province	Start year	LNG export country	LNG average price, \$/MBtu	
			2010	IVQ 2011
Guangdong	2006	Australia	3.2	3.2
Fujian	2009	Indonesia	4.0	4.0
Shanghai	2009	Malaysia	6.6	9.2
		Qatar	10.3	18.2
Liaoning	2011	Qatar	-	11.9

Source: author's calculations based on Chinese customs data, 2012

Age of Gas Scenario), 2011.

4 Ministry of Land and Resources of PRC, China oil & gas resources reassessment, 2010 (in Chinese).

5 Ministry of Land and Resources of PRC, China oil & gas resources reassessment, 2010 (in Chinese).

6 Ministry of Land and Resources of PRC, China oil & gas resources reassessment, 2010 (in Chinese).

7 Calculated by author based on the China customs data (in Chinese), 2012.

With imports expected to double within the next few years, pricing reform that will let the government better balance low domestic and high imported prices is inevitable. Chinese policymakers also feel the need to encourage domestic production instead of using expensive imports and to create conditions for building a unified national pipeline transportation system, which also requires a more market-oriented approach to pricing. Changes in the pricing policy have been discussed for many years. In December 2011, the government made the first real steps towards reform and unveiled details of the prospective pricing system.

The pricing experiment was launched in two southern provinces, Guangdong and Guangxi. Since then, pipeline gas in those provinces has been priced under a net-back mechanism. The city-gate price is calculated on the basis of the discounted average price of liquefied petroleum gas (LPG) and fuel oil imported to Shanghai (as a hub of the future unified gas transportation system) and transportation costs.⁸ If the system works well, as it has so far, the government likely will extend it to other provinces.

The new system might have some very important implications for import projects. First, domestic prices calculated with a close reference to international ones means that Chinese producers might enjoy much higher well-head prices, which could lead to a substantial increase in domestic gas production and decrease the share that is left for gas imports. Second, the new system is designed so that in the coastal provinces, pipeline gas, while becoming more expensive, still stays much cheaper than spot-priced LNG and in some cases, even cheaper than LNG coming in under long-term contracts. That might lead to a pipeline for liquefied natural gas substitution and also decrease the amount of gas imported from the international market.

And, finally, the new mechanism creates incentives not only for domestic pipeline projects, but also for imported ones. The author's calculations show that after pricing reform and completion of the second West-East pipeline, CNPC, which has been suffering multimillion-dollar losses selling Turkmen gas in Shanghai, now can sell the gas in much more distant Guangdong province at a profit. The same would be true for imports from Russia. CNPC can afford to pay comparatively high prices for Russian gas now, if it is sold in Guangdong. After extending pricing reform to other provinces, the Chinese position on imported gas prices might become even more flexible.

The new Chinese net-back pricing formula also is very close to the one used in the European market. Before the new formula was developed, gas prices in China changed occasionally—about once in a year or even three years. Under the new pricing mechanism, they probably will change on a more regular basis and follow the track of European prices. If applied nationwide, pricing reform can help to overcome one stumbling point in Sino-Russian gas negotiations—compatibility of Chinese prices with European ones. However, this does not alter the higher transportation costs for potential Russian gas exports to China, when compared to its current exports to Europe.

It is likely that pricing reform will be implemented in other Chinese provinces, most probably after the 2013 political leadership transition. The reform might have a positive effect on Russian and Turkmen import projects, since Chinese importers will be able to sell imported gas at higher prices. At the same time, it might have a negative effect on LNG projects because LNG will have to face higher competition from domestic and imported pipeline gas.

Shale Gas in China—Will the Export “Window of Opportunity” Close?

Judging from media reports, shale gas in China seems to be a very promising story. NDRC plans to produce 6.5 bcm of shale gas by 2015 and from 60–100 bcm by 2020. If developed that quickly, shale gas could displace most Chinese imports soon. But how realistic is that scenario?

There is only one thing about shale gas in China that can be said for sure—it is still too early to make any judgments. Critical resource evaluation data might be obtained only through drilling, and there are just a handful of shale wells drilled in China so far, compared to approximately 40,000 wells⁹ in the U.S. Most of the wells are vertical, with just a few horizontal ones, which are critical for shale-gas production. None of these wells produce gas at a sustained, high rate.

Without actual production, it is impossible to estimate how much gas might be recovered, which is why recoverable-resource numbers for Chinese shale gas vary greatly. The U.S. Department of Energy's Energy Information Agency (EIA) applied a pretty optimistic recovery factor of 25% and estimated that out of 134 trillion cubic meters (tcm) of potential shale-gas resources, 36 tcm are recoverable. After obtaining first-drilling data and realizing the complexity of the shales, Chinese

8 “Provisions of the NDRC about reforming the gas pricing mechanism in Guangdong, Guangxi” (in Chinese), NDRC, Dec. 26, 2011.

9 Number provided at author's request by Aloulou Fawzi, Project Manager, International Shale Gas Resources and Activities, Energy Information Administration (EIA).

Ministry of Land and Resources applied a more moderate 18.5% recovery factor and stated the country has 25 tcm of recoverable resources.

But all of those numbers are largely analytical estimates and, without substantial geological backing, are highly speculative. China does not have any proven shale gas reserves yet and, during the 12th Five-Year Plan, the Chinese intend to verify only 1 tcm geological and 200 bcm of recoverable reserves by drilling only 50 exploration, 150 production and 990 water wells.¹⁰

Although China is still at the beginning stage of creating a regulatory framework for the industry, it is putting a large emphasis on shale gas and already has done a lot to encourage the sector's development. Chinese policymakers promised not to regulate shale-gas prices¹¹ and allowed private companies into the sector.¹² They also pledged to prioritize land approvals, allow duty-free equipment imports and provide subsidies to companies tapping shale gas.

These are important regulations that already have given an initial boost to the Chinese shale-gas industry. But major challenges that might hinder the sector's development still exist.

Technology is the critical challenge for the future of the shale-gas industry in China. Chinese shales differ from American ones, so existing technology simply cannot be replicated in China.

Shales in most Chinese basins are rich in clay. When hydraulic pressure and energy are injected into shales with high clay content, they tend to be ductile and deform instead of shattering, so productivity of such shales is very low. Only two Chinese basins, Tarim and Sichuan, have more favorable shales with a high percentage of quartz. However, geological conditions in even the most promising Chinese basin, Sichuan, still are less favorable than those in the U.S. The first drilling results published by CNPC show that Sichuan shales are up to three times less thick, have two to three times lower porosity, lower pressure and much lower gas content¹³ (Table 2 on p. 9). Consequently, the extraction of gas will require more complex technology and productivity of the wells probably will be much lower.

Shale-gas development in the Tarim basin might be hindered seriously by another challenge—water scarcity. Shale-gas extraction is extremely water intensive, and the Tarim basin lies in the desert, which makes it very difficult, if not impossible, to develop large-scale shale-gas production there.

However, the widely-held opinion that the water issue might become the main obstacle to shale-gas development in China probably is not true. There are several approaches to solving it, although each would take time to develop and require costly infrastructure and technology investments. They also involve some political risk, since water contamination or scarcity could lead to disaffection among the local people, and the Chinese government is very sensitive to public discontent. But local governments also are interested in developing higher value-added production (compared to water-intensive coal production and farming) and probably will be able to deal with the water issue through better water management and more thorough regulations. A lot will depend on whether companies will be able to find less water-intensive ways of production, such as using recycled water, replacing it with chemicals and fluid combinations and developing technology that uses gels.

Apart from water and technology, there are two inter-related problems that will be more difficult to overcome. One is high production costs. According to a recent EIA study, it would cost from \$7.3 million–13.7 million per well to develop shale formations in Sichuan.¹⁴ These numbers are similar to Chinese estimates¹⁵ and compatible with American costs. But this geologic formation is relatively young, and the cost of developing older and deeper shales, such as those in Tarim, may run as much as \$25 million per well.¹⁶

This means the average cost of shale-gas production in China may start at \$6.6–12/MBTU.¹⁷ These are the numbers for shallower Sichuan shales—Tarim wells are 30–80% more expensive.¹⁸ They don't include "above

10 "Five-year shale-gas development plan" (in Chinese), NDRC, March 2012.

11 The shale-gas market pricing commitment officially was mentioned in "Provisions of the NDRC about reforming the gas-pricing mechanism in Guangdong, Guangxi" (in Chinese), NDRC, December 2011.

12 "Mineral resource law provisions" (in Chinese), State Council, December 2011.

13 Li Liguang (CNPC), "Status and Practices of Shale Gas Exploration and Development in Sichuan Basin", presentation at U.S.–China oil and gas industry forum, September 2011, Chendu, China.

14 Aloulou Fawzi, "The Potential for Shale Gas in China", Council on Foreign Relations, April 13, 2012, Washington, D.C., U.S.

15 According to Chinese media, drilling costs per well in China range from \$7.6–9 million, but in some cases might be as high as \$15 million. (CNPC worker); Honghua Group chief geologist confirms this number stating that per-well cost is around \$7 million. (Zhang Yu, "Chinese shale gas 12th Five-Year Plan revealed in hope" (in Chinese), Dec. 13, 2011.)

16 Aloulou Fawzi, "The Potential for Shale Gas in China", Council on Foreign Relations, April 13, 2012, Washington, D.C., U.S.

17 Author's estimates, based on average EUR of American shales (EIA data) and average costs per well (A.Fawzi, EIA). In the best-case scenario (if the Chinese recovery factor equals the highest recovery factor of U.S. shales) this number would transform into \$1.8–3.3/MBTU.

18 Aloulou Fawzi, "The Potential for Shale Gas in China", Council on Foreign Relations, April 13, 2012, Washington, D.C., U.S.

ground” costs (water, infrastructure access, defining property rights, drilling rigs etc.), that might increase cost estimates by 30–50%.

