

The influence of 2008-2010 financial and economic crises on Russian oil and gas industry

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Abstract - The crisis in the oil and gas industry in Russia has been some (several months to several years) slowing down the implementation production and infrastructure projects, primarily in the gas industry (development of Yamal peninsula, the Shtokman project, etc.) in response to falling demand. However, in the oil and gas industry has been no significant decline in investment in production and transport. The most negative effect of the crisis is a rapid reduction of funding exploration, both through the federal budget, and through companies.

After the recovery of demand and increased investment in oil and gas complex could become the locomotive pulling the economy out of crisis.

Index Terms - financial crisis, the reproduction of the mineral resource, Russian industry, oil and gas sector

I. THE CRISIS

The main reason for the crisis (which began in the U.S. in August 2007) is discrepancy level and nature of development of productive forces (and production) level and nature of development of industrial and financial relations. Features of infringement of a fundamental law of political economy in the modern world economic order emerged, above all, disparities in the sectoral and regional structure of the concentration of production and finance. The main manifestations of these imbalances:

- Significant disparities in skills and labor costs in the world, the differences of individual assessments of leisure and income from employment by country (one of the reasons antiglobalism);
 - Significant regional disparities in production and consumption of energy, especially per capita;
 - Replacement of the countries with an excessive in relation to the industrial potential of the population by factor "labor" of other factors of production;
 - Country and regional disparities in the relative prices of raw materials and energy;
 - Domestic economic, including issuing policy, a number of major countries, primarily the United States;
 - Domestic and international financial and credit policies of developed countries and their credit and financial public and private institutions;
 - High country differentiation in the educational level of the population and significant disparities in the level of R & D and technological level of development achieved by the economies of various countries.
- The essence of the mechanism of the modern crisis affecting primarily the financial markets is as follows. Since 2002, the U.S. economy was sufficient period of rapid growth, followed by a soft monetary policy the Fed, the availability and cheapness of the dollar, low interest rates. At this time the real estate brokers and commercial banks have proposed a new type of mortgage loans - subprime. Borrower did not have to make the first payment and confirm, in any way, their profits. The growth of the real estate market since 2003, largely due to the increase occurred subprime. Banks, in turn, not wanting to leave such risky assets on their balance sheets, combined mortgages of the same risk pool (Collateralized Debt Obligation) and

sold to institutional and other large investors. The owners of CDO, also wanting to diversify risks, buying insurance (Credit Default Swap) from investment banks and insurance companies, promising them permanent payments instead of payments in the event of default on subprime mortgages. The CDO market grew from 158 up to 552 billion dollars over three years (2004-2007), accounting for about 4.6% of U.S. GDP, while the CDS market grew to 62.2 trillion dollars (518% of U.S. GDP). This tremendous growth and such liquidity were caused by the desire of financial institutions as possible to disperse risks, off-balance sheet transactions and the lack of regulation.

Increase the numbers of defaults on subprime securities have led to the disappearance of trust between financial intermediaries and borrowers, not issuing new loans. Prices on real estate market began to fall, devaluing the monetary value of the collateral for loans already made, which led to numerous of margin calls from borrowers and impairment of assets of commercial and investment banks. Impairment of assets and the need to reassess the balance of the market value has led to quarterly losses, when frozen assets in mortgages had to sell at a lower price. The depreciation of the shares (primarily banks and other financial institutions) and panic in the stock market became a characteristic phenomenon of the current crisis. The disappearance of liquidity and compression markets, defaults on the CDO and CDS have led to bankruptcy for many players (Bear Stearns, Lehman Brothers), others were saved by the state (the largest international insurance corporation AIG).

Then panic spread to other credit markets in the U.S. economy. Given that credit expansion has played a key role in stimulating and supporting demand in the real sector, the drop in industrial production was imminent and is measured by several percent of GDP. Reducing domestic consumer demand exacerbated by the decline in demand of investment. In the chain of linkages crisis has spread to the economy of European and Asian countries, mainly exporting to USA, and in many ways through behavioral mechanisms (such as panic attacks, loss of confidence

in financial markets) to other developed markets with a similar structure to the American economy.

