CHAPTER 5

Pricing in the Context of Structural Modernization in Post-COVID Economy

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Introduction

The transition from a planned economy to a free market one was rather painful in Russia. The use of a shock tactic led to a production downturn, hyperinflation, the slowdown of technological progress, and a decrease in living standards. The destruction of the pre-existing pricing system and orientation to international market prices hampered economic development and imposed a commodity-based model of development upon an industrially developing country.

The price liberalization carried out in Russia in combination with privatization brought into existence oligopoly structures in commodity sectors, and the linking of fuel and energy prices to a global level resulted in their year-by-year growth and, as a result, growing profits, thus predetermining the transfer of capital to the commodity sectors and the rise of a commodity-based model in the country. That slowed down

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the growth of the non-commodity economy, reduced innovation-based development rates and labor productivity.

The COVID-19 crisis affecting all countries worldwide has demonstrated the vulnerability of the country's development based on raw materials. One should also take into account the need to embrace energy-saving technologies due to the worsening environmental situation. These circumstances increase the regulating role of the state in the more efficient use of cost-related tools, especially prices, in order to promote the transfer of capital to energy-saving technologies on an innovative basis.

Russia's existing fuel and energy pricing system linked to international market prices results in year-by-year price growth, impedes the restructuring of the economy and gradual transition from the commodity-based model of development to an industrial one on an innovative basis. The damper mechanism being used in the fuel and energy sector and linked to international market prices (netback) is not aimed at price reduction. In this regard, this article, through analyzing the pricing system in a planned economy and in developed countries, substantiates the need to adopt, for the purposes of domestic pricing during the period of economic restructuring, a pricing model taking into account actual costs, the capital intensity of products, and a profit margin in combination with other economic levers and incentives.

Methodology

In addition to statistical and analytical methods, this study uses such methods for scientific research as ascent from the abstract to the concrete. The cost-based pricing method including cost reimbursement and normal profit earning has been analyzed as part of the research. Pricing alternatives according to the "base product plus economic effect" principle, as well as market-based pricing methods, have been reviewed as well. Despite the planned nature of pricing in the USSR, such researchers as V. R. Boyev, V. Ye. Yesipov, G. R. Romanchenko, E. A. Sagaidak, etc., actively studied the problem of price substantiation based on a profit margin with respect to both products and sectors. Furthermore, the author has reviewed L. Erhard's approaches toward pricing during the recovery of the German economy, the methodological approaches of P. Heyne regarding the consideration of marginal costs, the position of D. Harper who demonstrated that "the cost plus method is a convenient and expedient pricing tool" and M. Bailey's theory that two key

forms of protection against price increase are available to any society, i.e., "competition and antitrust legislation".

Results

Stable socioeconomic development largely depends on the availability of a well-functioning model a priori intended to continuously improve the structure of the economy on the basis of up-to-date innovative technologies. In this regard, the role of prices and pricing methodology being used in the development model is high. An efficiently operating system of prices supports not only economic but also social growth, and this is a condition to social stability in any society. And it is not by accident that L. Erhard, the creator of the German economic wonder (1956), wrote, "the essential goal of a social market economy may only be deemed fully achieved when prices decrease concurrently with growing productivity, thus ensuring an effective increase in wages". An efficient pricing policy, all other factors being the same, ensures the transfer of capital in favor of those sectors, which support scientific and technological progress and the country's leading position in the global innovation hierarchy. This is the way to shape a progressive economic structure. It is commonly known that the level of international prices for fuel and energy products started to grow significantly since the beginning of the twenty-first century. Ranking second in terms of gas output and third in terms of crude oil production globally, Russian producers started to benefit from this situation in an aggressive manner. Between 2000 and 2018, crude oil production increased from 313 million tons to 523 million tons (by 1.7 times) and natural gas production rose, over the same period, from 555 billion cu. m to 726 cu. m (calculated by the author on the basis of the Russian Statistical Bulletin, 2001, 2019), or by 1.3 times, and the output of other natural resources increased as well. This trend has demanded considerable investments and adversely affected the condition of non-commodity sectors, their modernization, and their innovation status.

An analysis of fixed capital investment trends in various segments of business activities has demonstrated that investments in the extraction of mineral resources grew year by year between 2000 and 2018 and increased by 15.1 times (including by 9.5 times as concerns petroleum production). The percentage of investments in the extraction of natural resources, together with pipeline transportation costs, reached 28.2% of the total investments in fixed assets in 2018. For comparison purposes,

investments in the manufacture of machinery and equipment and in the manufacture of computers, electronic and optical devices accounted for 0.3 and 0.4%, respectively, in 2018. Furthermore, investments in the manufacture of machinery and equipment dropped from 77.2 billion rubles to 62.5 billion rubles between 2014 and 2018, and investments in the manufacture of computers and electronic devices decreased from 73.9 billion rubles (2015) to 68.3 billion rubles in 2018 (calculated by the author on the basis of the Russian Statistical Bulletin, 2019). Therefore, the favorable international prices of commodities, while supporting profit growth, have turned the investment strategy of the country toward a commodity-based model of development.