At the same time, the cost of conventional gas production in Sichuan lies in the range \$4.4–\$5.7/MBTU, and Sichuan gas retails at \$6.3–\$6.7/MBTU. If the gas-pricing reform experiment is extended to other Chinese provinces, shale-gas producers might sell their gas, for example, in Shanghai, where retail prices could be around \$9/MBTU.¹⁹ Shale-gas prices might be a little higher (since the price is not regulated by the government), but it still should be competitive with a \$9/MBTU level.

That said, the main problem that is slowing development of the Chinese shale-gas sector is market monopolization. With the current costs and pricing structure, big Chinese oil and gas companies²⁰ do not have much incentive to produce shale gas since, compared to conventional gas, its costs are too high. Pricing reform, which lets them sell gas with more profit, would strengthen their interest in conventional resources even more.

The Chinese shale-gas industry might be fueled only by either small companies that would be satisfied with small margins between high costs and market prices or foreigners who may substantially decrease the costs using advanced technologies and effective subcontractors. But none of them currently are represented on a large scale in China.

The Chinese approach to foreign investors is “get the technology, do not give the market.” Foreign companies can get access to Chinese shales only in partnership with a Chinese counterpart, and the latter usually does not offer very favorable terms. That is why, despite many companies signing letters of intent to come to China, there are just a few working on Chinese shale gas so far.

Lack of foreign investment blocks Chinese access to experience and technology. Despite the common perception the Chinese might acquire technology through extensive investment in shale gas abroad, in many cases, when buying shares in foreign companies, the Chinese are not necessarily allowed to send many representatives to the field. Of course, the Chinese are trying to keep up with the technology chase, but in most cases when investing in U.S. shales, they are driven primarily by expectations of higher returns rather than other reasons. While the Chinese market is closed to foreigners, Chinese NOCs strive to look for technology on their own.

The challenge with private companies is their paucity.

The Chinese gas industry is in its infancy, and historically, only three big state oil companies dominate 90% of the market. State companies also control the petroleum service sector, as well as access to infrastructure and resources. The latter is especially important, since in most cases, NOCs hold the most promising shale-gas areas because conventional and unconventional fields often overlap.

Anticipating the challenge, MLR is drafting a rule that will allow it to seize blocks from companies that fail to invest at least \$4,700/km² annually, and it already has applied new regulations requiring lease holders to relinquish 25% of acreage not held by an Operational Development Plan every two years. But it will take years until a new regulatory framework can have a real effect on the market.

The lack of private companies and limitations on foreign participation, together with other technological, geological and water problems, could substantially slow down Chinese shale-sector development.

The unofficial target to produce up to 100 bcm of shale gas by 2020 would mean the Chinese shale-gas sector must develop as quickly as America’s, which is unlikely. It is interesting that at the end of 2011, the Chinese Ministry of Land and Resources came up with a much more moderate forecast of shale-gas production, anticipating that it will grow to 3–5 bcm by 2015 and 15–30 bcm by 2020. This estimate seems more realistic,²¹ and that is why further estimates of Chinese gas-production numbers in this paper are based on this MLR forecast.

Shale gas won’t close the export window of opportunity, at least not within the next 10 years.

Is There Still a Window of Opportunity for More Gas Exports to China?

So far Chinese NOCs are not in a rush to develop the shale-gas business. They have a long-term view of shale-gas development, while in the mid-term, there are other unconventional gas products that might develop much more quickly.

Although Chinese tight gas and CBM attract less attention than shale gas, it is these unconventional options that will provide most of the Chinese gas production growth within the next 10 years. Chinese companies have been producing tight gas and CBM since the mid-2000s, and currently these unconventional account for more than 35% of production (Figure 2 on

19 Author’s estimates, based on the new pricing formula and historical data on oil products import prices.

20 At least CNPC, as Sinopec and CNOOC, might have other reasons for extending its presence on-shore upstream.

21 Calculations using 150 production wells planned to be drilled during 12th Five-Year Plan and an average recovery factor prove that number (4.5 bcm by 2015). NOC’s corporate plans, taken altogether, also equal 4 bcm of shale gas by 2015.

p. 10). Within the next decade, production of tight gas and CBM may increase substantially, and American companies (Conoco, Far East Energy, etc.) may take part in these developments as well.

Having a better understanding of the source and scale of China's gas supply for satisfying its domestic market allows us to estimate the potential for future gas imports.

To do so we compared production²² and consumption²³ forecasts (Figure 3 on p. 10), then divided import estimates into contracted and uncontracted volumes. Uncontracted imports are those that do not have guaranteed (by contract, as well as resource availability) supply yet. That is why these imports might be considered windows of opportunity for foreigners striving to increase their presence in the Chinese gas market. For the long-term, we also considered two scenarios—one assuming quick shale growth and one not.

Guaranteed supply criteria explains the quite moderate numbers used for Turkmen future gas export evaluation. The current Sino-Turkmen gas contract stipulates that out of 30 bcm of contracted gas, 13 bcm come from fields operated by the Chinese, with the other 17 bcm provided by Turkmen. This 17 bcm may come from currently operated fields, but any further increase in exports (up to 40 or even 65 bcm) would require development of new fields, which, so far, is not guaranteed. Even though construction of the third line of the Central Asia-China gas pipeline already has started, it is still not clear yet whether there will be enough resources to fill the pipeline. Also, about 10 bcm of gas may come from Uzbekistan, but since the availability is not clear yet, Uzbek exports were regarded as feasible only in the longer term.

Due to the preferable pricing regime of a few years ago, China was very bullish on LNG projects. LNG capacity increases every two years, and by 2013 it is expected to grow from the current 20 bcm of gas to as much as 38 bcm. Most of the terminals currently operating and under construction have plans for expansion, so the capacity of LNG plants easily may be increased to as much as 70–90 bcm of natural gas a year.

Many terminals have imports contracted for many

years ahead. China already has signed contracts for 25 bcm of gas supply in a form of LNG, and by 2015 that number will increase to 40 bcm. About one third of these imports will be provided by Australia, another third by Malaysia, Indonesia and Qatar. Pricing reform may postpone plans for further terminal expansion, and some of the import contracts already have been delayed. For further calculations, we used an assumption that by 2015, China will have guaranteed supply for all terminals operated by that time, and that by 2020 and 2030, LNG imports will increase by a rather moderate 10 bcm during each period.

Results of this import evaluation are presented in the graph "Chinese gas import structure" (Figure 4 on p. 11). Largely due to big amounts of contracted LNG, the Chinese market proves to be oversupplied in the short-term, and by 2015, there is not much room for further increased exports to China.

In the mid-term, export opportunities arise, but 2020 also is the time when many currently planned and constructed LNG export projects will come onstream, so competition in the market will arise as well.

In the longer term, much will depend on the pace of shale-gas development. If developed quickly, shale gas can replace most of Chinese LNG imports; little progress in shale-gas development would mean that some 40 bcm in gas demand could be covered by more imports.

Recommendations

The Chinese market is one of the most dynamic in the world. Each Chinese policy decision (pricing reform, environmental policies etc.) may have a huge effect on the market, so one of the first recommendations for potential exporters is to keep pace with Chinese gas market developments, find the most updated information and analysis and adjust their export strategy correspondingly.

Recently, Russian and Chinese policymakers began a dialog on gas cooperation. There are two main projects currently under discussion. One, which is preferable for Russia, is the 30-bcm pipeline from the fields in Western Siberia. The fields also supply European markets, so one of the main requirements from the Russians is that the Chinese price be comparable with the European one. For many years, such prices were unacceptable to the Chinese, but pricing reform may bring Chinese and Russian negotiating positions much closer.

Russia should take a close look at future developments in pricing reform and adjust its supply contract terms accordingly. The closer the contract formula is to the Chinese domestic one, the higher the value this contract will have for the Chinese, since CNPC would not have to deal with a pricing differential—buying gas at

22 Production forecast is based on 2015 and 2020 tight gas and CBM production targets and corrected MLR gas production forecast (mentioned in "Oil and gas resource reassessment", MLR, 2010).

23 Chinese gas consumption estimates are beyond the scope of this paper, so for further import estimates we used the numbers from IEA's World Energy Outlook 2011 (New Policies Scenario). New Policies Scenario is a base IEA scenario, and its forecast for Chinese gas consumption is right in the middle between the forecast of the conservative WEO 2010 New Policies Scenario and the very optimistic WEO Golden Age of Gas Scenario.

one price and reselling it at another. But not only pricing terms may make a difference. Overall flexibility of contract terms also may be of high importance. If pricing reform is implemented on the model conducted in Guangdong and Guangxi, Chinese domestic prices will change in correspondence with international ones, with a lag of one year. In that case, a contract with a lower take-or-pay requirement would let the Chinese better adjust to changes in international prices. Then they will be able to buy more pipeline gas when oil prices are going up and more spot when oil prices are going down. So a more flexible contract might be of higher value to China.

Another Sino-Russian gas project relies on the construction of a 38-bcm pipeline from Eastern Siberia to northeastern China. The project is welcomed by China, since its eastern area is short of energy supplies, but less desirable for Russia, which prefers to diversify its export destinations and sell the gas in a form of LNG to all countries in the North-East Asia market.

One important conclusion might be made from the uncontracted import estimates—there probably is space for only one export project from Russia to China. Russia should choose between the two projects, and the overall recommendation for Russia is to proceed with negotiations on the western one.