In the current crisis triggered the following scheme: Non-payment of debts on mortgages → Bankruptcy Insurance Organizations → Bankruptcy banks → The decline or cessation of lending, including international transactions → Reducing the level of investment (direct and portfolio) → Recession → Reduction employment → Reduction of income → Reduction of demand → Downturn, further reducing investment, output and employment.

II. EFFECT OF CRISIS ON THE ECONOMY AND MAJOR INDUSTRIES RUSSIA INDUSTRY

With the global financial crisis in the world as a whole and in almost all countries involved in international economic relations, there is a decrease in investment activity, slowed growth in demand for final goods and technology, energy, delayed implementation of many infrastructure, energy, production and innovation, especially venture capital, projects.

The Russian economy is open and substantially integrated into the world economy, the ratio of total trade (exports plus imports) to GDP in 2009 was at 45%. The Russian stock market is very dependent on portfolio investment by foreign investment funds. As one of emerging markets, it begins to experience significant fluctuations, the instability and lack of liquidity in the developed financial markets, and the capitalization of companies instantly reduced. Investment attractiveness greatly reduced.

The crisis occurred following items consequences: there was a decline in real GDP and the reduction of industrial production, the devaluation of the ruble, there were decrease of investment (in 2009 to 14%) and employment, has been reduced exports and trade balance, reduced income of the federal budget. However, during the crisis inflation was lower than expected (Table 1). For a number of commodity items decreased prices. Already in early 2009, production in some industries has stabilized,

and the reduction of capitalization in the first quarter reached a zone of resistance (Fig. 1).

Reduction of capitalization of Russian companies amounted in 2008 from 50-60% (communication sector) to 75-85% (banking sector). Fall capitalization steel companies averaged 79%, chemical - 77%, electricity - 75%, oil companies an average of 70%. Since the spring of 2009, a slow recovery in financial markets, mainly due to increase in share prices of oil and gas sector (Fig. 1).

TABLE I

THE MAIN MACROECONOMIC INDICATORS IN RUSSIA IN 2007-2009

Indicators	2007	2008	2009
GDP (constant prices), % to previous year	108,1	105,6	92,1
GDP at current prices, bln rbl	33114	41256	41540
GDP, billion dollars (the exchange rate)	1250	1650	1340
GDP, thousands of U.S. dollars per capita (the exchange rate)	9	12	9
Average official exchange rate of rubles to the U.S. dollar, RUR / USD	25,50	25,00	31,00
Population, mln	142,0	141,9	141,9
Total number of unemployed, end of period, thousands	4607	4804	6173
Number of officially registered unemployed, end of period, thousands	1560	1400	2080
Unemployment rate for economically active population at end of period, %:	6,1	6,3	8,8
GDP / money supply ratio	2,5	3,1	2,9
Cash income / GDP ratio	0,05	0,05	0,06
Cash income / money supply ratio	0,1	0,2	0,2
Inflation, %	111,9	113,3	108,8
Export, bln dol.	352,5	470,8	345,6
Import, bln dol.	199,7	292,5	254,9
Trade balance, bln dol.	152,8	178,3	90,7
Trade balance / GDP Ratio, %	12,2	10,8	6,8
Investment in fixed capital (at current prices, trillion rubles (since 1998 - billion rubles)	6400,0	8606,7	7539,9
Investment / GDP Ratio, %	19,3	20,9	18,2

Industrial production index, %	106,3	102,1	72,6
Agricultural production index, %	103,4	110,8	100,5
Revenues of the federal budget			
billion rubles	7779,1	9258,1	7336,0
% of GDP	23,6	22,4	17,7
Spending of the federal budget			
billion rubles	5983,0	7560,9	9662,2
% of GDP	18,1	18,3	23,3
Surplus of the federal budget			
billion rubles	1796,1	1697,2	-2326,1
% of GDP	5,4	4,1	-5,6
The refinancing rate of the Bank of Russia, end of period, %	10,0	13,0	8,75

