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The review “Russian Economy. Trends and Outlooks” has been published by the Gaidar Institute since 1991. This is the 44th issue. This publication provides a detailed analysis of main trends in Russian economy, global trends in social and economic development. The paper contains 5 big sections that highlight different aspects of Russia’s economic development, which allow to monitor all angles of ongoing events over a prolonged period: the monetary and budget spheres; financial markets and institutions; the real sector; social sphere; institutional changes. The paper employs a huge mass of statistical data that forms the basis of original computation and numerous charts confirming the conclusions.

Reviewer:

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Sectoral dynamics of industrial production in Russia in 2022 ¹

In 2022, The trend component of the industrial production index exhibited growth, which was provided by both the extractive sector and the manufacturing industry. In the first case, owing to high prices and growth of external demand for energy resources. In the second case, due to the production of goods replacing foreign brands, which curtailed their activities on the Russian market after the launch of the SMO, as well as due to the growth of demand for intermediate products for the state defense order.

For correct interpretation of the existing trends in separate sectors, it is necessary to decompose their output into components: calendar, seasonal, irregular and trend component;² the interpretation of the latter is of substantial interest. The Gaidar Institute experts made seasonal adjustment of the series of indices of all the branches of industrial production for 2003—2022 and singled out the trend component³ on the basis of the current statistics published by Rosstat on the indices of production in industrial sectors of the economy.

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2 “Trend component” is a well-established term used in the literature, but it should be noted that this component is not a “trend” in the strict sense used in econometrics when analyzing time series: in this case it is the residual from the separation of calendar, seasonal and irregular components from the series. “Trend component” is incorrect to use for time series forecasting (for most of the indexes of industrial production it is non-stationary in levels (and stationary in differences), but it can be used for interpretation of short-term dynamics and its comparison with the events that took place.

3 The trend component was extracted with the Demetra package using the X12-ARIMA procedure.

The results of series processing for the index of industrial production as a whole are shown in Fig. 2. Fig. 3 presents the results for the aggregated indices of the extractive and manufacturing sectors, as well as the production and distribution of electricity, gas and water. For the rest of the series, the decomposition results are presented in Table 14.

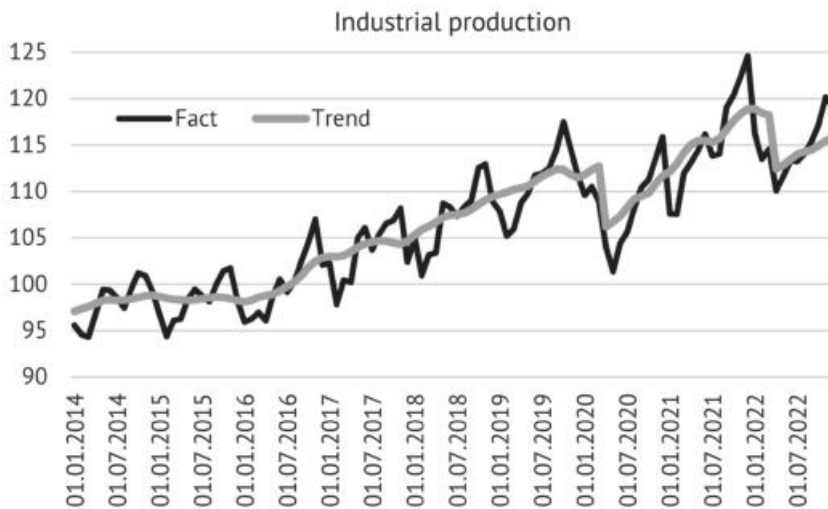
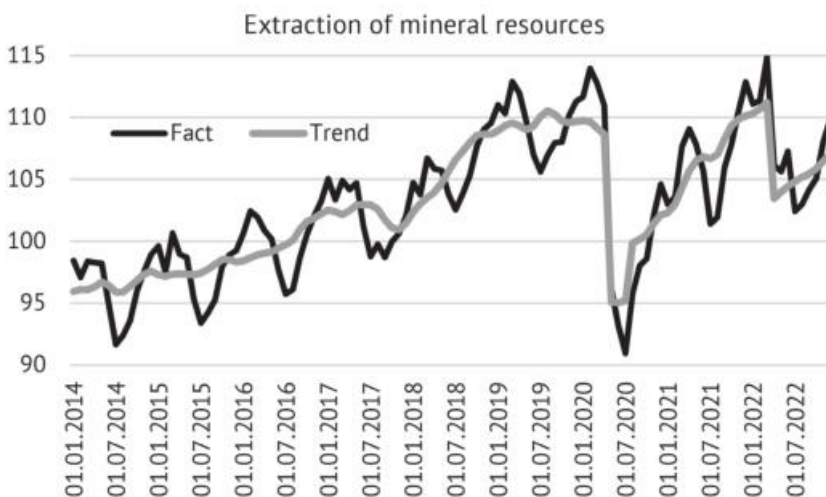