Currently, the Chinese are not in a rush to make a final decision on imports because the market is over-

supplied until 2015. It may take a few years until they learn more about the prospects for the country's shale-gas development and see the effects of pricing reform. Even if they succeed in producing shale gas—probably not on as large a scale as in the U.S.—there is still some space for Russian exports to China in both the mid- and long-term. By being patient and providing reasonable flexibility on the contract, Russia could reach a mutually beneficial agreement with China relatively soon.

The recommendation for American policymakers is not to overestimate prospects for the Chinese LNG market. By 2020, competition in the Asian LNG market will increase. LNG exporters that would like to enter the Chinese market also will face fierce competition from Chinese domestic and pipeline import supplies, so they will not be able to sell the gas for a very high price.

The prospects for American companies entering China's shale-gas sector also might not be as bright as previously expected. So far, China's approach is "get the technology, do not give the market," and it is likely they will follow this strategy in the future. But American companies (especially smaller ones) may also seize some opportunities in the tight gas and CBM sectors. Within the next two decades, it is these sectors that will provide the most Chinese gas-production growth.

About the Authors

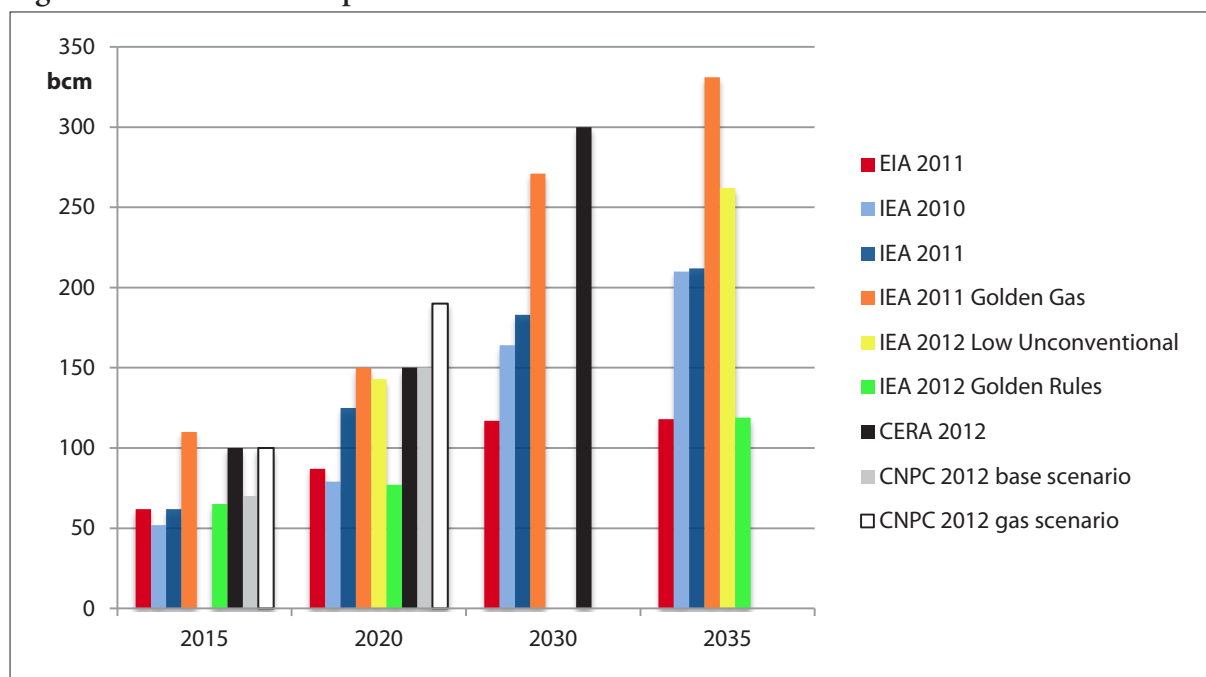
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TABLES AND GRAPHS

Chinese Natural Gas Import and Production

Figure 1: Chinese Gas Import Forecasts



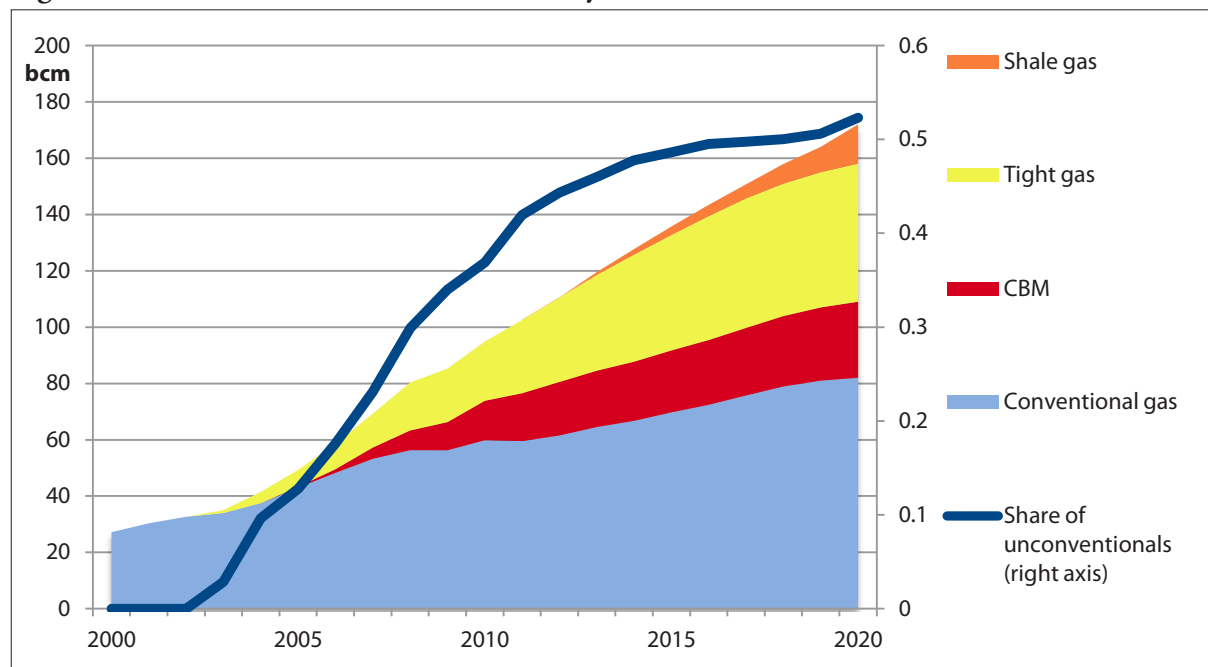
Sources: EIA, IEA, CNPC, CERA, MLR

Table 2: Comparison of Shales' Characteristics in China and the United States

Items	Barnett	Marcellus	Eagle Ford	Haynesville	Well Wei-201		Well Ning-201	Well Ning-203
					Long-maxi	Qiong-zhusi	Longmaxi	
Depth (m)	2286	2134	3505	3658	1503.6–1543.3	2652–2704	2479–2525	
Net thickness (m)	91	107	76	69	39.7	52	46	33.4
BHT (°C)	93	54	168	171	65	95		
TOC (%)	4.5	4.4–9.7	4.5	3	3.2	2.9	2–4.5	2.5–4
Ro (%)	2	1.23–2.56	1.5	2.2	2.7	3.5	2.8–3.2	2.8–3.2
Effective porosity	6	4.5–11.1	11	10	4	2.2	3–6	2–6
Total gas content (m ³ /ton)	8.5–9.9				1.7–4.5	1.1–2.8	1.72–3.5	3.5–6.5
Adsorption gas content (%)	35	50	20	18	45	46	0.6–1.3	1–1.6
Reservoir pressure (MPa)	27.6	27.6	35.8	58.6	15.3	28.2	51	

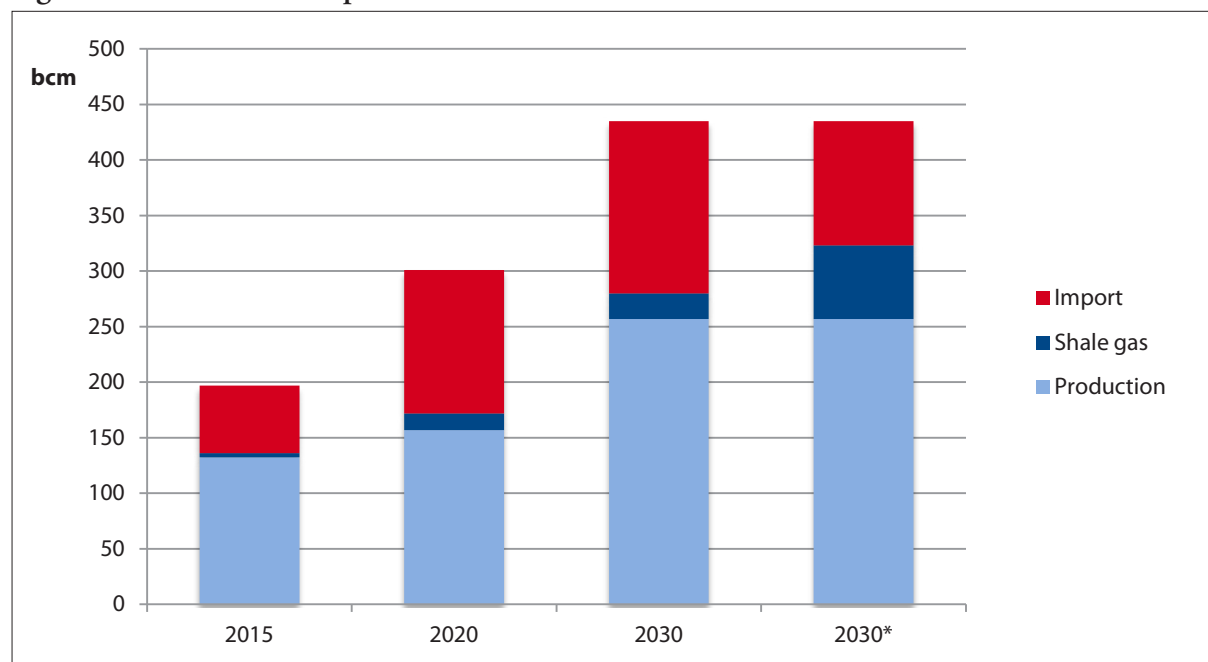
Source: PetroChina, 2011

Figure 2: Chinese Gas Production Forecast by 2020



Source: author's estimates based on long-term forecast of MLR and mid-term development plans for coal-bed methane and tight gas

