

R. I. Nigmatulin<sup>1</sup>SCIENCE, ECONOMIC WARFARE, AND WHAT CAN BE DONE<sup>2</sup>

Scientists, especially those of the Russian Academy of Sciences – the state academy – must maintain contact with and have an impact on all levels of the society, parties, and, last but not least, the government. Therefore, for the time being, scientists must stop discussing the eternal Russian question “*Who is to be blamed?*” They should withhold their anger and communicate only in scientific language, drawing on the example of the great academician Ivan Pavlov. During the revolutionary chaos of 1918, he spoke of the problems of the *Russian scientific mind*. And in the 1930s he found a way to make unrelenting but scientifically worded points about the state of the country to its leaders in his letters. He managed to retain his influence on the authorities and stop the persecution of dozens of victims of repressions: scientists, representatives of the Orthodox Church, and their relatives.

A total of about 450 million people participated in World War II on the side of the Soviet Union with a population of about 200 million people and its allies: the United States, Canada (200 million) and Britain (50 million). Fewer people – about 350 million – fought and worked against them: Germany (50 million) along with the occupied continental Europe (300 million). But now, in an intensifying economic war, our country with a population of only 150 million people is confronted by Europe, the U.S., Canada and Japan, where 950 million people live and work; that is, the ally outnumbers us by more than 6 times. And these are the countries and peoples whose technological advances we have been using for several decades.

In this context of an imminent threat to the stability of our country and the world order, the role of domestic science, including academic and university science, must be put forward. The answer to the question “What can be done?” must be backed up with a scientific component.

The scientists need to focus on solving major problems during 2022 and beyond. Moreover, it is necessary to decide *what* and *how* to discuss, and it is very important to *find ways to discuss* the solutions proposed by scientists in the society and power structures.

#### First estimates of consequences of the economic war

In 2021, Russia’s exports amounted to about 493 billion dollars, 90% of its structure belonging to raw or semi-raw

materials. Most of the export proceeds will *persist* for now, especially since the prices for our raw materials have risen. European leaders understand that without our hydrocarbons and other raw materials their countries will suffer an economic downturn and incomes of their population will decrease, which will lead to problems at the elections. Therefore, our export proceeds, together with the remaining gold and foreign exchange reserves, will help support the ruble exchange rate.

Incidentally, the recent events have confirmed that *extractable raw materials are a more reliable resource* than excessive and inflating foreign exchange reserves, which, as it turned out, can be arrested [2].

It is necessary to study the possibility and consequences of limiting our exports of raw materials and semi-finished products, depending on the removal of restrictions on the imported components that we need. At the same time, we should not exaggerate the scale of the difficulties experienced by the U.S. and Europe because of the sanctions war.

In the United States, even after gasoline prices have more than doubled, it costs only \$6 per gallon, or about \$1.5 per liter, which corresponds to 45 rubles per liter by *purchasing power parity*.<sup>3</sup> It is cheaper than ours. They can cope with the inflation, which has already reached 7%.

In Europe, the sanctions war with Russia will create more problems. Higher prices for gas, petroleum products and other raw materials will lead to a more serious drop in GDP and more substantial inflation.

The main problem of the export/import constituent in our economy is that because of the sanctions, it is impossible to buy the imported *components* necessary for our production with dollars and euros. The threat of *unemployment* arises. Without the necessary components which are used in most industries we will not be able to produce consumer goods that contribute to GDP.

Not only our entire industry and air transport, but also agriculture depends on imports of parts and components from Europe, the United States, and China. Without components, we won’t have the machines, that we haven’t been making on our own for quite a while. And for agriculture, imported seeds, pedigree material, mixed fodder additives, veterinary drugs, etc. are of vital importance.

#### Inefficiency of the economic bloc

The central and very serious problem that prevents us from overcoming the aggravated economic challenges is the grievous long-term inefficiency of the government’s socio-economic bloc, heads of corporations and large enterprises, which comprise almost *no specialists*, i.e. engineers. For 30 years managers, lawyers, and financiers, instead of helping the specialists, have acted ineffectively and even destructively.

