Faculty of World Economy and International Affairs
School of World Economy

GLOBAL BUSINESS MONITOR

INDUSTRIAL AND REGIONAL TRENDS

2024

Annual Issue

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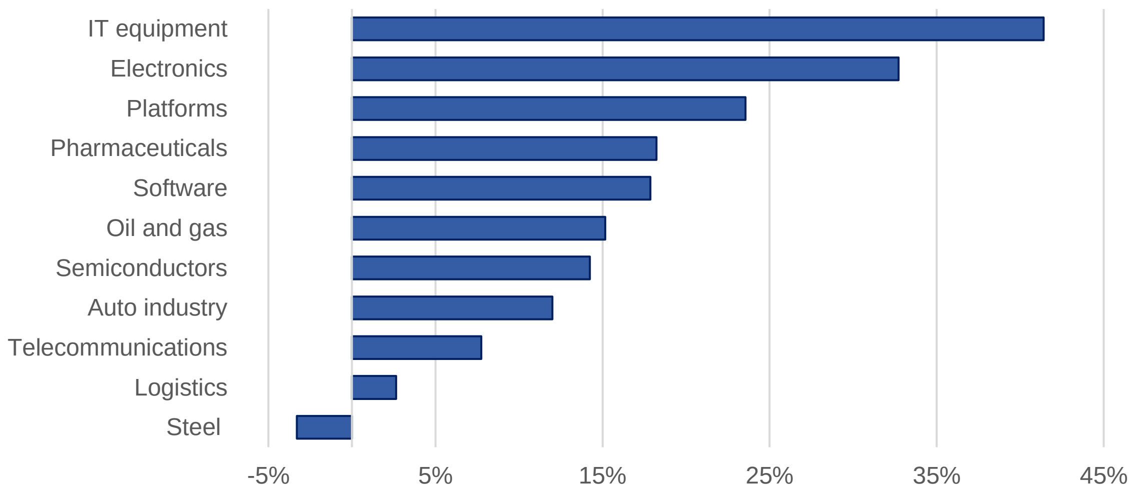
HIGHLIGHTS

The global business operated and developed in 2024 under the influence of a number of factors, key among which were high demand for artificial intelligence (AI) and high-performance computing solutions; sanctions and trade restrictions on China; China's increased build-up of sovereignty in high-tech industries; and mergers and acquisitions to exploit / create market opportunities or in response to low demand

Key industrial trends

The information technology (IT) industries posted the highest growth rates during the year, appropriately valued by investors, with average share price gains of 41% in industrial IT equipment, 33% in consumer electronics, 24% in platform business, and 18% in software. The share price of semiconductor manufacturers rose by an average of 14%, however, if we exclude Chinese companies operating under sanctions pressure and the US Intel, which found itself in crisis, the figure would reach 21%.

Average growth rates of companies' share prices in 2024 by industry
% by 2023



Note: all calculations of share price dynamics in the Issue were based on investing.com data; share price for the year was calculated as weighted average closing price based on daily trading volume

A key driver of growth and investor expectations in ***IT industries*** has been the boom in demand for artificial intelligence and high-performance computing solutions, which has driven sales of electronics with AI functions, purchases of equipment for semiconductor production and creation of cloud infrastructure, further technological breakthroughs in the semiconductor industry, and partnerships in software. In IT equipment and semiconductors, an additional growth driver is the desire of countries to ensure “technological sovereignty,” fueled by sanctions pressure on China and the new U.S. administration's tougher trade policies. This is reflected in the expansion of manufacturing capacities as well as additional equipment purchases by both developed and developing countries. The demand for AI and the drive for technological independence will not abate in 2025.

Against the backdrop of a boom in IT industries, the global ***telecommunications sector*** is finding new growth points. Amid weak demand for their services, operators throughout the year sought to diversify their activities by introducing new technologies and entering into partnerships with IT companies in the fields of AI, cloud computing, satellite communications and cybersecurity. This translated into fairly high expectations of investors - shares on average increased by 15% in 2024, even though revenue growth has been much less impressive (+2% in 9M 2024).

Good growth in 2024 was demonstrated by the global ***pharmaceutical industry***, which continues to actively reallocate resources and focus on priority therapeutic areas after the end of the COVID-19 pandemic. Companies are developing innovative drugs for the treatment of oncology, diabetes, obesity, etc., which was reflected in the mood of investors - the average increase in the share price of the largest industry players was 18%.

The global ***oil and gas sector*** looks quite optimistic - the value of shares of the largest producers increased by 15% on average in 2024. However, it should be taken into account that the driver was exclusively the quotations of the companies of the largest developing countries with high domestic demand — China, India and Brazil. The average growth of quotations of companies from developed countries amounted to only 3%. The industry operates under conditions of high uncertainty - geopolitical tensions and sanctions, trade restrictions, risks in oil transportation, continued weak market conditions in China and Europe, etc. will determine the performance of companies in 2025.