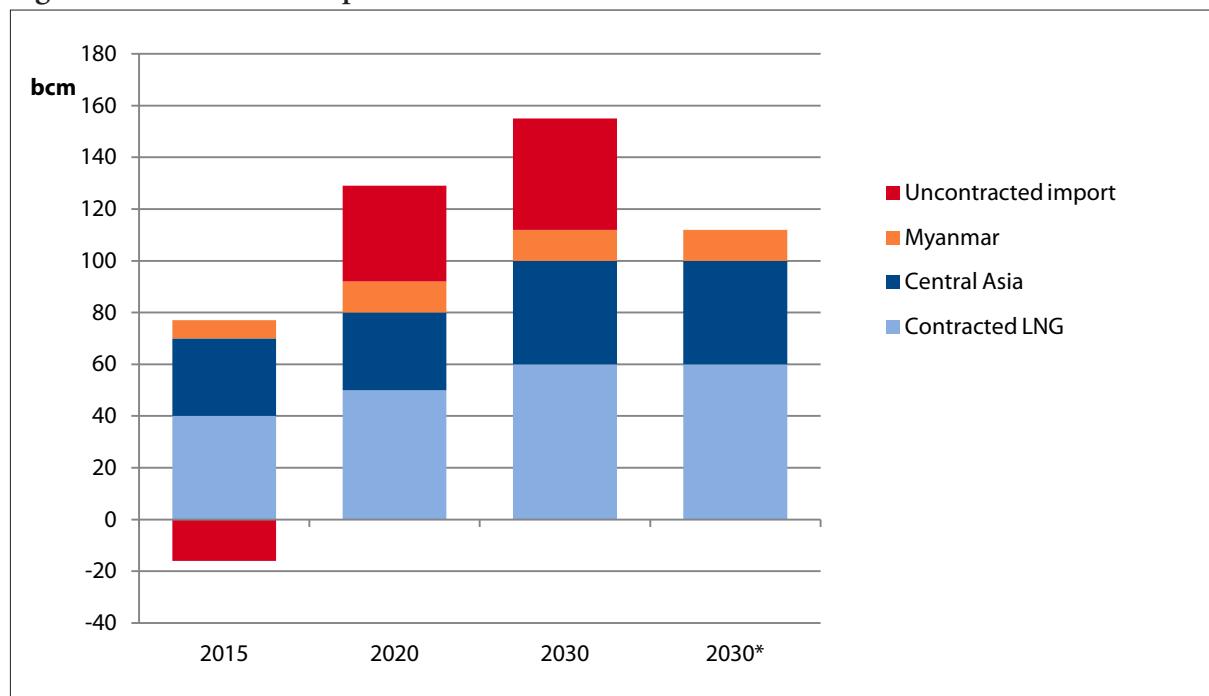
Figure 3: Chinese Gas Import Estimates



* shale gas scenario

Source: author's estimates

Figure 4: Chinese Gas Import Structure



* shale gas scenario

Source: author's estimates

ANALYSIS

WTO Accession: Implications for Russia

By Viacheslav Evseev and Ross Wilson, Washington and Moscow

Abstract

Accession to the World Trade Organization will have a variety of positive and negative impacts on the Russian economy. This article provides a guide of what to expect.

Introduction

The eighth World Trade Organization (WTO) Ministerial conference held Dec. 15–17, 2011 in Geneva approved Russia's accession after 18 years of difficult negotiations. The decision was historic—Russia had been the largest economy in the world outside the WTO system after China's accession in September 2001.

Russian and Western policymakers, trade professionals, companies and experts now are evaluating Russia's WTO accession and what will come next. Discussions in Russia are focused on the following issues:

- How successfully have Russia and the world trade community negotiated the terms of accession?

- Has Moscow managed to successfully defend the domestic market? Or, will Russia become wide open for foreign companies?
- How will it be possible to protect the domestic market against unfair trade practices in the new legal environment?

Western commentary has looked at other issues:

- How will Russia comply with its commitments?
- What role will Moscow play in global trade talks, including the Doha Development Round?
- How will accession impact market liberalization and the reinforcement of market economic values and thinking?

- How will WTO membership enhance the rule of law and good, stable and predictable governance?

This article analyzes the implications of Russia's economic and social development in the wake of its accession to the WTO, outlines three possible post-WTO scenarios for economic development and presents recommendations for the Russian government and its key trading partners.

Impact Of WTO Accession on Russia's Economic and Social Development

Russia's Foreign Trade Regime: from Protectionism to Liberalism

After the fall of the Soviet Union, Russia took steps to liberalize and integrate its economy into the world system. Starting from the Decree of the President of the Russian Federation—"On liberalization of foreign trade activities in the RSFSR", issued Nov. 15, 1991—that cancelled the state monopoly on foreign trade, the authorities implemented steps to conform the country's trade regime to international standards. Russia has significantly decreased tariff barriers and quantitative restrictions on imports and exports, progressively reduced licensing requirements, cancelled the system of specially authorized exporters (spetsexporter), modernized currency regulation and implemented many other steps. As a result, the number of independent companies involved in foreign trade has dramatically grown since 1991, and the share of foreign trade as a percentage of Russia's GDP was 43.8% in 2010.¹

But the country's economy remained well-protected. In 2010, Russia still extensively used trade-restrictive measures.² According to the European Commission's "Seventh Report on Potentially Trade Restrictive Measures" (issued in October 2010), Russia had implemented 73 potentially trade-restrictive measures during that year—more than any other country the EC assessed.

This practice is about to change. By acceding to the WTO and agreeing to comply with its multilateral rules that prohibit the arbitrary use of protective, discriminatory, and other trade distorting measures, Moscow has signaled that it intends to move away from protectionism toward a more liberal model in foreign trade. It has accepted the critical free-trade values that lie at the foundation of the GATT/WTO system. These include open-

ness, transparency, freedom of competition and consistency of economic policy. WTO accession will reduce significantly Russian authorities' ability to act as they have before. The extensive set of binding commitments they have undertaken reflect—and/or will require—a dramatically different approach to trade policymaking and economic policy decision-making.

Russian Economy: New Challenges to and Opportunities for Growth and Diversification

Western policymakers by and large accept that Russia's accession to the WTO likely will have an important and positive impact on the country's economic development and its integration into international trade. Ordinary Russians, however, do not have a clear position with respect to WTO membership. According to a November 2011 Levada Center survey, 38% believe WTO membership is in the country's interests, while 28% have an opposite opinion, and 24% are undecided.³

Nevertheless, a World Bank report estimates Russia's GDP should grow by about 3.3% per year (or about \$49 billion per year, based on 2010 GDP at market exchange rates) over the 10 years following WTO accession. Over the long term, when the positive impact on the investment climate is incorporated, the gains should increase to about 11% per year (or about \$162 billion per year at 2010 market exchange rates).⁴

Analyses by international organizations, government authorities, trade associations and experts, and business community representatives point to several possible implications of WTO accession for the Russian economy.

Positive Gains

FDI Increases in the Services Sectors

Russia attracted a fairly low level of foreign direct investments (FDI) in the post-Soviet period. At the end of 2010, accumulated FDI amounted to only around \$300 billion.⁵ In comparison, FDI in 2010 alone reached \$236.2 billion in the United States and \$185.1 billion in China.⁶

According to World Bank estimates, rising FDI in

1 Federal State Statistics Service of the Russian Federation. Available from: http://www.gks.ru/bgd/regl/b11_11/ssWWW.exe/Stg/d2/26-02.htm (accessed on March 28, 2012).

2 Trade-restrictive measures are measures undertaken by governments that have negative effects on international trade, i.e. import or export duty increases, licensing, local content requirements, import prohibitions, etc.

3 Levada Center, "Country in the system of international relations", Jan. 12, 2011, Moscow. Available from: <http://www.levada.ru/01-12-2011/strana-v-sisteme-mezhdunarodnykh-otnoshenii> (accessed on March 15, 2012).

4 World Bank, "Moderating Risks, Bolstering Growth: Russian Economic Report 27", p.37. Available from: <http://www.worldbank.org/content/dam/Worldbank/document/rer-27-march2012-eng.pdf> (Accessed on March 27, 2012).

5 Federal State Statistics Service of the Russian Federation. Available from: www.gks.ru (accessed on March 15, 2012).

6 Greyhill Advisors, FDI by country. Available from: <http://greyhill.com/fdi-by-country/> (accessed on March 26, 2012).

the service sectors may become the most significant outcome of Russia's WTO accession. This is primarily due to Moscow's commitments to open services to foreign investment, i.e., banking and insurance, telecommunications and transportation.⁷ WTO membership sends a strong signal to foreign investors that the country complies with international rules and standards. An increase in the transparency and consistency of policymaking also will be critical factors in attracting foreign investors.

Technological modernization and increased productivity

The Russian economy is in dire need of more productive technology. The reduction of tariffs and improvements in intellectual property rights protection likely will lead to an increase in the importing of new equipment, which will help to modernize Russian industry. This assertion is supported by the Center for Customs Tariff and Non-Tariff Regulation. The Center conducted a survey in 2011 among leading Russian industrial companies and found that 19% of the respondents pointed to the reduction of customs duties on new technology as the most significant advantage of WTO membership.