The current situation characterized by the COVID-19 crisis, sanctions and declining demand and prices for fuel and energy products very strongly requires to diversify the Russian economy, to modify its structure, to sell more deeply processed products rather than raw materials, to speed up modernization of non-commodity sectors on an innovative basis and to accelerate innovation-driven restructuring of the economy. The improvement of pricing methods combined with the use of a system of economic levers and incentives can play a significant role in accelerating the restructuring of the Russian economy on the basis of up-to-date technology and innovations. The priorities of economic development, including those applying at a regional level, were reviewed by Osipov et al. (2020) and Yankovskaya et al. (2020).

Price liberalization and its economic consequences pursuant to the RSFSR President's Decree No. 297, dated December 03, 1991, "On Measures to Liberalize Prices" began when 90% of retail prices and 80% of wholesale prices were at once exempted from state regulation. At the same time, the Decree limited maximum price growth with respect to a number of socially significant products (bread, milk, etc.). But those limitations were lifted since March 1992 as well. It should be noted that the theoretically proper decision to liberalize prices was neither well-conceived in practical terms nor well-prepared methodologically.

The liberalization was not synchronized with monetary policy or with the demand potential of legal entities or individuals. As demand dropped, companies lost their working capital. Their large-scale privatization and money emission resulted, within a short period, in inflation at a rate of thousands percent. In its turn, that led to the depreciation of individual earnings and savings. The share of poor households rose from

33.6 to 45.9% between 1992 and 1995. The results of that liberalization primarily benefited (due to the absence of any price controls) the monopolies arising from shock privatization that increased their profits owing to dramatic price growth accompanied by demand reduction. The Russian commodity monopolies, which gradually expanded their weight and connections, have so far managed to retain their influence on pricing policy, and the pricing system in the commodity sectors, as a result, is linked to international market prices. When evaluating the situation of the early 1990s from today's perspective, one understands that the price liberalization plan was synchronized with the shock privatization that allowed people close to the government and the banking sector to buy the national wealth of the country at low prices.

The liberalization process was launched in January 1992. According to official statistics, producer price indices in 1992 grew by 99.6 times for crude oil, 144.6 time for gasoline, 152.3 times for diesel fuel, 59.9 times for electricity, 56.1 times for coal, and 13.2 times for natural gas (Source: calculated by the author on the basis of the Russian Statistical Bulletin, 2001). Before 1992, the history of Russia had never seen such a drastic leap of prices for oil and products of its refining. The end of state regulation and transition to free pricing in retail and wholesale trade triggered an avalanche-like price growth not only in non-commodity sectors, but also across the whole system of utility rates. Due to the lack of effective control (the State Committee for Pricing was dissolved) natural monopolists raised their prices each year during the following 30-year period. Pricing methods were developed by the monopolies themselves, who knew well how to set "fair prices".

The chain of incessant cost augmentation in all sectors of the Russian economy is based on the growth of prices for crude oil and petroleum products, coal, metals, gas and electric power. Price growth of this kind automatically results in higher utility rates and higher expenses of households for all types of utilities (Table 5.1). In addition, as a rule, prices and rates in the country grow irrespective of international price fluctuations. Since 2000, as is commonly known, international prices for crude oil and petroleum products, as well as the profits of Russian monopolies, have significantly increased, but prices and utility rates in the country have been demonstrating a consistent upward trend.

The real incomes of the population are known to have dropped since 2014, and this process accelerates because of the pandemic. This is due not only to the growth of consumer prices, but also to the growth of

Table 5.1 The movement of utility rates for households in Russia

Type of utility	*Years*			*2010 on 2000, times*	*2018 on 2010, times*
	2000	*2010*	*2018*		
Housing charge per 1 sq. m, RUB	1.3	14.3	31.1	11.0	2.2
Electric power per 1 kWh, RUB	0.39	2.32	3.87	5.9	1.7
Pipeline gas (per 1 person monthly), RUB	5.6	43.8	75.6	7.8	1.7
Heating per 1 sq. m, RUB	1.6	2.9	13.0	1.8	4.5
Water supply, per 1 person monthly, RUB	15.8	25.9	130.0	1.6	5.0

Note Judging by the data in the table, utility charges have been steadily grown since 2000
Source Calculated by the author on the basis of Russian Statistical Bulletin, 2008, 2019

utility rates. Between 2010 and 2018, according to our estimates, nominal salaries increased by 271 times, pensions by 1.8; at the same time, as shown by the table, the housing charge per 1 sq. m increased by 2.2 times, heating charges by 4.5 times, water charges by 5 times and power and gas charges by 1.7 over the relevant period. This trend aggravates social stratification. The assets ratio describing income differentiation between the highest-income 10% of the population and the lowest-income 10% demonstrates steady growth between 2000 and 2018 (from 0.397 to 0.413) (Source: calculated by the author on the basis of the Russian Statistical Bulletin, 2007, 2019). It should be noted that the continuing growth of prices and utility rates is the result of the oligopoly that has developed in the country, both in commodity sectors and in retail chains.