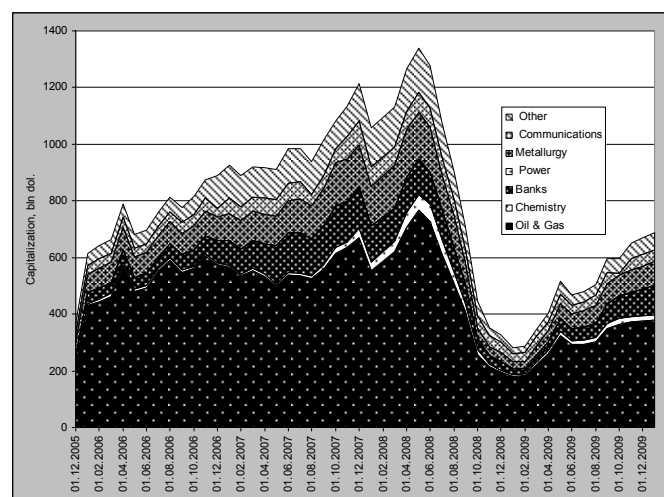


Fig. 1. Capitalization of Russian stock market

Russia - the world's largest producer and exporter of oil and gas as an energy value, and in monetary terms. Gas & Oil (COG) - important element of the Russian economy (which forms in recent years 45-50% of federal budget revenues) and the global energy supply system.

Gas production in Russia exceeds 21% of the global mining, oil and condensate - 12.4%. Gas production, Russia and the U.S. far ahead of nearest competitors, making it 3-7 times greater than Canada, Iran or Algeria. In terms of oil and

condensate by a large margin from the rest of the leaders of Saudi Arabia and Russia.

In 2009, as a result of falling demand for gas, primarily from the countries of the European Union, natural gas production in Russia declined by 12.5% (Fig. 2). In oil a slight increase - by 1.2% (Fig. 3).

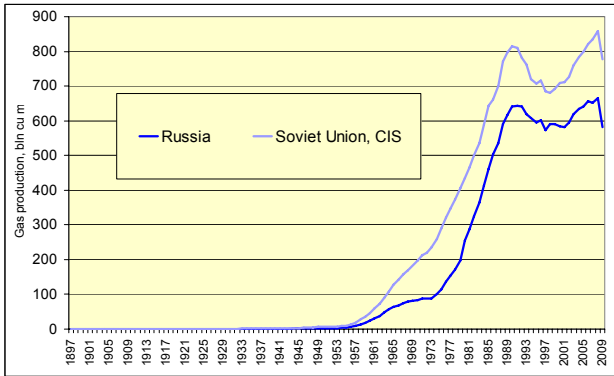


Fig. 2. Russia Gas Production 1897-2009

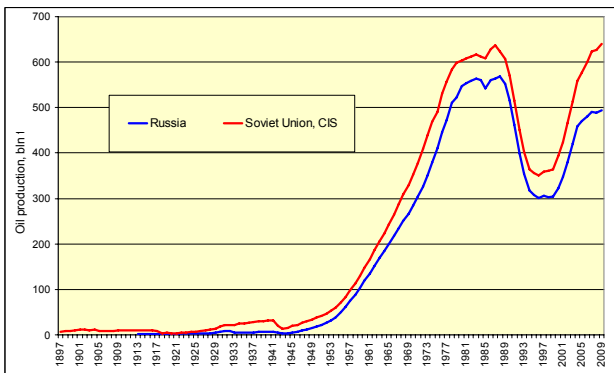


Fig. 3. Russia Oil Production 1897-2009

The challenge for further effective development of Russia's petroleum industry is not increasing exports of crude at any price, and the development of exploration, the creation of systems of deep processing and transport hydrocarbons to the domestic and international markets.

Effect of crisis on Russia oil and gas industry in the following ways, both positive and negative processes:

- Lower prices compared with the peak in oil prices since autumn 2008 and gas in the spring of 2009 (Fig. 4, 5);
- Reducing the rate of growth in demand for oil and gas in Asia, the stagnation in demand in the U.S., recession in Europe;

- Reducing the prices of investment products for the oil and gas industry: metals, pipes and equipment;
- Devaluation of the ruble's value against major world currencies, primarily the dollar and the euro;
- Changes in credit conditions;
- Reducing the capitalization of companies (see Fig. 1);
- Reduction of investment in exploration;
- Deterioration of opportunities to attract funds on financial markets (bond issue).