Small- and Medium-Size Business Development

Unlike big companies in the industrial sectors, many small- and medium-size enterprises (SMEs) are expected to gain from Russia's entry into the WTO. Historically, Russian SMEs are concentrated in the areas of retail, logistics and transportation, IT, tourism, accounting and consulting services. These sectors most likely will grow as a result of increased trade and investment flow to Russia after accession. They also will have better access to new information, other technologies and better quality equipment. This assertion is supported by a survey conducted in 2003 among representatives of SMEs and relevant public authorities and trade experts: 41.3% predict the retail sector will benefit from Russia's WTO membership; 27.5% predicted gains in auditing and consulting services, 25% in telecommunications and 18.8% in transportation.⁸ However, SMEs in the goods sector of the economy likely will experience difficulties due to the inflow of competing foreign products. According to the same survey, 63.6% expect negative repercussions for manufacturers of consumer goods; 53.4% expect losses in machine tool and equipment manufacturing, 50% in agriculture and 27.3% in banking.

Exporting Sectors Will Benefit from Improved Market Access

The WTO system is comprised of multiple rules and agreements that are designed to protect companies in foreign markets, decrease discrimination and remove trade barriers. However, even prior to WTO accession, Russia obtained either bilateral most favored nation (MFN) treatment⁹ or preferential status from almost all of its trading partners, including the European Union, China and most of the former Soviet states. For its part, Russia granted MFN status to 130 countries.¹⁰

Therefore, WTO accession will not improve access significantly for Russian goods and services in other markets. However, sectors that are subject to anti-dumping or other trade-restrictive measures, such as steel, chemical and fertilizer manufacturers, will benefit because the government will be able to use the WTO dispute settlement system to challenge unfair trade restrictions.

Greater competition in Russia's domestic market

Competition is a critical element of the open-market economy model, but remains low in Russia, despite policies implemented in the 2000s to promote it. The Global Competitiveness Index 2011–2012 ranks Russia 66th out of 142 countries.¹¹ GATT and GATS, as well as other WTO rules designed to promote fair trade, open markets and the removal of trade barriers, will enhance competition in many ways, primarily through the increase of foreign and joint-venture companies and the greater availability of foreign goods and services. The ability to challenge arbitrary policy decisions through the WTO dispute settlement system also will be extremely beneficial and will contribute to the improvement of Russia's overall economic situation.

Promotion of Pro-Free Trade Government Policies

In order to keep up with new challenges and operate in a transparent environment, Russian authorities will have to improve the way they govern. A highly competitive environment will require a competent and non-corrupt government bureaucracy. Increased pressure from the private sector, the necessity of increased international involvement and the required notification of WTO members regarding domestic trade policy will

7 David G. Tarr, "Russian WTO accession: Achievements, impacts, challenges," OECD, 2008. Available from: <http://www.oecd.org/dataoecd/28/4/40747249.pdf> (accessed on March 10, 2012).

8 Information and Consulting Center, Business-Thesaurus, Research, "Examination of small business' problems related to accession of the Russian Federation to the WTO", p.88, Moscow, 2003.

9 Most-favoured-nation (MFN) treatment (GATT Article I, GATS Article II and TRIPS Article 4), the principle of not discriminating between one's trading partners (source www.wto.org).

10 The Ministry of Economic Development of the Russian Federation, VED regulation website. Available from: <http://www.ved.gov.ru> (accessed on March 26, 2012).

11 World Economic Forum, "The Global Competitiveness Index 2011–2012 rankings", 2011. Available from: www.weforum.org/gcr (accessed on April 6, 2012).

constitute powerful incentives for the government to undertake reforms and increase its efficiency.

By engaging high-level policymakers in international trade-related talks, WTO membership will promote free-trade values among the leadership and necessitate further liberal reforms. Senior policymakers traditionally have held the interests of Russia's overall economy in mind, while lower-level officials from sector ministries may allow interest groups to strongly influence their decision making. Moscow's experience during the WTO negotiations proved that political leadership and intervention is critical to the effective implementation of reforms in slow-moving sector ministries.

Negative or Ambivalent Effects

Tariff Reduction Will Not Become a Major Source Of Gains from WTO Membership

Russia committed to set its final legally binding tariff ceiling at, on average, 7.8%, compared with a 2011 average of 10%.¹² This reduction is not large, since Russia progressively has been liberalizing its tariffs since the 1990s. Therefore, market-access commitments on tariffs will not be a major source of gains for the Russian economy, although it will be important in certain areas. For example, final tariffs will be bound at zero for cotton and information technology products that currently face an applied rate of 5.4%. The average tariff for wood and paper will decrease to 8% from the current rate of 13.4%.

*Certain Traditional High Value-Added Sectors of the Russian Economy May Be Threatened*¹³

The reduction of tariff barriers also may have an immediate, negative impact on certain traditional high value-added sectors of the Russian economy. Affected areas may include: a) agricultural machinery (the duty on combine harvester-threshers, which was issued three or more years ago, will decrease from 15% to 5% at the time of accession; b) truck manufacturing (the duty on motor vehicles used for transport that exceed a gross weight

of five tons will decrease from 25 to 15% by 2017); and c) airline manufacturers (the duty on wide body commercial airplanes that seat fewer than 50 passengers will decline from 20% to 7.5% by 2016).

It is not surprising that 24% of Russia's industrial companies believe accession to the WTO will lead to a decrease in domestic producers' share of the internal market.¹⁴ Trade experts in each sector and the authorities believe that areas under the greatest threat include the automotive sector, aviation, agricultural machinery, agriculture and wood processing.

For Russian Citizens: an Increase in Living Standards or Unemployment?

WTO membership also will have an impact on ordinary citizens, including:

Increased Household Income

According to the World Bank, WTO membership will generate gains in income for 99.9% of households in Russia between 2–25%.¹⁵ Poor households likely will gain slightly more than the wealthy. Skilled labor and urban households should gain relatively more than average due to the increase in foreign direct investment in the skill-intensive business service sector.

Increased Availability of High-Quality Goods and Services at Lower Prices

High tariffs mean high prices. WTO accession and the consequent lowering of tariff and non-tariff barriers for foreign products likely are to result in a slight decrease or at least a slowdown of annual price increases on imported goods and services. This will enhance the availability of foreign goods and services to many Russian citizens in the medium and long term.

In the short term, it is likely that foreign producers, dealers and retail chains will benefit more than households.

Risk of Potential Unemployment

As mentioned previously, certain sectors in the Russian economy will be at a greater risk of decreased production or even collapse after Russia joins the WTO. Despite significant gains for households during the transitional period following the accession, many workers may lose their jobs in firms that fail to compete in the new environment.

12 WTO, "Working Party seals the deal on Russia's membership negotiations", Geneva, Nov. 10, 2011. Available from: http://www.wto.org/english/news_e/news11_e/acc_rus_10nov11_e.htm (accessed on March 13, 2012).

13 High value-added sectors refers to industries where an initial product or material is transformed from its initial state into another. For example, aviation, high tech, IT and so on, are high value-added sectors, as opposed to industries that only produce raw materials, which are considered low value-added sectors. By transforming the initial raw materials into goods, such as cars, airplanes, etc., the producers transform raw materials into products that serve a greater function, thereby adding "value" to these goods.

14 Center for Customs Tariff and Non-tariff Regulation Research, Survey, "Instruments of protection in foreign trade in the framework of WTO accession", Moscow, 2011.

15 World Bank, "Moderating Risks, Bolstering Growth: Russian Economic Report 27", p.37. Available from: <http://www.worldbank.org/content/dam/Worldbank/document/rer-27-march2012-eng.pdf>. (accessed on March 27, 2012).

Possible Outcomes Of WTO Membership in the Short To Medium Term: Three Scenarios

WTO accession is both a serious challenge and a unique opportunity for the Russian economy. According to World Bank reports and viewpoints expressed by experts in international trade, Russia likely will benefit from WTO membership in the medium and longer term, while some setbacks are likely in the short term—specifically industries that do not use raw materials. In addition, medium- and longer-term benefits from the WTO system won't come automatically. The private and public sectors will need to adapt and learn how to operate in an increasingly open, transparent and multilateral trade system.

There are three possible outcomes of WTO membership for the Russian economy in the short to medium term:

Increased Dependence on the Export of Raw Materials

Widespread opinion in public and professional circles in Russia holds that WTO accession will have no positive impact on the economy and the existing economic model, which is based on the export of raw materials, will be reinforced. In this scenario, the weakening of tariff and non-tariff barriers and the increased penetration of foreign producers into Russia's domestic market will seriously damage the domestic design and production of high value-added products and eventually lower, or even wipe out, the growth potential in the automotive sector, ship building, aviation, space technology and several other areas.

As a result, Russia's role as a supplier of raw materials may become magnified further, as will its dependence on imported technology and high-quality products.

Enhanced Modernization and Hi-Tech Growth

WTO membership and the consequent liberalization of market access for new technologies, know-how and spare parts will allow Russian companies to modernize at an accelerated rate. Accession will provide businesses with new opportunities to integrate into international production chains and establish new alliances. As a result, the technological sector will develop and eventually reshape the structure of the economy.

Encouraged Modernization Accompanied by Adjustment Difficulties

For the short and medium term, WTO membership will result in the progressive development of the technological sectors of the Russian economy, together with the continuing domination of sectors that produce or use raw materials.

This scenario is the most likely. WTO membership will encourage technological modernization and innovation, but will not bring significant, immediate changes to the structure of the economy. Rather, WTO membership will create incentives for consistent and positive changes in the business environment and development of competition in the domestic market.