Due to the high margin of fuel and energy sales, the existing commodity-based model of development promotes the attraction of investments into this sector. "Whoever holds more 'money votes' exerts stronger influence on what goods will be produced". As long as the production of fuel and energy products remains profitable due to the growth of volumes and prices, monopolies will be extracting raw materials, despite any geological difficulties or environmental consequences. It is this factor that, as Samuelson emphasizes, allows us to understand "how the need for any goods expressed through demand interacts with

the costs of such goods (products or merchandise or services) reflected in supply… this is the most important tool to understand the economic world we live in" (Samuelson & Nordhaus, 2009).

In connection with the COVID-19 crisis and environmental issues, there is the urgent need to speed up the development of alternative energy sources. For Russia, the present situation means that there is no alternative to gradual structural changes in its development model, modernization and innovative development, as well as actual formation of a social market model based on a mixed economy and a public–private partnership mechanism. And the pricing system in combination with state regulation can play a significant role in accelerating the restructuring process. It should be noted that pricing methodology is largely interrelated with the level of development of productive forces and production relations, the operating model of the society and the goals that this model is meant to achieve.

Discussions

Methodological Approaches Toward Pricing in Developed Countries

J. M. Keynes once raised a toast to economists who "make civilization possible". The factors defining the potential of civilization include, inter alia, the problem of prices, their understanding and their functions, the utilization of which shapes the pace of development and the structure of production by encouraging scientific and technological progress that continuously makes its adjustments to the economic way of thinking. And, as emphasized in a monograph under a similar title, "The Economic Way of Thinking", "such adjustments often refuted or modified the conclusions made by economists in the past. The same process will probably continue in the future as well" (Heyne, 2002).

When discussing the role of prices, Paul Heyne divides them into designated prices (i.e., the ones set by sellers) and those, which are determined by demand and supply. Supply depends on costs and they are taken into account by any price searcher who sets his own prices, whereas price takers accept what the market sets. One should "draw a distinction between price searchers and price takers. Price takers are forced to accept the price dictated by the market. The substitutes available to buyers are so good that any attempt to raise the price or to modify the terms of sale would leave a seller with no customers at all. On the other side, a price seeker can sell various quantities of his product at various prices, so he should

search for the most favorable price" (Heyne, 2002). In setting their prices, such sellers (price searchers) take into account marginal costs and marginal revenue.

Whatever the pricing model, the base price is derived from the current costs incurred in the production and sale of a product which comprise product cost. Such costs are defined as a monetary expression of the value of any economic resources being spent in performing certain acts by an economic actor. The monetary expression of the current costs incurred in the production and sale of a product represents its cost. In this regard, it is important to take into account all costs. The full costs include both transformation and transaction ones. Transformation costs influence product cost through the technology that is used, whereas any expenses related to economic exchange are characterized as transaction expenses (North, 1996).

Costs are the most important factor to be taken into account for pricing purposes. In practice, a reverse relationship is also possible. "It often occurs that, vice versa, prices determine costs … price setting based on full costs, or 'cost plus', is a convenient and expedient pricing method" (Harper, 1966). This is the case when a company first determines at what price its product would be in demand. In principle, however, the level of costs represents such a threshold that any evaluation of product below it would lead its producer to bankruptcy. From the pricing perspective, "costs should be most appropriately viewed as a limit for price setting". This is one of the most common approaches to price setting, which relies on a "product cost plus profit margin" scheme subject to differentiation across a product range. And this is a fundamentally important aspect for domestic pricing in Russia where they not only fail to take into account costs in full, but also fail to publish or control them, whereas the domestic prices of fuel and energy products are linked to the international ones.

In their policy, U.S. companies rely on the priority of their own considerations and adhere to the following basic principles. Let us identify some of them:

- "never cut prices for any product components below the total amount of their production costs;
- continuously seek to maintain prices below the competitors' level;
- set prices so that the company could receive a predetermined percentage of return on investments;

– use prices to protect your market from the entry of competitors" (Harper, 1966).

In a monopoly environment, pricing relies on a standard methodology based on the maximization of total profits and minimization of costs. In principle, price management under monopoly conditions is intended solely to increase profits. In mathematics, this technique is called the "gradient method of maximization". In this regard, if a monopolist were aware of the long-term trend of demand, he could set a higher price level from the beginning, but he seeks to do so all the time so that his wishes loosely correlate with the actual capabilities of consumers. In 1934, A. Lerner proposed an index describing the level of monopoly power that is represented by the firm's markup over its marginal cost. The relevant formula is: $L = (P - MC):P$, where P is price and MC is marginal cost.

Demand is not only a requirement but also the ability to pay for any goods to be purchased. But one should also take into account the quantity of market demand that the consumer can purchase and whose characteristics depend on various factors, including the function of demand in relation to price. The inverse relationship between demand and price is called the law of demand. The law of demand is known to be the market economy principle according to which the level of demand for a good is inversely correlated with the price of the good by increasing when the price per unit of the good decreases and decreasing when it grows. Demand will be determined by the maximum ability to pay for a given product. Supply arises when a product offered to the market can be sold. In this regard, the higher the price of the product, the more sources offer it (for any given conditions). This relationship expresses the law of demand.

Theoretically, prices begin to grow when demand exceeds supply. Following the prices, utility rates begin to repeat the price trend, but the pace of their growth is somewhat lower that price growth, since it is hampered by the low real incomes of the population. If the rates grow excessively, the population responds by payment defaults and social protests. Given the growth of prices for fuel and energy, utilities and other tangible resources, industrial enterprises are forced to raise their own prices. As a result, the demand for, and competitiveness of, their products decline.