Fig. 2. Dynamics of the industrial production index in 2014–2022 (Actual data and trend component), in % to 2016 annual average

Sources: Rosstat, own calculations.



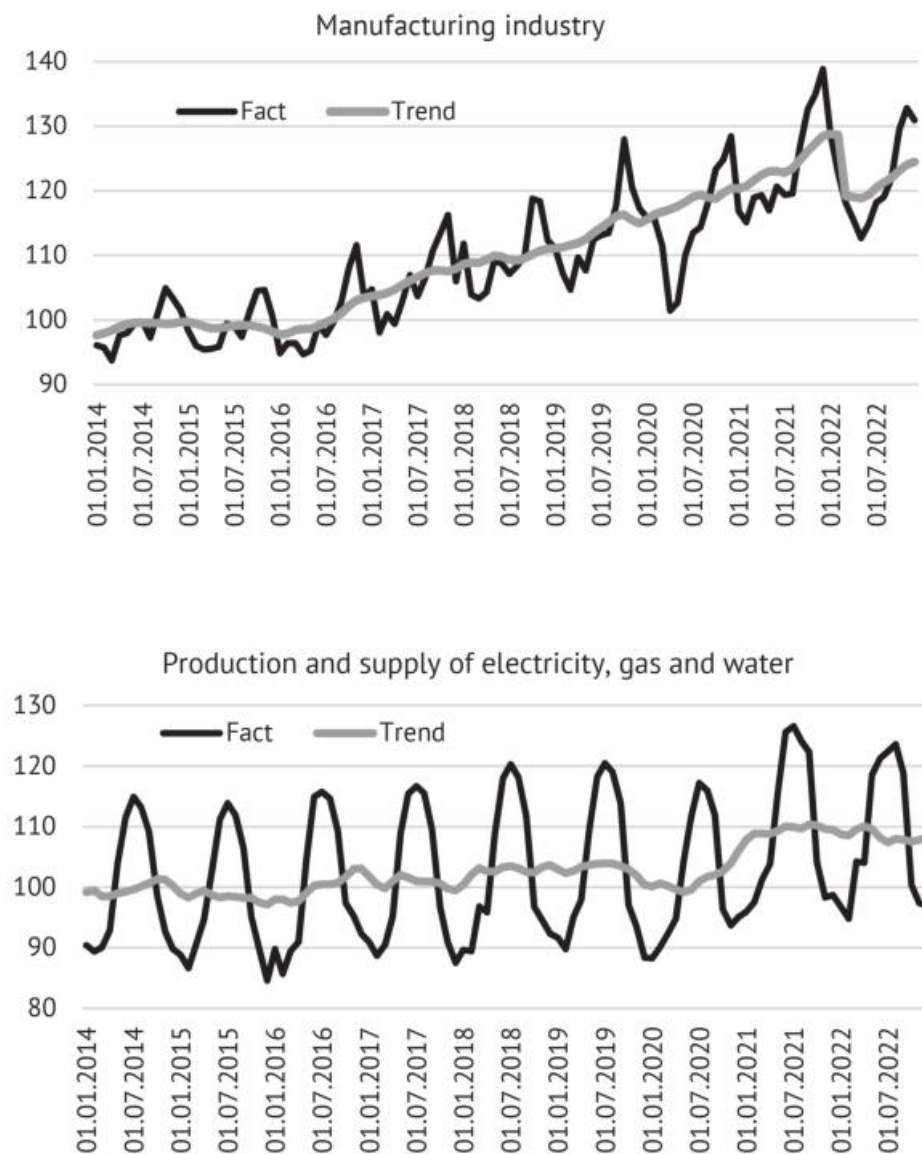


Fig. 3. The dynamics of production indexes by industry in 2014–2022 (Actual data and trend component), in % to 2016 annual average

Sources: Rosstat, own calculations.

3.2.1. Dynamics of the industrial production index in Q1

According to the results of Q1 2022, the trend component of the industrial production index showed about zero growth rates. The main contribution was made by the extraction of fuel and energy minerals due to the growth in oil, gas and coal production. The stabilizing factor in the oil industry was the OPEC+¹ deal, which was extended until the end of April 2022. In the gas industry, growth in the period under review was ensured by supplies to China via the Power of Siberia pipeline (including on the back of the reduction of LNG exports to China from the USA and Australia) and domestic demand (economic recovery after the pandemic). The growth in coal production is associated with increased demand in Europe and Asia-Pacific markets, which was facilitated by higher natural gas prices, making coal-fired generation competitive. The growth in demand from Asian countries has not been fully realized due to the existing infrastructural constraints in the Far East, which do not allow the entire additional volume of coal to be transported to Asia and Pacific markets by rail. In March, the existing infrastructural constraints were supplemented by competition with other cargoes, the transportation of which was reoriented to the eastern direction following the imposition of sanctions on supplies of Russian products against the backdrop of the events in Ukraine.

The trend component of the manufacturing sector in Q1 2022 showed a slow decline, the main positive contribution to the dynamics continued, as in H2 2021:

- production of food, textile and leather products. The shift of consumer demand to a lower price segment (as a rule, represented by Russian-made products) was supplemented by the factor of rush demand due to the departure from Russia and the temporary shutdown of some foreign companies triggered by the launch of SMO;
- production of chemical products mainly due to increased domestic and foreign demand for pharmaceuticals, medical materials, and fertilizers;
- machine-building — mainly owing to the growth of agricultural machinery. High world prices on agricultural products in 2021 provided additional funds to their producers, who had the opportunity to invest these funds in the renewal of the machine park, which increased the demand for exports of Russian agricultural equipment and, accordingly, its production volumes. Besides, consumers intensified purchases of equipment due to the apprehension of its appreciation caused by the expected increase in utilization fees, exchange rate fluctuations and increase in prices for metals and polymers observed on the world and domestic markets in 2021. Since March 2022, the restructuring of supply chains, search of new partners (manufacturers and suppliers of components), and other factors constraining export growth of agricultural equipment.

Wholesale and retail sales grew: wholesale trade was mainly due to increased sales of medicines and medical supplies, chemical fertilizers, and agricultural

¹ Oil production increases by 400,000 barrels per day each month. This increase is extended until the end of April 2022 26st OPEC and non-OPEC Ministerial Meeting concludes // OPEC. 02.03.2022. URL: https://www.opec.org/opec_web/en/press_room/6830.htm

equipment; retail trade was driven by increased sales of nonfood products due to a rush in demand for the products of foreign companies that were temporarily shutting down operations in Russia.