Policy Recommendations for the Russian Government and Its Key Trading Partners

Russia's accession to the WTO should be considered as a next, major step toward integration into the multilateral trade system. The inclination toward protectionism is still strong, and this attitude will not disappear overnight. It may become stronger after accession once Russian companies realize their share of the domestic market is decreasing. Domestic producers who advocate for protectionist measures often have greater political influence than those who advocate for lower tariffs. In this challenging environment, the government, along with the country's major trading partners, will need to develop strategies to reduce the risk of potential non-compliance with Russia's WTO commitments and overcome any negative effects of WTO membership.

Recommendations for the Russian Government

- Conduct an education campaign among Russian companies and trade associations to improve their understanding of the WTO system and its legal framework;
- Develop and implement a safety net and assist in the reintegration of workers who may lose their jobs due to structural change (i.e., retraining, migration policy and additional education);
- Provide assistance to those sectors of the economy that experience significant setbacks, in compliance with WTO regulations;
- Initiate safeguards and anti-dumping investigations in order to confront any unfair trade practices or serious injury, in compliance with WTO regulations;
- Develop a consultative mechanism that involves the private sector and interested civil society organizations in trade policymaking; and
- Promote the development of trade-related educational programs in universities.

Recommendations for Russia's Key Trading Partners

- Encourage Russia to consistently shift from a protectionist to a liberal model in foreign trade by educating decision makers, business leaders and experts and by including Moscow in major trade-related talks;
- Assist Russian trade associations and government authorities at the federal and regional levels in build-

ing capacity to make effective use of the multilateral trading system; and
Avoid, in the medium term, the prospective use of trade disputes against Russia to provide the country the time needed to adjust domestic policies to meet new WTO commitments.

Conclusion

WTO accession is an important step in the Russia's economic development. It is a two-way street, reflecting rights and commitments on the part of both Russia and others. In order to achieve its economic goals and find an adequate place in an increasingly open global economy, it is clear that Russia needs to accede. Today's leading world economies need to be competitive in foreign markets, but they also need to open their domestic markets to foreign competition. Diversification, modernization and the growth of the economy will improve if the country's WTO accession is complemented by an improvement in the business climate in Russia.

Accession will create new opportunities and challenges. It is likely the economy will experience many positive changes such as the growth of FDI in the service sector, development of competition, expansion of SMEs, technological modernization and higher productivity. Increases in household income also are likely, as well as improved access to high-quality goods and services at lower prices for Russian citizens. Russia's estimated economic growth after joining the WTO is predicted to increase by about 3.3% per year. However, setbacks also are possible, including a negative impact on traditional high value-added sectors and the risk of unemployment.

Benefits from the WTO system won't come automatically. The Russian private and public sectors will need to adapt and learn how to operate in an increasingly open, transparent and multilateral trade system in order to experience the lasting, positive impact of WTO membership.

About the Authors

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Perspectives of Russian–American Investment Cooperation: Tendencies, Mechanisms of Support, Recommendations

By Konstantin Borisov and Timothy Frye, Moscow and New York

Abstract

This article examines the various foreign trade policies of Russia and the United States in comparative perspective. It pays particular attention to the ways that the governments and non-governmental sectors of the two countries seek to support investment.

Introduction

Foreign investment is one of the key driving forces of the globalization process. Considerable research demonstrates that foreign investment and trade expand cooperation between countries across a range of sectors. In recent years, the world economy has been under the strong influence of capital growth, heightened economic integration and the effects of financial crises as countries become more dependent on each other.

This article considers the following issues: global investment tendencies, features of investment in Russia and the United States, investment risks and barriers for Russian and American investors, governmental and non-governmental support mechanisms for investors, investment practices in the U.S. and Russia and recommendations for future Russian–American cooperation.

Investment Tendencies

The investment market from 2008 to 2011 was shaped by difficult conditions.

According to an UNCTAD report, due to the crisis from 2009 to 2011, global foreign direct investments were reduced to \$1.2 trillion. However, over the long term, revival of the investment market is expected to increase foreign investment to \$1.9 to \$2 trillion.

Currently, the U.S. is both the largest exporter and importer of foreign investment in the world.

From 1960 to 1980, American investments abroad exceeded volume of foreign investments in the country by 3.5 times. In the 1960s, the U.S. received only \$5 billion. From 1970 to 1980 the U.S. received \$41 billion. In the 1990s, the situation changed to active growth. The peak of foreign direct investment in the U.S. occurred in 2000, when volume of FDI reached \$314 billion.

In Russia, the active stage of investment cooperation began in the 1990s in connection with the changes in the political and economic systems. From 1992 to 1999, Russia received \$25.5 billion of foreign direct investment.

Since 2000, foreign investments in Russia have continued to grow, and by 2011 had reached a record \$191 billion. In 2011, foreign direct investments were \$18.4 billion. The total accumulated volume of foreign direct

investment in the Russian economy was \$139 billion in 2011.

Russia is focusing on importing investments from abroad. In 2011, the volume of accumulated direct foreign investments was more than double those investments made by Russia.

According to the 2011 UNCTAD, Russia was seventh in the world in terms of attracting direct investments. The basic reasons for investing in Russia largely have remained constant: to obtain access to natural resources (primarily hydrocarbon raw materials) and the domestic consumer market.

An analysis of Rosstat statistics, as well as current economic relations between Russia and the United States, shows that apart from the oil and gas sector, the following sectors are most promising for bilateral investment:

- Trade and retail
- Food industry
- Aircraft industry
- Space industry
- Automotive manufacturing
- Information technology

In the December 2011 Russian Survey, investors were asked, “Which sector of the Russian economy would you be willing to invest in, apart from fuel and energy?” The results were: 14.9% of respondents preferred manufacturing, food and hospitality each received 10.5%, 8.8% of investors were interested in construction and 7.9% in the transportation sector (see Figure 3 on p. 23).

Profitable markets in Russia where American companies already are working include: food (Mars, Coca-Cola, PepsiCo), automotive manufacturing (Ford, General Motors, Caterpillar) and information (IBM, Microsoft). For example, Russia is the fifth largest market in the world for Procter & Gamble, and in 2011, the Russian market was among the 35 most profitable for General Motors.

For Russian investors in the U.S., the following areas have been top priorities in the first half of 2011:

- Iron and steel industry, 65% of investments (\$5.1 billion)

- Telecommunications, 14% of investments (\$1.1 billion)
- Financial sector, 17% of investments (\$1.3 billion)

The activity of Russian metallurgical companies in the U.S. market has increased significantly since 2008. In 2008, the volume of foreign direct investments quadrupled in comparison with 2007. The major Russian investors are: Evraz, New Lipetsk Metallurgical Industrial Complex (NLMC), Norilsk Nickel and Severstal.

In addition to these sectors, other prospective areas for investment in the U.S. are the chemical and pharmaceutical industries and information technology.

Foreign investments in the U.S. market tend to concentrate on the service sector, attracting 62.1% of total foreign investments. The manufacturing industry attracts about 33.9%. Consequently, the U.S. service sector is a very interesting and potentially important area for Russian investors.

From a regional point of view, in the U.S. the most attractive states for foreign investors are California, New York and Texas. According to the U.S. Bureau of Economic Analysis, 30% of jobs created by foreign companies are concentrated in these states.

Russia's leading regions for attracting investments from the U.S. are Moscow and surrounding region, St. Petersburg, the Arkhangelsk region and the Krasnodar region. These areas currently attract 82% of all U.S. investments.

Over the past five years, accumulated investments in Russia from the U.S. have ranged from \$7 to 9 billion. Before the world financial crisis, the total volume of U.S. investment reached a record \$8.8 billion in 2008.

Table 1: Foreign Investments from the U.S. to Russia (billion dollars)

Indicator	2006	2007	2008	2009	2010	2011 (1 st half)
Total Investments of the U.S. in Russia	7.7	8.5	8.8	7.2	7.3	7.0
including Direct Investment	4.6	3.6	3.2	3.0	3.3	3.2

In recent years, there has been significant growth in total and direct Russian investment in the U.S. From 2006 to 2011, investments in the U.S. increased by 13 times. Despite the global financial crisis, the volume of Russian investments in the U.S. grew to \$7.7 billion in 2011.

It is important to note that since the early 1990s, the economic situation has changed, and the potential for investment cooperation between Russia and the

United States has improved. But because of existing problems and barriers, this cooperation still is weak and insufficient.

Table 2: Foreign Investments from Russia to the U.S. (billion dollars)

Indicator	2006	2007	2008	2009	2010	2011 (1 st half)
Total investments of Russia to the U.S.	0.6	1.2	5.4	6.5	7.7	7.7
including Direct Investment	0.6	1.1	4.7	5.4	6.5	6.5

Investment Risks and Barriers

What prevents the development of investment cooperation between Russia and the U.S.? First, there are general problems common to all foreign investors. Second, there are problems specific to Russia and the United States.

The first group of concerns for foreign investors in Russia includes unnecessary government interference in business relations, corruption, foreign exchange market instability, high level of inflation, a lack of transparency and imperfect legislation. In addition, there are a number of other barriers to doing business in Russia:

- Limited access to strategic sectors (raw materials, energy, telecommunications, etc.)
- Difficulties with access to infrastructure
- Problems securing workers (e.g. permits to engage a labor force)

Russia and the United States have different legal systems. The U.S. relies on a case law system, while Russia has a codified legal system. The countries also have different standards of accounting and taxation. And unlike the U.S., Russia has a strong system of state regulation and a very weak private sector.

The largest projects in Russia (e.g. Innovation Center Skolkovo) usually are undertaken with significant government support. Major banks (e.g. Sberbank, VTB) and state corporations (Gazprom, etc.) also require a huge share of governmental capital.