Whereas monopoly is from time to time subject to state regulation, oligopoly looks like competition among several allegedly independent

companies, which, as a rule, enter into an agreement. In an oligopoly environment, prices will be derived from costs per product unit and appropriate markup percentages according to the cost plus scheme. But the costs per product unit largely depend on volumes and, consequently, represent a variable parameter, so it is advisable to look at average costs.

According to Schumpeter (1997) and Galbraith (1973), large oligopoly firms with market power are necessary in order to achieve fast scientific and technological progress. It is claimed that contemporary research and development activities associated with the creation of new products and production processes are incredibly expensive. Therefore, only large oligopoly firms are able to finance extensive research and development (R&D) activities.

The issue of whether oligopoly and R&D are interrelated is subject to discussion and largely depends on the specific model of development. For instance, a study of the 61 most important inventions appeared in the United States between 1880 and 1965 revealed that more than half of them were made by independent inventors in no way associated with the industrial research laboratories of joint stock companies. Such significant achievements as air conditioning, power steering, ball pen, cellophane, jet engine, insulin, xerography, helicopter and catalytic oil cracking were born in the minds of independent inventors. Other inventions of no less importance were made by small- or medium-sized companies. According to that study, about 2/3 (40 of 61) of the key inventions of the preceding century were made by independent inventors or resulted from the research activities of rather small firms (Galbraith, 1973; Schumpeter, 1997). These findings do not deny that large companies made essential discoveries as well. But it should be kept in mind that R&D activities in a number of industries related to national security are carried out at the expense of government funds. For the purpose of evaluating the actual contribution of monopolies and oligopolies to R&D, one should also take into consideration their continuous desire to raise their profits, including by means of the price factor when balancing demand and supply.

Developed countries, including the United States, were strongly affected by the adverse influence of monopoly-related price growth in the 1870s and 1880s, when their industrial basis was under formation, and eventually put together a system to contain that influence. This includes competition and antitrust legislation. One should add to this the

growth of labor productivity that ensures lower cost through scientific and technological progress.

Legal Regulation of Monopoly Pricing

As emphasized by Bailey (1958), who prepared materials for the U.S. Congress, "The society has two key forms to protect itself against long-term overpricing of products: competition, either potential or actual, on one hand, and antitrust legislation, on the other hand".

To this end, both antitrust legislation and public regulatory authorities were used to control "economic behavior". In 1890, the Sherman Antitrust Act was adopted. Its main substance was briefly described in its two key sections. In section 1: "Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations, is declared to be illegal…" In section 2: "Every person who shall monopolize, or attempt to monopolize, or combine or conspire with any other person or persons, to monopolize any part of the trade or commerce among the several States, or with foreign nations, shall be deemed guilty of a felony".[1]

In accordance with the Act, its violation entails criminal responsibility, company liquidation, fines or triple compensation of damages. Initial legal cases, however, demonstrated that some items in the Sherman Act had to be clarified, and the Clayton Act was promulgated in 1914 in order to enhance and elaborate the Sherman Act. For instance, it banned price discrimination of buyers, unless justified by a difference in costs. It also prohibited purchasing stock in competing corporations to the extent that it could lessen competition, and a number of other adjustments to the previously adopted Sherman Act were made. At the same time, an act establishing the Federal Trade Commission, the body in charge of enforcing the antitrust laws, investigation and prosecution of criminal cases, was approved in 1914.

The history of developing the system of antitrust measures in order to promote a competitive environment (which comprises 130 years since the Sherman Law was adopted) has seen much debate and a lot of successful and unsuccessful decisions, but, judging by the condition of the U.S. economy, the system basically works and the United States is the global

[1] Sherman Act. https://www.law.cornell.edu/uscode/text/15/1.

leader in science and technology boasting a well-developed economy and high living standards.

The more than a hundred years' struggle for the development of a competitive economy has secured a significant growth of all socioeconomic indicators and allowed the avoidance of significant losses. For example, the calculations carried out by A. Harberger (1954) with respect to the monopoly-related losses of the U.S. GNP for certain industries accounting for 45% of the total output in the U.S. processing sector "demonstrated, when extrapolated to the entire industrial sector, that annual losses between 1924 and 1928 had amounted to about 6% of the GNP. A calculation for 1988 using this methodology results in a figure of $4.8 billion, or not more than $20 per capita annually".

Antitrust legislation is intended to create a competitive environment. The competitive environment in the area of trade in, for instance, crude oil and petroleum products in the United States ensures a more flexible approach toward the relationship of international and domestic prices for fuel and energy products. As is commonly known, the development of the U.S. industry in a number of sectors, including oil, was, at its early stage, characterized by monopoly trends in terms of production, processing, pricing and profits. For example, the Standard Oil cartel controlled 80–85% of the refining capacity in the United States. After its unbundling pursuant to a court order, the cartel's successors control 25–30% of the sector's output and compete among each other on the market.