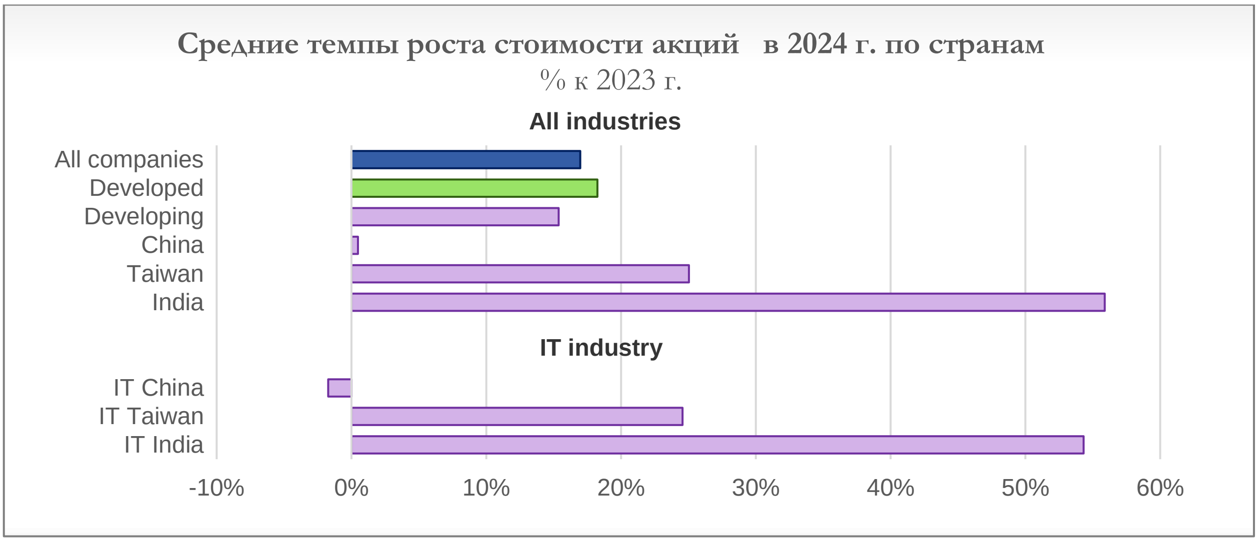
The investment attractiveness of the ***automotive industry*** (+12%) was also driven by high investor expectations for companies from developing countries — India and China. Indian manufacturers operate under favorable conditions in the domestic market and increase exports. Chinese auto giants are increasing exports in the face of strong competition within China, despite the tightening of trade restrictions, and also have an obvious technological advantage in the electric car segment, the production of which, after slowing down in 2024, will, according to experts, accelerate due to the emergence of a large number of inexpensive models of electric cars.

The global ***transportation and logistics sector*** showed high growth rates during the year as a result of high freight rates and increased demand for air and rail transportation, which was caused by the crisis in the Red Sea — the average revenue growth of the largest players in 9M 2024 amounted to 12%. However, investors were less positive, with average share price gains of only 3%, mainly due to the negative performance of companies specializing in ground logistics and express delivery. The main impact on the industry's performance in 2025 will be geopolitical tensions, protectionism and continued sanctions pressure, which are leading to low global trade growth and route realignment.

The ***steel industry*** looked the least attractive in 2024 — the average drop in stock prices of the largest producers amounted to 3%, while the average quarterly revenue growth during the year was also negative. The industry functioned under the conditions of weak market conditions in all key markets — China, the US, the EU, and strengthening of protective measures against Chinese steel. No significant improvement in the situation should be expected in the near term — overcapacity, de-globalization and increased protectionism will restrain demand and steel prices.

Key regional trends

Companies from developed and developing countries generally demonstrated similar development dynamics in 2024 — in terms of revenue growth rates, companies from developing countries were ahead in 2024 (+11% in 9M 2024 vs. +6% for developed countries), while companies from developed countries were ahead in terms of share price dynamics (+18% in 2024 vs. +15% for developing countries). However, the situation of individual countries and regions in different industries varied from very promising to crisis.



In the group of ***developed countries***, the key events of the year were the crisis in the European automotive and steel industries, restructuring and consolidation in the telecommunications sectors of the US and European countries, the crisis of the largest US semiconductor manufacturer Intel, difficulties in the Japanese automotive industry, and the pre-crisis situation in South Korea's Samsung.

From the point of view of ensuring business growth, companies from ***developing countries*** developed quite intensively in 2024 both due to large domestic markets and as a result of increasing exports; however, investors' expectations differed greatly from country to country.