We have *the lowest return on investment* in fixed capital (more than 1.5 times less than in Europe and the United States); we have lost *technological independence*. We must

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<sup>2</sup> The report is based on the paper: Нигматулин Р. И. Академический взгляд на техно-экономическую блокаду // Независимая газета : [сайт]. 2022. 26 апр. URL: [https://www.ng.ru/nauka/2022-04-26/9\\_8427\\_blockade.html](https://www.ng.ru/nauka/2022-04-26/9_8427_blockade.html) (date of address: 08.06.2022).

<sup>3</sup> According to the economic theory, the comparison of domestic prices and GDP in different countries should be based on the purchasing power parity, not on the exchange rate of the Central Bank.

carefully look out for *specialists*, identify those who have creative experience, and urgently promote them to leadership positions, otherwise we have no prospect of developing productive forces.

We need to significantly improve the training and re-training of *engineers* and skilled workers, not only in universities and colleges, but also in factories and plants. We need to raise the salaries of university and college *professors*. We need to respect the culture of academic freedom, professorial and institutional autonomy. We need to make the prestige and salary of a scientist and a teacher higher than the prestige and salary of an official. The society has to learn to appreciate and respect science and education.

However, the responsible Ministry is now *unable* to implement the program for restoring and raising higher education and science. It does not have qualified and experienced specialists.

Let me remind the names of prominent scientists and statesmen who led the departments responsible for education and science. The Ministry of Education and the Higher Attestation Commission of the USSR were headed by correspondent members of the Academy of Sciences V. P. Yelyutin, G. A. Yagodin, academicians I. F. Obraztsov, Ye. I. Shemyakin. Academicians V. A. Kirillin, G. I. Marchuk, and N. P. Laverov chaired the State Committee on Science and Technology. Compare them with those who hold similar positions now. It feels bitter, sad and even funny.

### Economy and productive forces

Apart from assessing the options for replacing imported components produced in unfriendly countries, the government should cooperate with scientific institutions to assess the condition and development of Russia's *raw material base*,<sup>1</sup> which is virtually our only economic trump card, at least for the next decade.

We need to develop the methods of indicative strategic *planning* for key enterprises of the production sector, providing for effective *benefits* (land, tax, customs, administrative) to stimulate fulfillment of target indicators.

We need to urgently develop measures to limit "terrorizing" of businesses by supervisory agencies (law enforcement, environmental, firefighters, etc.) and to declare amnesty for technical specialists who are imprisoned or under investigation for "economic" articles.

It is time to work on the transition to the financing of the state budget by emission of the Central Bank of Russia to provide the economy with the necessary liquidity. We should explore the possibility of settlements in gold, both cash and non-cash option.

Along with mobilization of state structures, we should do our best to develop *small* and *medium-sized* businesses. In the West, they account for 60% of GDP, but in our country only for 20%. In our economy, patronage and pressure from government agencies have become *excessive* again. We should expand the practice of reducing *tax*, such as VAT, for small and medium-sized businesses, as well as for businesses engaged in design, engineering, programming, science, teaching technical subjects, and hi-tech industries. For such businesses, we should offer *targeted credits* at a rate of no more than 5% per annum.

<sup>1</sup> RAS has materials on this topic prepared under the leadership of Academician N. S. Bortnikov and correspondent member of the RAS V. L. Yakovlev.

The government has already begun the work toward these goals, as has been prompted by scientists for quite a while [1; 2]. However, much more vigorous and urgent measures are needed. They are listed below.

1. First and foremost, we need to achieve an urgent reduction in *domestic prices* for fuel, electricity and raw materials. In shaping the domestic prices, analyzing their socio-economic significance, and their comparison with prices and GDP in other countries, we should completely abandon dollar orientation at the rate of the Central Bank ( $\$_{CB}$ ), adopted due to sheer ignorance in government circles. It is time to understand that according to the economic science, when comparing domestic prices in different countries, one should be guided by the exchange rate of the dollar based on the *purchasing power parity* ( $\$_{PPP}$ ).

The  $\$_{PPP}$  rate established according to the prices of the most common consumer goods and services in different countries, is currently equal to 25–30 rubles. It is quite stable and principally different from the  $\$_{CB}$  bank rate, which jumped from 75 to 105 rubles after the announcement of sanctions, and was later established by the Central Bank at about 70 rubles with restrictions on buying dollars.

In almost all countries with predominant commodity export which they earn dollars from, the bank rate dollar is several times more expensive than the PPP rate dollar: this protects the national currency, prevents flight of capital from the country and helps make production less dependent on imports.