Problems with the investment climate in Russia are connected closely to a large number of licensing procedures and long terms of adjustments. For example, according to the World Bank's 2011 "Doing Business," the U.S. was ranked fourth of 183 countries, while Russia ranked 120th.

In the U.S., the basic obstacles to investment are low profitability, high labor costs, high level of taxation and a large external debt.

We also can compare the profitability of capital in bank deposits in Russia and the United States. The Bank

of America offers an annual interest rate of 0.5 to 1% on deposits of more than \$100,000. In Russia, the rate for deposits in dollars varies from 6 to 7%. It is necessary to take into account existing risks and inflation, but business is business and profit is profit.

Similar to the regulation of access to strategic sectors in Russia, the Committee on Foreign Investment in the U.S. has the ability to control and limit direct foreign investment in accordance with the 2007 "On Foreign Investment and National Security" act. This is also a form of barrier to foreign investors in the United States.

The second group of issues includes restrictions in trade between the U.S. and Russia, connected with the Jackson-Vanik amendment of 1974. It denies most-favored-nation treatment in trade and also provides for the use of discriminatory tariffs and fees. However, it is possible that this issue will be resolved following Russia's admittance to the World Trade Organization.

According to the results of the World Bank survey, Russia's WTO accession would generate a short-term gain in foreign investments of about \$53 billion annually, and in the long-term, up to \$177 billion. From this point of view, the transparent and broad access to Russian markets is among the important benefits for investors.

Governmental and Non-Governmental Support Mechanisms for Investors

The main purposes of investment policy in Russian-American investment cooperation should be creation of favorable conditions for increasing the volume of mutual investments, formation of an effective system of interaction among foreign investors and improvement of mechanisms to protect the rights and interests of foreign investors.

At the international level, a specialized agency of the United Nations—the World Bank Group and its divisions (the Multilateral Investment Guarantee Agency [MIGA], International Finance Corporation [IFC], International Center for Settlement of Investment Disputes [ICSID])—plays a key role in protecting investors. In addition, the U.N.'s investment coordination and information-analytical function is performed by UNCTAD.

Taking into account the high risks for investors in Russia, it is important to take advantage of MIGA's services, especially insurance. MIGA also mitigates political, currency and other risks, in addition to securing guarantees for infrastructure investment projects. Russia is not a member of ICSID (as signed in the Washington Convention of 1992, but which has not yet been ratified.)

In the U.S., the Department of Commerce implemented the Select USA program (previously known as Invest in America) to encourage foreign and domestic

investment. With the help of the U.S. State Departments' Office of Investment Affairs (OIA), the government conducts a wide range of activities, including protecting U.S. investments abroad and promoting market-based investment standards. The OIA also is responsible for interaction with the WTO, Organization for Economic Cooperation and Development, North American Free Trade Agreement, Asia-Pacific Economic Cooperation, etc.

The Overseas Private Investment Corporation (OPIC) was created in 1975 and provides direct support to American investors and represents their interests abroad. The Export-Import Bank of the United States (Ex-Im Bank) also provides different kinds of support to investors (e.g. export credits).

The U.S. private sector plays a significant role in issues related to foreign investment. The American Chamber of Commerce and the Department of Commerce monitor the access of U.S. exporters and investors to foreign markets. The U.S.–Russia Business Council (USRBC) also is engaged in developing bilateral cooperation between the countries, uniting more than 200 major companies from the U.S. and Russia. In addition, there are about 7,600 trade associations in the United States.

In Russia, the state plays the most important role in investment development. Major coordinating functions belong to the government and the Ministry of Economic Development of the Russian Federation. Private-sector interests mainly are represented by Opora Russia, Business Russia and the Russian Union of Industrialists and Entrepreneurs (RSPP). The Foreign Investment Advisory Council (FIAC) was founded by the government to provide investment support.

From 2010 to 2011, an ombudsman was created to help resolve investment disputes. This mechanism also works at the regional level. In addition, development corporations have been created in some territories of Russia (e.g. Kaluga and Samara regions.) However, non-governmental support mechanisms for investment in Russia remain weak and need great improvement.

Investment Practices in the U.S. and Russia

The Russian market, due to its profitability and despite the difficulties in doing business there, remains attractive to foreign investors. Over the past two decades, U.S. companies have started a number of new investment projects in Russia's most competitive sectors.

PepsiCo was the first American company to start doing business in the Soviet Union, entering the Russian market in 1974. The company's first facility opened in Novorossiysk; it now operates nine in Russia. In the past 38 years, PepsiCo has invested more than \$3 billion dollars and created more than 30,000 jobs.

Table 3: Major U.S. Investors in the Russian Economy

Company	Total Investment	Start Date
ExxonMobil	\$ 10 billion	2000
Boeing	\$ 5 billion	1992–2009
Chevron	\$ 4 billion	1994–2011
ConocoPhillips	\$ 4 billion	2004
Coca-Cola	\$ 3 billion	1991–2011
PepsiCo	\$ 3 billion	1974–2011
McDonald's	\$ 1 billion	1990
Mars	\$ 1 billion	1994
Alcoa	\$ 0.76 billion	2005–2010
International Paper	\$ 0.7 billion	1998
General Motors (GM)	\$ 0.35 billion	2006
Procter & Gamble (P&G)	\$ 0.3 billion	1991
Kimberly Clark	\$ 0.15 billion	2010
Caterpillar (CAT)	\$ 0.1 billion	1994/2000–2010
Total	\$ 33.4 billion	1974–2010

In the gas and oil sector, Shell, Conoco-Phillips, ExxonMobil, Chevron and some other companies are making huge investments. Conoco-Phillips, ExxonMobil and Chevron account for approximately 50% of all U.S. direct investment in Russia.

Boeing serves as a good investment example in Russia's aviation industry. Since 1992, the company has invested more than \$5 billion in Russia. It is continuing to develop its investment program and plans to invest \$27 billion over the next 30 years.

In January 2012, McDonald's was operating 310 restaurants in Russia. By comparison, in 2003 there were

74 McDonald's in 23 Russian cities.

Pursuing greater profitability, Subway has become active in the Russian market. By the end of 2011, it had exceeded the number of McDonald's restaurants and had become the largest company in this sector in Russia. By Feb. 1, 2012, Subway had opened 322 restaurants in the country.

Among the main problems facing American investors in Russia are the complexity of planning and the additional expenses connected with their projects. For example, ExxonMobil spent five years resolving numerous geological and legal problems. Also, there is a problem of acquiring property, such as participation in privatization.

Consequently, American companies investing in Russia are afraid of risks and prefer sectors with fast return on their investment and a low degree of complexity. These tend to be industries such as catering, food and the financial sector.

Among U.S. companies in Russia, there are three main types of investment strategies:

- *Limited investment strategy*: flexible approach with minimal risk. This strategy is based on historical trade with and export to Russia (Caterpillar, General Electric)
- *Medium incremental strategy*: recognition of the growing market, usually is focused on services (IBM, AT&T, Big Four accounting)
- *Heavy initial investment strategy*: optimistic view and high risk, struggle for a competitive market (Coca-Cola, PepsiCo, McDonald's, Gillette, as well as oil and gas companies ExxonMobil, Chevron, Texaco.)

With Russia's accession to the WTO, it is possible to expect expansion of mergers and acquisitions. World practice of recent years shows that foreign companies prefer this method of access to foreign markets rather than opening overseas branches.

Table 4: Strategic Approaches of American Investment Companies in Russia

Strategic FDI Typology	Investment Characteristic	Examples
<i>Limited Investment</i> Historical export strategy Toehold strategy	High flexibility, risk avoidance, strong market presence, slow to invest directly High flexibility, risk avoidance, limited initial competition, less developed markets	Caterpillar, General Electric General Motors, Pratt & Whitney
<i>Medium Incremental</i> Reverse incremental strategy Medium incremental strategy	Flexibility, reaction to changes in legal and political environment Flexibility orientation, recognize increasing market, receptivity of localized markets, service-based	IBM AT&T, Chase Manhattan, Big Four accounting
<i>Heavy Initial Investment</i> Voluntary heavy initial strategy Forced heavy initial strategy	Optimistic view, high risk, extensive global competition No choice for global players, no flexibility, high risk, few big global competitors	Coca-Cola, PepsiCo, McDonalds, Gillette ExxonMobil, Chevron, Texaco

Source: adapted from *FDI and Strategic Alliances in Europe*, Robert E. Morgan and Eleri R. Thorpe

Russian companies prefer to invest in U.S. markets mainly by expanding export opportunities. For example, in 2008 the metallurgical company, Severstal, bought the American companies Esmark, WCI Steel and PBS Coal Corporation. Another Russian company, NLMK, acquired for \$3.5 billion the largest manufacturer of tubular products, the John Maneely Company, which includes 11 enterprises in the U.S. and Canada.

Russia's Norilsk Nickel company has acquired a 51% stake in the U.S. company, Stillwater Mining, which is the sole producer of platinum group metals in the United States and the fifth largest producer in the world. Severstal also acquired Rouge Steel, which ranked fifth among U.S. companies in the steel market.

After the acquisition of U.S. assets in 2009, Mechel Bluestone was included in the five world leaders in production of hard-coking coal.

Lukoil owns a network of more than 2,000 gas stations in the U.S., purchased from American companies Getty Petroleum and ConocoPhillips.

The U.S. has a stable economic system with minimal risks to business and a favorable investment climate, which makes it interesting to foreign investors to develop their activities in American markets. Plus, there is a good possibility for mutual benefit and investment cooperation.