Antitrust activities in the United States contribute to a more robust approach toward the relationship of international and domestic prices. For instance, according to the statistics agency of the U.S. Department of Energy, established by the Congress in 1977 (Energy Information Administration, or "EIA"[2]), the average retail price of gasoline in the United States is rather closely interrelated with crude oil prices. It should be noted that the EIA's mission is to disseminate statistical data in a manner independent from political considerations, as well as forecasts and analyses, in order to supply information on economic policy to fast-responding markets as well as to raise public awareness regarding the energy sector and its role in the economy and the environment.

In the crisis year of 2008, for example, the gasoline price per gallon increased from $3.04 to $4.06, or by 33.5%, between January and July.

[2] https://www.eia.gov/.

Starting in August 2008, when the crisis aggravated and crude oil prices slumped, the gasoline price in the United States began to decrease: $3.77 per gallon in August, $3.7 per gallon in September, $3.05 per gallon in October, and $2.14 per gallon in November. Therefore, the gasoline price per gallon dropped from $4.06 to $2.14 over the second half of 2008, i.e., by $1.92 or 47.3% (Source: calculated by the author on the basis of World Bank and IMF data). Whereas the United States achieved an almost twofold gasoline price decrease, thus maintaining a rather high demand for gasoline and competitiveness of its products, Russia saw a seasonal winter price decrease (2008) within the range of several percent points, which just slightly influenced the fuel price that accounts for a considerable percentage in the cost structure of many goods and utility charges.

The U.S. Supreme Court has jurisdiction over any specific cases related to excessive prices and margins being charged by monopolies. The Tariff Commission takes action against companies driving up their margins and requests them to return to the area of reasonability and to respect case law, referring to a judgment of 1923, as well as a judgment of 1944 regarding margin setting with respect to natural gas. The 1923 case concerned a water company. The company complained that its profit margin was too low (6%) so that it failed to support the reproduction process. After careful consideration, the court ordered a margin of 8%. In a case against a gas company in 1944, it was adjudicated that a profit margin of 6.5%, rather than the 8% set by the company, would be just and reasonable. Furthermore, the court ruled that the profit margin should be at a level allowing capital attraction on acceptable terms and enabling the company to earn profits for self-financing within a reasonable range.[3]

Each U.S. state has its own governor-appointed tariff commission with a small staff that monitors the situation. Given that oil prices increase and decrease on a month-by-month basis, the commission allows companies to regulate gasoline and electricity prices and rates. Such prices and rates should be so that to cover the company's costs and secure a small margin for operational development. All major deviations from this pattern result in lawsuits and large penalties. In addition to the effective control of gasoline prices, water, gas and electricity rates are regulated in a similar manner.

[3] FPC v. Hope Nat. Gas Co., 320 U.S. 591 (1944). Source: https://supreme.justia.com/cases/federal/us/320/591/.

The setting of such prices and rates and, accordingly, profit margins is regulated first by the reasonability of each company's management and then by the tariff commission. All changes in such prices and rates will be made after a special hearing intended to test whether the relevant request for rate adjustment is justified. This process is subject to due regard for the interests of consumers, the company and the public and a reasonable approach toward rate setting.

Therefore, it can be noted that any decrease in gasoline prices in the United States clearly correlates with the movement of international crude oil prices. The level of prices and rates is supervised by the tariff commission in each state that severely thwart any monopoly-related growth of prices and rates by means of large penalties and license withdrawal. Any serious conflicts are to be considered by the U.S. Supreme Court, which, as a rule, protects the interests of consumers and adjusts the margin taking into account prior case law based on the principle of reasonability and morality.

The Contemporary Principles of Fuel and Energy Pricing in Russia

At the current stage of development, despite the declining prices and sales and hydrocarbon products, the fuel and energy sector (FES) in Russia remains to be a stable pillar of the Russian economy. Russia possesses the whole range of fuel and energy resources allowing it not only to meet the needs of all sectors and areas in full, but also to be a leader in the exportation of gas, crude oil, and products of their processing. The products of the FES, including the oil industry, are an element of the production process in most industries that can either contribute to their development or make them lose competitiveness due to the steady growth of energy prices and utility rates. However, the state also influences this price growth by raising excise duties and taxes with respect to petroleum products in order to replenish its budget (Osipov, 2016).

The existing pricing system in the Russian oil sector is of oligopolistic nature. It is dominated by vertically integrated oil companies (VIOCs), which include the whole chain from production to refining at their own refineries and to sales of petroleum products at their own gas stations. Such VIOCs as Rosneft, Lukoil, Gazpromneft, Surgutneftegaz, etc., produce more than 80% of crude oil and refine more than 75% of the production at their refineries. Independent companies accounting for not more than 5% of the total production are forced to "purchase petroleum

products on a wholesale market at a price that includes the margin of VIOCs or traders".[4] This determines the monopoly position of VIOCs on the petroleum product market and in wholesale and retail pricing. Given the digitalization of the economy, as Inozemtsev (2021) correctly notes, one should expect that vertically integrated oil companies will play a more active role in the making of not only economic, but also political decisions.