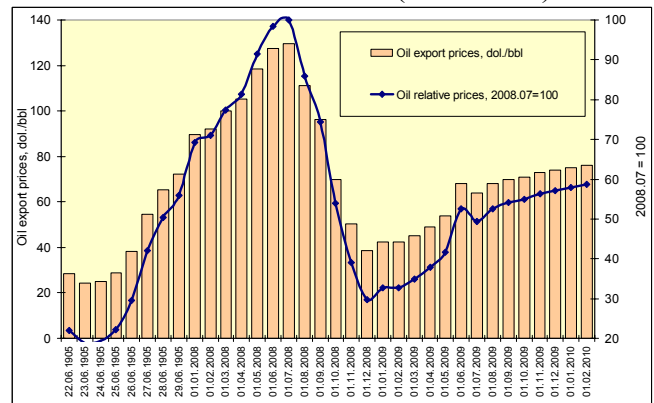


Fig. 4. Oil export prices 2000-2010

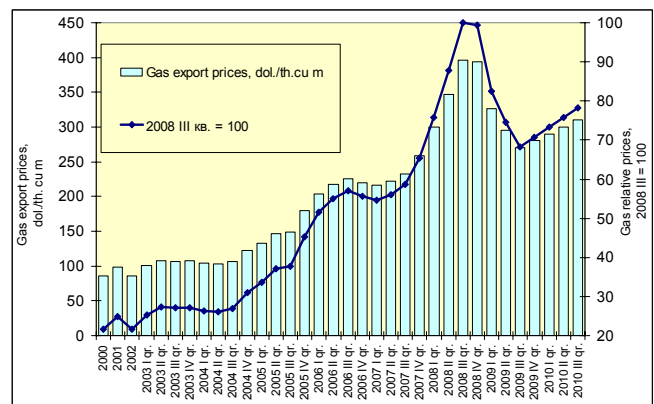


Fig. 5. Gas export prices 2000-2010 гг.

In 2008, the financial situation in Russia oil and gas industry has developed very unevenly. Rising prices for Urals oil in January-July 2008 amounted to \$89.5/bbl to \$129.7/bbl. This provided a significant increase in financial performance of oil companies, foreign exchange inflows into the country, increase tax revenue and special funds (Reserve Fund, the National Welfare Fund), the growth of international reserves. In the second half there was a significant decline in oil prices: by December 2008

they dropped to \$39.2/bbl. Annual (2008) the export price of oil was about \$95/bbl. That significantly exceeds the level of 2007 - \$ 69 / bar. Most oil companies have received a significant increase in total revenues and profits in the first and second quarters of 2008, taking into account the three-month lag in the change of customs duties were substantial losses in the fourth quarter. Since the second half of 2009, international oil prices once again stabilized at a high enough level in the middle range of \$ 60-72 per barrel. That, nevertheless, more than 2 times lower than mid-2008.

Average export prices for gas have peaked in the third quarter of 2008 - about 396 dol./th. cu m, and then successively decreased to 270 dol./th. cu m in the third quarter of 2009. The average gas price in 2009 amounted to 280 dol./th. cu m, which is higher than all previous years except 2008.

Another channel of contagion in the oil and gas industry was the compression of the credit markets and the disappearance of liquidity. Government actions and assistance in this situation were inadequate. In the autumn of 2008 in anticipation of a gradual devaluation of the ruble banks did not lend to the real sector, converting received from the State via VEB, Sberbank and VTB's assets in foreign currency and exporting capital abroad.

All the Russian oil and gas companies have a high level of debt in capital structure (on average 20-25% of assets, the Russian companies only "Surgutneftegas" is not in arrears). A significant portion of debt denominated in foreign currency and has a short-term, up to three years. Inability of the current refinancing and lack of liquidity led to a margin calls on many loans to foreign contractors, which were collateral for the shares of the companies themselves.

The threat of loss of control by residents over Russian assets has caused the need for urgent government intervention in VEB and VTB to assist in refinancing. The uncertainty in the financial and credit markets have led to a decrease in profitability of the industry as a whole, "washout" of current assets and freezing of investments in new projects.

III. EXPLORATION

The main long-term risk caused by the crisis, is to reduce investment in research and exploration. Excess production volumes over the growth of proven reserves pose a danger of stagnation in the long term.