The trend component of paid services to the population maintained negative dynamic. The trend component of freight turnover showed about zero growth rates. The main reduction in the freight base was owing to a decrease in export shipments as a result of sanctions and restrictions imposed, as well as the Russian government's retaliatory actions.

The sanctions imposed on Russia at the beginning of 2022 did not affect the dynamics of most industrial sectors during the first quarter. The negative impact will manifest itself later, when the following factors will affect the production process of companies: increased transportation costs, the breakdown of old supply chains, the cost of finding new consumers, etc., so the dynamics in the Russian industry may deteriorate amid the geopolitical crisis, which will lead to a narrowing of export markets.

3.2.2. Dynamics of the industrial production index in Q2

At the end of Q2 2022, the trend component of the index of industrial production showed a decline mainly due to the sanctions imposed by several countries after the launch of SMO.

The oil production contraction seen in Q2 2022 was due to: the refusal of consumers and traders from the EU to buy Russian oil; the embargo on oil supplies from Russia by the US and the UK; decrease in oil shipments by sea in March 2022, which led to a mirror reduction in the loading of production capacity in April 2022 amid the exhaustion of port infrastructure and storage capacity in the Transneft system coupled with the lack of formed alternative supply routes, which have already begun to operate since May 2022 (increasing exports to India and China) largely due to a discount in the price of Russian Urals crude oil relative to the price of the benchmark Brent brand.¹

Despite the increase in gas supplies to China via the Power of Siberia pipeline and the active pumping of gas into European UGS (underground gas storage facilities) in April 2022, the volume of gas exports from Russia declined in Q2 2022. The reason is Russia's response to the EU sanctions: the introduction of a new gas payment scheme (converting euros into rubles) for supplies to the European market and the suspension of exports to Bulgaria, Poland, Finland and the Netherlands at the end of May 2022 because these countries refused to pay under the new scheme (according to 2021 data, their share in Russian gas exports was 11%).

An additional factor in Q2 2022 that limited coal export shipments to the Asia Pacific market, in addition to infrastructure restrictions on the Far East railroad lines, was competition with other cargoes that were redirected to the East after the imposition of sanctions.

¹ *Malkin V.* Russia raise crude oil production and export in May // *Vedomosti*. 02.06.2022. URL: <https://www.vedomosti.ru/business/articles/2022/06/02/924946-rossiya-eksport-nefti>

The main positive contribution to the dynamics of the trend component of the mining industry was made by the extraction of minerals, except for fuel and energy, due to the growth of external demand for nonferrous metals in anticipation of the introduction of new restrictive measures on export supplies from Russia. In addition, there was an increase in production related to the provision of services in the upstream sector, despite the fact that foreign oil service companies of the Big Four announced their withdrawal from March 2022, the suspension of investment and transfer of technology and equipment to Russian projects, the resale of business to Russian owners.¹

The trend component of the manufacturing sector showed a slow decline at the end of Q2 2022. The restraining factors for the production growth in the manufacturing industries were the sanctions, due to which the logistics of the supply of components and raw materials did not have time to realign to the domestic market or to the markets of the countries that did not impose sanctions against Russia. In addition, there are products that are not produced in Russia and their import is prohibited, which stops the production of industries that use these products. The share of components subject to restrictions depends on the sphere. The greatest import dependence on the EU and the USA in machinery and equipment (40%), medicines (34.5%), cars (28.3%), rubber and plastic products (24.6%).²

Following the industrial sectors, other sectors of the Russian economy also showed a decline: freight transport due to the reduction of export flows of energy, chemical products and timber; wholesale and retail sales due to the departure of foreign firms and the reduction or termination of a number of commodity flows. The construction industry stagnated due to rising prices for building materials and components.