VIOCs clearly tend to monopolize the market through their production and refining activities and through expanding their retail operations, and this, as a result, restricts the access of independent players to retail sales and reduces their number. The monopolization of oil production and refining by major VIOCs manifests itself most conspicuously in pricing on the wholesale market. In most regions, VIOCs also dominate retail sales of fuel and energy products at gas stations. The hierarchy of VIOCs' priorities with respect to sales of products from their refineries is typically as follows: export deliveries, supplies to their group companies, and sales to independent market players.

In this regard, independent companies are mostly unable to purchase products directly from refineries, because VIOCs create intermediary vehicles that make their products more expensive; moreover, in a number of cases they impose conditions prohibiting retail fuel sales in those regions where the relevant VIOC's gas stations operate. This results in higher costs and, consequently, higher prices. In addition, in order to minimize their tax burden, major VIOCs refine the crude oil they produce at their own refineries, thus saving on taxes.

An attempt to establish understandable legal rules in fuel and energy prices was made by the Federal Antimonopoly Service (FAS) back in 2012. Then two draft laws, "On Market Pricing of Crude Oil and Petroleum Products in the RF" and "On Trade in Crude Oil and Petroleum Products in the RF", were prepared. In particular, the Russian FAS proposed to introduce into legislation the following formula of a "fair" price with respect to crude oil or petroleum products for the domestic wholesale market: net revenue from oil sales minus export duty and transportation costs. According to this scheme, the domestic price of a certain product would be linked to the price of a comparable type of fuel in Northwest Europe and Mediterranean countries. In this regard, the

[4] United States Information Agency.

"fair" domestic price would be equal to the foreign (essentially, global) price minus transportation costs and customs charges. In addition, it was proposed to set quotas for mandatory sale of petroleum products. Quotas of this kind with respect to gasoline, for instance, had been introduced at the St. Petersburg Exchange in the amount of 10% of the total domestic sales, but they were reduced to 5% in 2020 due to the pandemic.

An explanatory note to the draft Federal Law "On Market Pricing of Crude Oil and Petroleum Products in the RF" stressed that "A stable situation on the domestic market for petroleum products occurs when well-balanced relationships, in terms of prices and volumes, develop along the following chain: refinery – small-batch wholesale trade – retail trade. The prices of the wholesale segment (refineries) that are set by the refinery owners predetermine the situation on the small-batch wholesale and retail markets: the price of the "first sale" from a refinery accounts for more than 75% of the retail price of motor fuels. Due to this, an unbiased competitive consumer price could only be achieved if the terms and conditions of petroleum product supplies at the wholesale stage are non-discriminative and representative price indicators are available with respect to crude oil and petroleum products".[5] The drafts did not become law. The pressure of the commodity lobby was apparently too strong (this is my assessment).

The monopolization of the oil market by vertically integrated companies (which are predominantly private) allows them to deliver their crude oil to refineries at selling prices and then to supply their own gas stations at cost, so that they are subsequently able to influence pricing policy and to create a more preferential environment for their refineries and gas stations as compared to competitors. They sell petroleum products to independent companies at a price that includes their own costs and margin, that is why such independent companies have lower profitability.

The system within which the costs and prices of oil production and refined products are formed is made up by production, transportation, refining and sales at gas stations. Theoretically, this would involve classical accumulation of costs and prices along the chain of added value from production to sales to end users. But this approach toward final price formation is not respected in Russia. So what is the situation with FES product pricing in one of the petroleum-richest countries? Throughout

[5] http://www.consultant.ru/cons/cgi/online.cgi?req=doc&base=PRJ&n=99767#06262786582765179.

the 30-year period of the "robust" development of a market economy in the country, fuels and lubricants have been ever more expensive and utility rates for electricity, gas, heat, etc., have been rising on a year-by-year basis. Let us discuss the scheme of cost and price formation along the chain: production, transportation, processing (at a refinery) and sale (at a gas station).

In the petroleum product price formation chain, refineries hold a central place, being the only enterprises in the domestic market which purchase and process crude oil. Refineries acquire crude oil via several channels, including commodity exchanges where futures contracts (with clearly fixed prices and delivery dates) are offered; refineries also purchase crude oil by entering into long-term contracts with oil-producing companies. A further alternative for oil purchasing is offered by special trading platforms/hubs; their advantage is that delivery will be effected within two business days after a transaction is executed.

If imported crude oil arrives at a refinery, its price is formed by the cost of the imported oil, transportation costs and the enterprise's refining expenses, and the refinery will, in its turn, take into account its own costs and adds a certain profit margin, both elements being included in the refinery's selling price.

Where any domestically produced crude oil goes to a refinery, the following alternatives are possible:

1. If any crude oil produced by a VIOC is processed at its own refineries, then it will be sold to gas stations practically at cost;
2. If an independent refinery purchases crude oil in Russia, it will take into account the prevailing global price (netback) and subtract transportation costs and export duty, but there will be a significant addition in the form of excise tax.

The Russian domestic price of gasoline and diesel fuel is determined on the basis of such prices as prevail on leading exchanges. In this regard, the international price level, transportation costs, and the amount of export duty will be taken into consideration. The costs shaping the final price of gasoline and other petroleum products are influenced to a greater extent by taxes (accounting for as much as 65%), annual inflation, excise taxes, the costs of gas stations and a profit margin, and this all is to be covered by the end consumer.