Recommendations

1. In order to improve the investment climate in Russia and for wider adoption of international investment dispute resolution mechanisms, it is necessary to accelerate integration of the Russian economy into

the WTO and OECD. It will increase the inflow of foreign capital to Russia, as well as provide additional opportunities for protecting the rights of foreign investors at the international level.

2. Considering the high political and economic risks of investing in Russia, it is recommended that use of the World Bank be increased, including the Multilateral Investment Guarantee Agency (MIGA), with respect to insurance of infrastructure projects and guarantee mechanisms.
3. To improve Russian investment law, it is necessary to increase the transparency of procedures in privatization policy and, more generally, in Russian strategic sectors. When Russia joins the WTO, it also will increase disclosure of information for investors. To enhance investment cooperation between the U.S. and Russia, it is necessary to consider cancelling the Jackson-Vanik amendment.
4. In view of the weakness of a private sector with strong state regulation, the Russian government should support the non-governmental sector in creation of trade associations and develop means to improve communication with foreign investors.
5. In order to diversify investment from the oil and gas sector, it is important to pay attention to the service sectors in Russia, such as telecommunications, transport, trade, insurance and banking.
6. In line with global investment trends, we recommend foreign partners consider the possibility of acquiring existing companies, instead of opening new overseas branches.

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FDI Statistics

Figure 1: Foreign Direct Investment in Russia, bn US\$

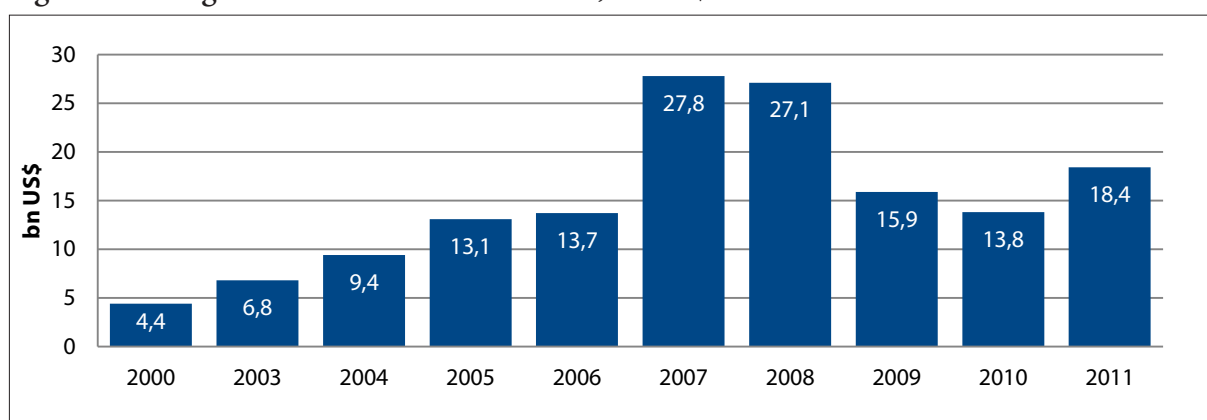
Source: Rosstat, www.gks.ru

Figure 2: Foreign Direct Investment in the USA, bn US\$

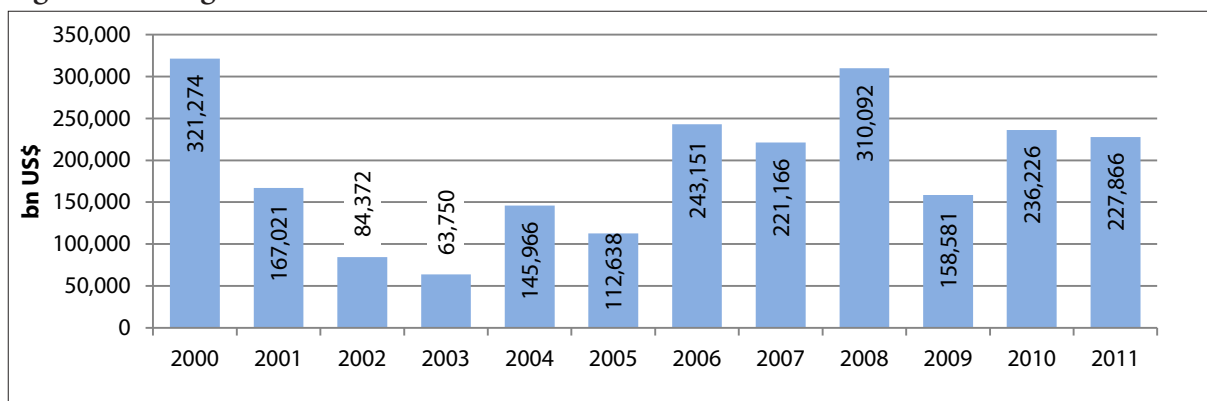
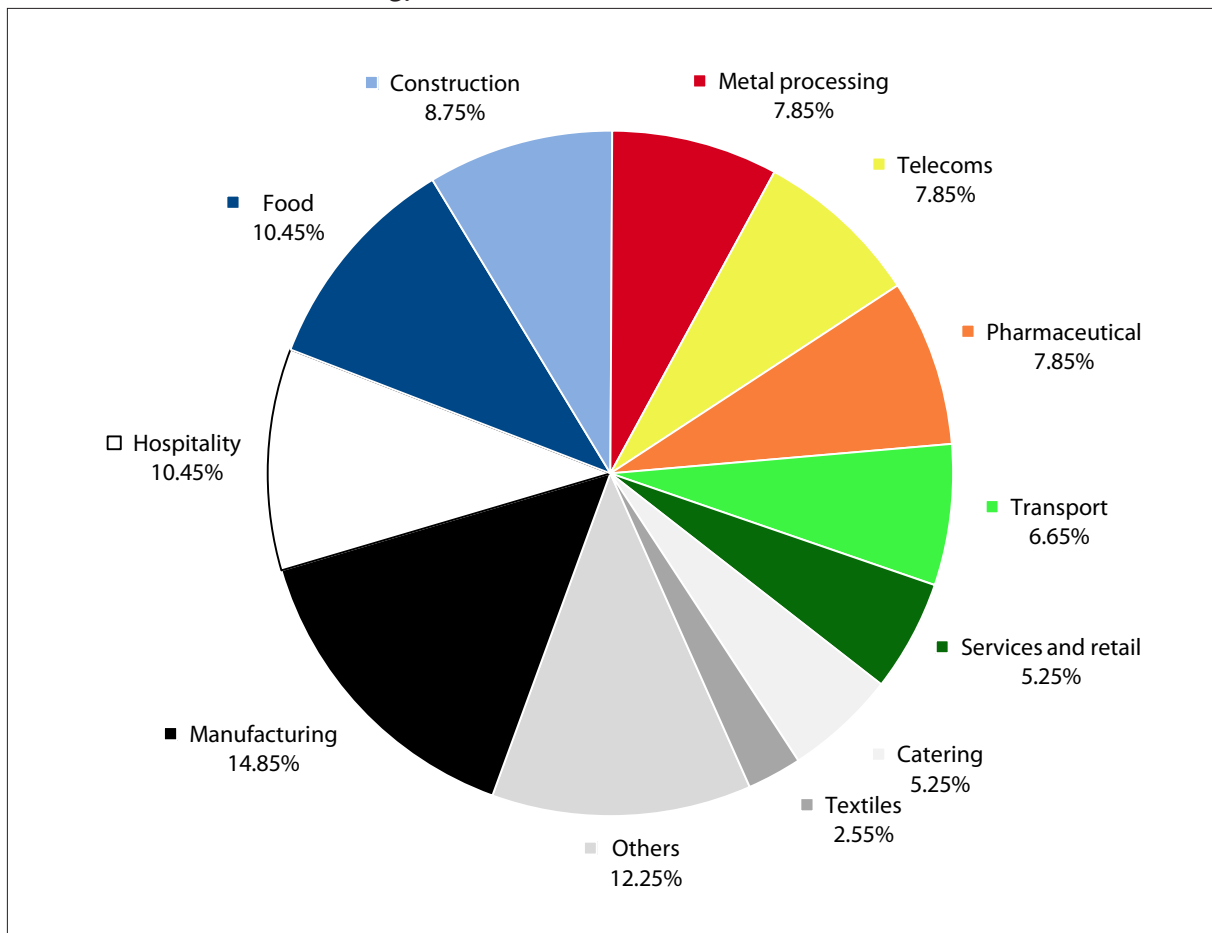
Source: Bureau of Economic Analysis, www.bea.gov

Figure 3: Which Sector of the Russian Economy Would You Be Willing to Invest In, Apart From Fuel and Energy?



Source: Russian Survey, December 2011, www.russian-survey.com

ABOUT THE RUSSIAN ANALYTICAL DIGEST

Editors: Stephen Aris, Matthias Neumann, Robert Ortting, Jeronim Perović, Heiko Pleines, Hans-Henning Schröder, Aglaya Snetkov

The Russian Analytical Digest is a bi-weekly internet publication jointly produced by the Research Centre for East European Studies [Forschungsstelle Osteuropa] at the University of Bremen (www.forschungsstelle.uni-bremen.de), the Center for Security Studies (CSS) at the Swiss Federal Institute of Technology Zurich (ETH Zurich), the Resource Security Institute, the Institute of History at the University of Zurich (<http://www.hist.uzh.ch/>) and the Institute for European, Russian and Eurasian Studies at The George Washington University. It is supported by the German Association for East European Studies (DGO). The Digest draws on contributions to the German-language Russland-Analysen (www.laender-analysen.de/russland), the CSS analytical network on Russia and Eurasia (www.css.ethz.ch/rad), and the Russian Regional Report. The Russian Analytical Digest covers political, economic, and social developments in Russia and its regions, and looks at Russia's role in international relations.

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