According to the results of the analysis of the dynamics of the trend components of industries, the Russian industry felt the impact of the imposed sanctions on their production processes in Q2 2022. A number of industries, which in retrospective dynamics provided the growth of the Russian economy, depend on imports: the share of foreign added value in their products exceeds 50%, mainly these imports from the countries that imposed sanctions (the EU and the USA). It takes some time to find alternative suppliers and sales channels, it is possible that new partners will supply components of lower quality, raise prices due to lack of competition, and this will again lead to dependence on imports. It takes more time to carry out self-reliant substitution; this way can, on the one hand, help avoid serious problems in future supply chain disruptions, but, on the other hand, lead to higher production costs due to ignoring the advantage of specialization and scale of production established in the global market. Another

1 The share of foreign companies in this market is no more than 20%. See, for example: *Budris A.* Oil servicing companies terminate investment in Russia: what will happen to oil production // Forbes. 23.03.2022. URL: <https://www.forbes.ru/biznes/459711-nefteservisnye-kompanii-prekrasaut-investicii-v-rossii-cto-budet-s-dobycej-nefti>

2 *Kokoreva M.* From the automotive industry to pharmaceuticals: how dependent the Russian economy is on imports // Forbes. 19.04.2022. URL: <https://www.forbes.ru/finansy/462829-ot-avtoproma-do-farmaceutiki-naskol-ko-rossijskaa-ekonomika-zavisit-ot-importa>

risk is the narrow concentration of export flows from Russia only in the Chinese market. It is worth developing other sales channels that do not have a large capacity and are not considered traditional for Russia, but which are ready to buy products from Russia (for example, for timber products it could be the Middle East, the Persian Gulf, South-East Asia). To this end, it may be worth making these destinations more attractive by removing trade restrictions (for example, import duties).

3.2.3. Dynamics of the industrial production index in Q3

Over Q3 2022, the trend component of the industrial production index showed slow growth mainly due to manufacturing industries — in particular, metallurgy, petrochemicals and food production.

The trend component of the mining industry exhibited slow growth in Q3 2022. Oil production and export volumes were growing until September 2022, in October 2022 oil production decreased by 0.6% against the same period of the previous year, and exports dropped by 1%. In early October, the OPEC+ countries agreed to adjust downwards the overall production by 2 mn bpd from the August 2022 required production levels starting November 2022. According to set up schedule, Russia should reduce its daily production volumes by 0.4 mn bpd.¹ Apparently, the decrease in production volumes in October was due to preparations for the implementation of the deal.

Volumes of gas production and exports to far abroad countries declined in Q3 2022 compared to the same period of the previous year, the reason being the problems of export pipelines to Europe: firstly, in May 2022, gas transit through Ukraine was more than halved, as the country refused to agree on supplies through Donbass; secondly, in late August supplies through the pipeline Nord Stream (55 bn cubic meters per year) stopped because of faulty pumping equipment; thirdly, the sanctions imposed against Russia over the SMO in Ukraine and Russia's retaliatory actions² since February 2022 have resulted in the impossibility of gas supplies via Poland through the Yamal- Europe gas pipeline (capacity 33 bn cubic meters per year).

Russian gas is exported to Europe via one of the branches of the Turkish Stream (33 mn cubic meters per day) and through Ukraine (43 mn cubic meters per day). In addition, the EU countries have agreed to reduce gas demand by 15% from August 1, 2022 to March 31, 2023, compared to average consumption over the past five years. Following exports, gas production is also falling. Growth in the period under review was observed in the transshipment of liquefied gas at Russian ports, which can be attributed to the increase in export volumes before the tightening of sanctions.

During the period under review, there was an increase in lignite production, which is used as fuel in thermal power plants and boiler houses, a decrease in

1 33rd OPEC and non-OPEC Ministerial Meeting // OPEC. 05.09.2022. URL: https://www.opec.org/opec_web/en/press_room/7021.htm

2 Introduction of payment for gas in Russian rubles. Poland refused to pay for gas in Russian rubles, gas supplies in this direction stopped.

coking coal production and exports due to infrastructure restrictions on rail lines in the Far East and competition from other cargoes that were redirected to the east after the imposition of sanctions.