The completion of the tax maneuver that is scheduled for 2024 will result in the elimination of export duties and an increase in the rate of mineral extraction tax (MET). But the elimination of export duties creates conditions promoting an increase in international prices, thus making domestic sales more preferable than exportation and, therefore, encouraging oil companies to raise final domestic prices. As the tax maneuver is completed, refineries lose their budget subsidies (calculated as the difference between the export duties on crude oil and petroleum products, respectively). Most refineries face profitability problems and see a solution in raising their selling prices that would trigger a chain reaction in retail sales. Therefore, the issue of price growth limitation becomes relevant not only during the current crisis when real incomes decline, but also for the post-crisis period.

Given that FES products are linked solely to global price trends, a growing netback would also drive up retail prices for gasoline and diesel fuel. But there is a limitation in Russia related to the fact that real incomes decline. And this factor hampers a dramatic increase in retail prices. In a "market' environment, the government introduces a reverse excise tax that impedes a price hike but do not stop price growth due to inflation, excise taxes, and other taxes.

The reverse excise tax formation scheme includes setting a target level of oil purchases by refineries on the domestic market as percentage of the total volume of oil produced; furthermore, an additional excise tax accrues to refineries that will be set off against tax payments. In order to receive such a reverse excise tax, a refinery must bring the production of Euro 5 gasoline to at least 10% of its total production or invest 60 billion rubles in modernization during a number of years.

The key component of the reverse excise tax is a damper (the difference between the ruble netback for gasoline and a notional domestic price) to be set by the government annually. If the netback exceeds the domestic price, then 68% of the difference with respect to gasoline and 65% of the difference with respect to diesel fuel will be reimbursed by the state through the damper (tax reduction). If the damper is negative, a reverse process will occur so that any incentives for maintaining a stable price level on the market will be lost. The damper regulations include a clause to the effect that no damper will accrue if current domestic prices exceed the notional price by 10% or more. This encourages players to maintain their prices at the level so designated, thus allowing the avoidance of a negative damper. In addition, as experts believe, damper additions to the reverse

excise tax with respect to the different types of fuel—ordinary gasoline and diesel fuel—are accounted for together and this often results in overstated prices even where it could be avoided. For example, a negative damper for gasoline merges a positive damper for diesel fuel, this results in additional taxes payable by the refinery, and the refinery is forced to pass such additional taxes on to consumers.

The notional price deserves particular attention. The Russian government sets the notional domestic price of gasoline and diesel fuel. In 2020, the notional price per ton of gasoline was 53,600 rubles and the netback for gasoline was 53,770 rubles. It is not completely clear what methods were used to substantiate the notional price. Given that it is valid for a year and subject to indexation by 5% in each subsequent year, it is not flexible enough to respond to current fluctuations. The crisis caused by the COVID-19 pandemic in early 2020 collapsed the price and production of oil, gas, and petroleum products. The notional price failed to respond to the dramatic market changes and prices at Russian gas stations remained at the same level, although most countries worldwide were reducing their prices at gas stations following the downward trend of international prices. The mechanism for setting such notional prices needs to be improved, primarily by introducing higher transparency and a more flexible approach toward their setting that would take into account the potential of the domestic market and global pricing conditions. This situation requires to use, at least during the period of post-pandemic economic revitalization, the practice of regulatory sandboxes (Salikhov, 2020) in order to determine a possible institutional framework for utilizing a damper mechanism in such circumstances.

Conclusions

1. The strategy of commodity-based development (failing to enhance innovation activities and ensure genuine competition) chosen by Russia has led the country to the slowdown of scientific and technological progress (except for the defense sector), its lagging behind of developed countries in terms of labor productivity growth, and the differentiation of its population in terms of living standards. At the same time, the COVID-19 crisis associated with the deterioration of all socioeconomic indicators, especially in the FES, has brought about major changes in the approaches toward further development

of the country. The Russian government has prepared its "Consolidated Strategy for the Development of the Processing Sector in the Russian Federation until 2024 and for the Period Ending in 2035" (approved by a government order dated June 6, 2020).[6] In essence, it is an attempt of policy modification aimed at structural changes in the economy to the extent that the government relies upon the processing sector for the purpose of developing the national economy. It is proposed to generate demand by implementing national projects. Quite serious problems arise with respect to innovative technologies, and the concession model used by the country during its first industrialization can be utilized to speed up innovation.

2. In order to develop a pricing methodology and a system of prices supporting structural shifts in the economy, it is required to set up an institutional center which would, in addition to the methodology and system of prices, maintain control over their change. It should be noted that attention was paid to institutional forms of pricing in Russia since the initial years of the Soviet period. For instance, the Pricing Commission was established as early as December 1917 as an instrumentality of the Presidium of the Supreme Economic Council; the Committee of Fixed Prices was formed a year later; and the Committee for Prices of the People's Commissariat of Finance was set up in 1921. Until 1969, the country maintained its pricing management system. In 1969, the State Pricing Committee of the Council of Ministers was established as part of government restructuring, which was renamed in 1979 as the USSR State Committee for Prices and dissolved in 1991 due to the economic reform, elimination of the planned economy system, and transition to market relations. A price liberalization era began and, as a result, prices started to grow in an uncontrollable manner in the absence of genuine competition and antimonopoly legislation.