Current status of mineral resources of the HC is characterized by reduction of current proven reserves of oil and gas. Since 1994, growth in oil and gas is substantially less than production. Excess production over the growth of oil reserves amounted to between 1994-2009 years approximately 1.2 billion tons

In 2009, the volume of parametric drilling declined by 41% from 17.1 to 10.1 thousand square meters as compared to 2008. In 2009 more than 30% reduction of seismic prospecting: from 44.8 thousand km in 2008 to 29.6 thousand km in 2009.

In 2009, federal expenditures, the exploration for hydrocarbons (oil and gas) amounted to 8.9 billion rubles. That lowers than in 2008 at 1.2 billion rubles. Expenditure on exploration at the expense of subsoil decreased on average by 30% to 100 billion rubles.

Most of the growth of oil reserves in recent years occurred due to additional exploration of existing, not new discoveries. In 2009, the increase in oil reserves in Russia amounted to about 620 million tons Much of the increase in reserves is due to additional exploration Vankor and adjacent fields in the Krasnoyarsk Territory (Rosneft).

IV. PROSPECTS FOR GLOBAL ECONOMIC AND FINANCIAL CRISIS

As a result of the global financial crisis, Russian oil and gas industry there has been some (several months), slow implementation of production and infrastructure projects, primarily in the gas industry (development of Yamal peninsula, the Shtokman project, etc.). However, in the oil and gas industry has been no significant decline in investment in production and transport. Simultaneously, there was rapid reduction of funding exploration, both through the federal budget, and through companies. International

prices for oil and gas declined from their peak values, but remain at levels higher than the ratios of recent decades. In addition, prices for oil and gas show an upward trend.

After the recovery of demand and investment, oil and gas sector could become the locomotive pulling the economy out of crisis, the formation of significant technological and final demand.

In the modern face of global recession the demand for energy, primarily oil and gas in Asia continues to grow.

Implemented in oil and gas complex of Russia to diversify its exports (projects ESPO-2, ESPO, China, North Stream, South Stream, the BPS-2, Sakhalin-2"), the organization direct access to the largest consumers of oil and solvent gas corresponds to the long-term market developments. Concern is slow technological modernization of production and processing of oil and gas, reducing exploration and research and development.

The transition of the world economy into a phase of recovery and subsequent economic growth started in the first half of 2010 and will be uneven across countries and regions. In the future, to continue the transformation of the regional structure of world GDP, there will be changes in the structure of reserve currencies and financial instruments. It is expected that a weakening of the dollar and euro as a means of International Settlements. In the long term will increase the relative prices of raw materials and energy resources. Will be major changes in the structure, technological level and the degree of scientific support for economic processes.

In these circumstances, improving the efficiency of the Russian economy can be achieved through diversification of its sectoral and regional structures. Necessary openness of the economy to attract foreign direct investment in the technological development of the national economy, creation of new industries. Require an expansion of the state order and public investment in the creation of objects of industrial and transport infrastructure. An increased public and private funding exploration.

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VI. BIOGRAPHIES



Andrey G. Korzhubaev, doctor of economic sciences, professor, academician of Academy of Natural Sciences, Head of Department, Institute of Economics and Industrial Engineering of SB RAS, head of the department of political economy, Novosibirsk State University, General Representative of the SB RAS in cooperation with China.

Areas of research: resources of hydrocarbons; geological and economic evaluation of resources and reserves; forecast oil and gas production; forecast demand and prices on Russian and international oil and gas markets; substantiation methods, directions and routes for transporting oil and gas; structural shifts in the economy; government regulation; regional and corporate development; economic security. Participates in the development of strategic programs of sectoral, regional and corporate development, justification priority investment, social, and export policies.

He is one of the authors of "The Strategy of Economic Development of Siberia" (2001), "Energy Strategy of Russia until 2020" (2003), "Energy Strategy of Russia until 2030" (2009). The author and coauthor of more

than 400 scientific publications, including more than 30 monographs ("Transformation of the system of state regulation of the U.S. economy: Theory and Practice", 2000, "Oil and gas complex of Russia in conditions of transformation of the international energy supply system", 2007, etc.).

Laureate of the Russian Federation in the field of science and technology (2003) and laureate of Kosygin Prize in science, technology and organization of production (2003). For a great contribution to the development of the extractive industry of Russia was awarded interdisciplinary sign "Miner's glory" (2008).