The trend component of the manufacturing sector showed growth at the end of Q3 2022. The main contribution was made by:

- Food industry, partly on the back of the withdrawal of foreign producers from the market, and partly owing to the increased production of various types of canned goods, cereals and other durable goods, which is most likely due to increased demand for these products from the population of the regions bordering the SMO;
- Textile and garment production as well as the food industry partly amid the withdrawal of foreign competitors from the market, as well as due to increased demand for workwear, suits and kits for men made of textile materials, bags and travel kits used for personal hygiene;
- Metallurgy against the backdrop of growth in aluminum processing, production of aluminum pipes and structures necessary for heating lines construction and restoration of energy infrastructure in the attached territories, as well as owing to production growth of nonferrous metals, particularly gold (growth in demand for precious metals was due to the crisis in connection with the SMO and the high inflation rate of almost all major world currencies);
- Mechanical engineering due to increased production of tractors for agriculture and forge-and-press machines, mainline electric locomotives owing to the substitution of part of the demand for imported products; in agriculture on the back a good harvest year.

Q3 2022 saw growth in other sectors: in sales due to the departure of major players in the non-food segment of Russia and sales of their products; in construction owing to repair and construction of infrastructure in the attached territories; in agriculture on the back of a record harvest of some crops. Cargo turnover declined in the period under review due to restrictions on the transshipment of FEC products by sea and the low capacity of railroads in the easterly direction.

3.2.4. Dynamics of the industrial production index in Q4

In Q4 2022, the trend component of the industrial production index showed slow growth, with the main contribution coming from fuel and energy extraction and manufacturing; production and supply of electricity, gas, and water had about zero growth rates.

On December 5, 2022, an embargo on sea shipments of oil from Russia to the EU came into force, as well as a “cap” on oil prices at \$60 per barrel. According to the IEA, despite the restrictions, the volume of oil production and exports in 2022 remained stable: oil production rose by 2% to 535mn tons, while export of oil to non-CIS countries via pipelines and the sea rose by nearly 19% to 207mn tons. In early 2023, there may be a temporary reduction in production (wells with a high level of water cut may be taken out of service) with subsequent recovery, as it

takes time to build alternative channels of oil supply. The embargo on the export of petroleum products, which came into force on February 5 will be an additional factor in the reduction of oil production in early 2023.

In addition to infrastructure constraints, gas exports from Russia in Q4 2023 were negatively affected by the EU's gas storage capacity utilization rate of 80%. An increase in demand from the EU is feasible at the end of H1 2023, when preparations for the next heating season commence. The positive effect of strengthening gas cooperation with Turkey, China and Iran can probably be expected beyond 2023.

At the end of Q4 2022, the coal industry kept growing in production of lignite, which is used as fuel in thermal power plants and boiler-houses. Coking coal production and export volumes continued to decline due to infrastructure constraints on the Far East railroad lines and competition from other cargoes whose transportation was redirected to the east.

The trend component of the manufacturing sector at the end of Q4 2022 exhibited growth. The industries oriented mainly at the domestic demand had positive dynamics: foodstuffs manufacturing, including beverages and tobacco; production of finished metal products; manufacture of machinery and equipment; manufacture of vehicles and equipment. The export-oriented branches of industry, in particular, chemical production and wood-working industry, had a restraining influence on the dynamics of the industry. The current dynamic was caused by the substitution of foreign production with the products of Russian producers due to the sanctions imposed on the technologies, termination of direct import of some goods, as well as the growth of demand for the products of industries, which are intermediate for the fulfillment of the state defense order.

The reasons for the growth of other industries in Q4 2022 remained: in trade — due to the departure of major players in the non-food segment of Russia and sales of their products; in construction — due to repair and construction of infrastructure in the attached territories. Cargo turnover drops on the back of the restrictions on the transshipment of FEC products by sea, the low capacity of railroads in the eastern direction, the reduction of gas exports through the main gas pipelines.