Given the current COVID-19 crisis and the need to carry out economic restructuring on the basis of modernization and innovative development, Russia needs a coordinating structure capable of pursuing

[6] Government Order No. 1512, dated June 6, 2020, "Consolidated Strategy for the Development of the Processing Sector in the Russian Federation until 2024 and for the Period Ending in 2035".

a well-balanced, long-term pricing policy, including pricing methodology and effective control—a task that the Federal Antimonopoly Service is still unable to cope with. It should be kept in mind that almost all developed countries have government entities of this kind in various forms and at various levels.

3. The idea of synchronization between domestic fuel and energy prices and international ones, proposed by large companies and entrenched in Russian business practice, has resulted in continuous price growth in the leading sectors of the country and in all related industries that restricts competitiveness, slows down innovation-based modernization, and, consequently, contains the growth of labor productivity. The existing situation in the socioeconomic development of Russia requires, given the COVID-19 crisis, to strengthen the role of the state in regulating economic levers and incentives (prices, taxes, credits, etc.) in order to gradually turn the national economy to a contemporary industrial path. Let us discuss, in the same order as they were proposed, alternative approaches toward regulation of FES product pricing that favor potential price decrease and the attraction of investments for the purpose of economic restructuring.

Given that VIOCs, with their complete cycle of production and distribution, are highly profitable, enjoy a large number of tax benefits, and pay very substantial dividends, it is possible to introduce a unified balance sheet for them in order to maintain a stable level of retail prices for at least three years in coordination with a three-year budget. Such a stable price level without any inflation adjustment during three years would ensure a decrease in utility rates and transportation costs, and that would influence the consumer market as well. Gradually, an environment favoring the development of non-commodity industries would emerge and there would become possible to reduce retail prices for the most energy-intensive products in the food industry. This is one of the alternatives that could enable us to lower prices for the products of natural monopolies which make a major contribution to the steady growth of costs in any adjacent sectors. Let us discuss other alternatives as well, such as a damper mechanism for pricing.

4. An economically reasonable pricing system demonstrates the maturity of an operating economic mechanism. The system of prices for natural resources, including fuel, energy, and some other commodities, that exists in today's Russia is primarily driven by international prices whose fluctuations are difficult to predict. It should be noted that the methodology according to which international prices are calculated is inconsistent with their market understanding based on the relationship of demand and supply. OPEC, an organization including 15 countries (but not Russia, which is an invited party), plays a dominating role in establishing international oil prices. The OPEC countries account for more than 50% of the total oil output and control the prices prevailing on commodity exchanges that represent a futures variety of the financial market.

As regards the exportation of FES products, it is appropriate to take into account international prices, but orientation to their level in the domestic economy, given the economic situation of individuals and legal entities in Russia, leads to growing costs, non-competitive products, and lower living standards. Moreover, due to the fact that domestic prices are linked to international ones, prices for petroleum products during the COVID-19 crisis decrease following the downward trend of crude oil prices in many countries, but not in Russia. The fact of the matter is that Russia uses a damper mechanism that allows oil monopolies to maintain a high profit margin and the state to replenish its budget. The population and the non-commodity sector remain to be unprotected (this is my assessment). Formally, however, the damper is intended to protect the population against the growth of prices (but it does not provide for their reduction and poorly controls their growth). The damper is conceived as a compensating rather than incentivizing mechanism. It can be briefly described as follows: when international prices for FES products grow, oil companies seek to expand their exports by reducing supply on the domestic market, thus triggering price growth. In order to prevent this, the state applies compensatory payments.

In conclusion, it should be noted that prices for fuel resources in Russia are in fact regulated by the state using the damper mechanism rather than determined by the level of costs or the relationship between demand and supply as is the case with market prices. When developed countries find themselves in a similar situation, they impose protective customs duties

that regulate the interests of both the state and oil companies. The (flexible) use of the taxation system (MET, VAT, excise taxes) in combination with differentiated customs duties could significantly simplify the pricing mechanism with respect to gasoline and diesel fuel and make it more understandable for both producers and consumers. In addition, of course, there is the need for competition among gas stations belonging to various oil companies, and the state should control their location in order to rule out any monopoly.

The existing damper mechanism supports the dependence of price fluctuations at gas stations upon the export price of oil; theoretically, it inhibits both increase and, in fact, decrease of retails prices at gas stations. The latter, however, deprives our country of its competitive advantage (as a major oil producer) which could help it reduce production costs in all areas related to the FES; this fact affects the issues of economic restructuring.

Changing the approach toward pricing on the domestic market could make it possible to carry out structural modernization of the Russian economy on an innovative basis and to ensure the growth of real incomes of the population. The damper mechanism linked to international prices should be abandoned, because its use primarily leads to price growth together with all resulting socioeconomic consequences. Any approach toward domestic price setting should take into account actual costs and, with due regard for the capital intensity of products, determine a target profit margin. In this regard, the state should use a system of economic levers and incentives in order to create approximately equal conditions for production, including the establishment of reserve and annuity funds in order to mitigate any price fluctuations caused by natural environmental conditions.

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