The bank rate at which currencies are exchanged determines *only* the ratio between exports (26% of GDP) and imports (20% of GDP). To compare the socio-economic significance of the rest (74%) of our GDP and the GDP of other countries, people's incomes and prices of various goods and services produced domestically, in particular the "public" goods (food, utilities, transportation, fuel, electricity), we should focus on the rate according to *PPP*, taking into account the share of imported components in the price of goods.<sup>2</sup>

The price of "public" goods on the domestic market should consist of the *domestic cost* in rubles, state allocations (which should be reduced by raw materials and semi-finished products manufactured inside our country) and a moderate profit.

Reduction of the price of oil, petroleum products, gas and electricity by reducing state allocations and profits will be to our advantage as an investment in the development of productive forces, in particular in road and air transport. The state budget losses should be compensated by an increase in state allocations from the export of oil and petroleum products, because its volume exceeds their domestic consumption by more than three times. This also applies to the export of timber, mineral fertilizers, chemicals, metals, and other raw and semi-finished goods.

2. We have to ensure that the main "production" ministries and large state corporations have their own *backbone design and research institutes*. Their content should be multiplied, and the status of their employees should

<sup>2</sup> Ruble prices in Russia, when converted into dollars through dividing them by its high bank rate, which is also mostly increasing, look very low compared to prices in the U.S. and Europe. This "allows" the proponents of the government to claim that our price level is quite low and that the population is generally well off, despite the low wages and pensions of most of the working people. If we follow this "logic," any devaluation of the ruble leads to a fall in Russian prices in dollars, which makes no sense for the Russian population in terms of social and economic well-being.

become more prestigious than that of “managers.” Without research and design institutes, it is impossible to overcome the voluntarism of “managers” and their inability to create.

3. Urgently abolish federal *procurement procedures* (see Federal Law No. 223-FZ of July 18, 2011 “On the procurement of goods, works and services by specific types of legal entities”). Procurement should be the responsibility of the CEO and shareholders of the company.

4. Cancel or at least significantly reduce *taxation of low-wage workers* with a nontaxable minimum wage of 1,000 \$<sub>PPP</sub> per month (about 30,000 rubles). Compensate the loss of the state budget by raising taxes on high incomes, for example, above 16,000 \$<sub>PPP</sub> per month (about 500 thousand rubles), and expensive property.

5. Particular focus should be made on providing *jobs for young people*. There is an urgent need to increase the scholarships for undergraduate and especially postgraduate students, so that they engage in studies and research instead of going out to protests. Students and graduates of universities should be offered contracts with companies, to make them interested in working in Russia and not in foreign firms.

6. All financial injections into the population, in particular those mentioned above and those leading to an increase in consumer demand, must be *balanced* by an increase in the bulk of consumer goods, including their imports from China, the CIS countries, Turkey, Iran and other states not hostile to us. Otherwise, all injections will be absorbed by inflation.

#### What the Academy of Sciences must do

The following activities should be considered and discussed.

1. The Academy must *self-reform*. The main task is to involve the active part of the doctoral staff, institute directors, and RAS professors in real work, at least in the departments, including *election* of new RAS members. The credibility of the Academy of Sciences and its members has declined consider-

ably. We need to strengthen the Academy’s reliance on the scientific community.

2. After the reorganization, *it is necessary to raise the question of returning the institutes under control of the RAS*, at least in terms of appointment of directors, approval of state assignments, distribution of basic funding, and evaluation of activities of the institutes. That *could* be achieved. It is time to realize that the officials of the Ministry of Education and Science are incapable of performing these functions.

3. Then we should raise the question of recreating the *Russian Academy of Medical Sciences* and the *Russian Academy of Agricultural Sciences* with their own institutes, in relation to which they should perform the same functions as the RAS. The unity of the three academies should be ensured within the framework of the Association of Russian Academies of Sciences.

4. It is necessary to restore *academic journals*, the Russian system of *dissertation defense* and the *Higher Attestation Commission*, in which scientists, not bureaucrats, play a decisive role.

5. The socio-economic goals proclaimed for 10 years are being postponed, and they will not be achieved unless scientists develop a scientific and theoretical basis for overcoming the state economic, technological, social, and humanitarian problems.

The most important task for the leadership of the Russian Academy of Sciences is *organization of such developments* and their *incorporation* into the public consciousness and minds of the authorities.

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