Potential challenges for the growth of the Russian industry in 2023 will be:

- Substitution of more complex production by relatively simple products due to the sanctions imposed on technology and reduction of the number of employees owing to the partial mobilization and departure of some specialists abroad;
- Reduced competition amid the departure of a number of foreign manufacturers from the Russian market and restrictions on access to foreign markets;
- Preserving revenues from Russian oil and gas exports under embargoes and price caps;
- Quickly building new logistics and supply chains and providing them with the necessary infrastructure.

Table 14

Change in the output index across sectors of the economy, %

Sectors	Share in industrial production index, %	December 2022 on December 2021	December 2022 on June 2022
Industrial production index		97.34	102.04
Extraction of minerals	34.54	97.19	102.51
Manufacturing, including:	54.91	96.86	104.26
Production of food, including beverages and tobacco	16.34	110.71	106.18
Textile and garment production	1.14	105.52	107.27
Manufacturing of leather, articles thereof and footwear	0.27	96.42	100.47
Wood processing and wood ware manufacturing	2.02	81.29	95.34
Pulp-and-paper industry	3.35	74.25	86.01
Production of coke and petrochemicals	17.25	101.48	101.53
Chemical industry	7.56	101.58	100.59
Manufacturing of rubber and plastic articles	2.14	96.67	104.03
Manufacturing of other nonmetallic mineral products	4.02	91.16	93.58
Metallurgy and manufacturing of ready-made fabricated metal products	17.42	114.76	115.83
Manufacturing of machinery and equipment	6.97	96.50	102.54
Manufacturing of electrical, electronic and optical equipment	6.27	94.54	98.81
Manufacturing of transport vehicles and equipment	6.75	92.49	111.60
Other industries	2.42	93.95	103.39
Electricity, gas and water supply	13.51	98.85	100.09
Wholesale trade		82.53	101.27
Retail sales		90.04	101.06
Cargo turnover		94.57	97.55
Construction		106.17	103.51
Volumes of paid services to households		105.43	102.41
Manufacturing of transport vehicles and equipment		101.23	101.55

Sources: Rosstat, own calculations.

3.3. Russian industry in 2022¹

This section is based on the materials of opinion polls involving managers of industrial enterprises conducted by the Gaidar Institute for Economic Policy (IEP) according to the European harmonized methodology in the monthly cycle since September 1992.

The survey contains a very small number of questions (not more than 15–20). The starting questions of the IEP questionnaire were prepared in 1992

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based on recommendations of the Organization for Economic Cooperation and Development, which “supervises” the opinion polls in all countries of the world. The modern questionnaire of the IEP surveys consists not only of the minimum set of questions recommended by the OECD, but also includes other questions developed in light of many years of experience in monitoring of the situation in the Russian industry and allowing a better understanding of particular dynamics and condition of the industry. A systematic analysis of the situation in the Russian industry based on monthly opinion polls using a modified questionnaire amid “sanctions war” once again demonstrated the advantages of our data source.

Questions of the opinion polls traditionally concern actual and expected changes of the main indicators of the enterprise’s activity, as well as the estimates of their current situation. Enterprises are invited to respond to questions on a scale of “growth”, “no change”, “reduction” or “above the norm”, “normal”, “below the norm”. When analyzing the results of opinion polls, they used a derived index called a balance. Balances are calculated as the difference between the percentage responded “will grow” (or “above the norm”) and the percentage responded “will reduce “ (or “below the norm”). The resulting difference allows us to present the distribution of answers to each question by a single number with a “+” or “—” sign. There are practically no classical quantitative questions (familiar to economists) in surveys.

Simple design of questions and answers allows respondents to fill out the questionnaire quickly and without reference to documentation. It is fundamentally important that the respondent at each enterprise was a manager of the highest possible level having a complete picture of the situation at the enterprise and directly related to its management.