Chinese companies looked the least promising during the year - the average increase in the share price of Chinese companies in 2024 (56 companies in the sample) amounted to 0.5%, while in the IT sector the dynamics was negative — a decline of 2% (32 companies). The main reasons are the increased sanctions pressure from Western countries, tougher trade and political measures from the US and Europe, and weak market conditions within the country.

The investment assessment of ***Taiwanese*** companies, represented mainly by players in the IT industry (17 companies), was quite favorable - the average increase in stock prices was +25%. Taiwanese companies strive to reduce geopolitical risks by reducing interaction with Chinese partners, as well as by moving production out of China, while expanding in other countries and regions - the USA, Europe, and Asian countries.

India's largest companies look the most promising - the average increase in the value of their shares (17 companies in the sample) amounted to 56%, including 54% in the IT sector (5 companies). High domestic demand, relocation of IT production from China to India, large-scale government programs to support and develop key industries for long-term economic growth provide Indian companies with revenue growth and inspire optimism in investors.

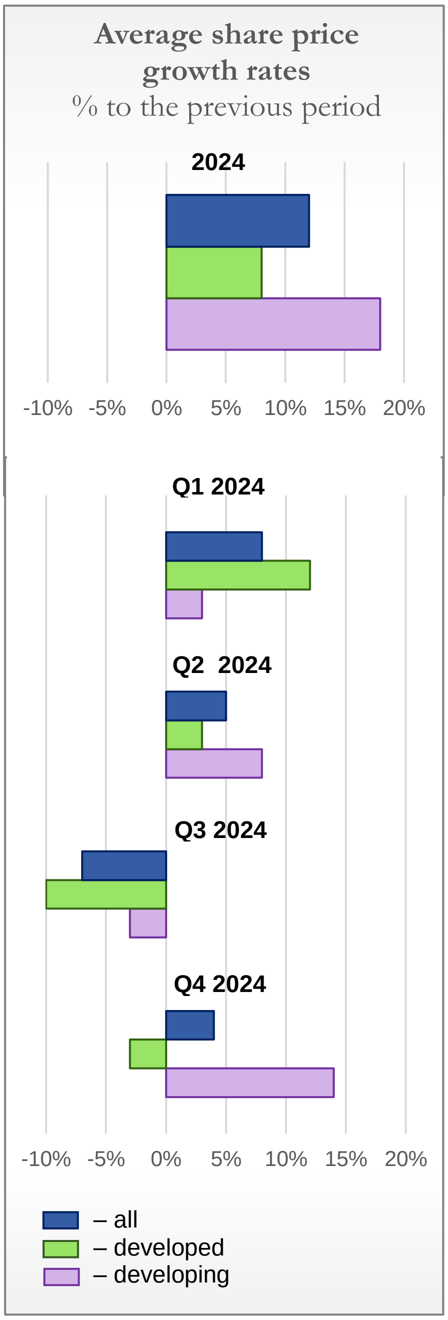
Annual and quarterly share price growth rates in 2024 for companies included in the Monitor

AUTOMOTIVE INDUSTRY

Investment climate

Investors were generally positive about the global automotive industry in 2024, with the share price of major manufacturers rising by an average of 12% relative to 2023.

Manufacturers of **developing countries** looked more promising primarily due to the high growth in the value of shares of Indian Bajaj Auto (+95%) and Tata Motors (+70%), operating under favorable conditions in the domestic market and increasing exports. Most Chinese automakers, despite strong competition and price wars in the Chinese market, also grew in value. The key factor of their success can be considered the growth of deliveries to foreign markets, including Russia.



Companies from **developed countries** received a less favorable assessment of investors in 2024 (+8% vs. 2023). The main contribution to this was made by the negative dynamics of the share price of German companies — Volkswagen (–23%), Porsche (–15%), BMW (–12%), Mercedes-Benz (–7%). Weak domestic demand and competition from Chinese electric cars, whose expansion in the second half of 2024 the EU is trying to stop by introducing new duties, are the main reasons for the crisis situation. Japanese manufacturer Nissan (–14%) is also in a crisis situation, with its management stating that the company has a short timeframe for survival (see Issue 4/2024 of the Monitor).

The quarterly dynamics confirms the annual dynamics — in the last three quarters of 2024, the share prices of emerging market companies outperformed those of Western manufacturers. The exception is Q1 2024, in which the quotations of all Chinese companies fell relative to Q4 2023 as a result of fierce competition and price wars in the domestic market and general weak market sentiment at that time.

Trends 2024

The year 2024 for the global automotive industry was marked by a slowdown in the transition to electric cars by Western manufacturers, while IT giants remained active in the industry and integrated into the automotive sector. High costs of electric car development with low demand, as well as the price and technology advantage of Chinese manufacturers, which they successfully implemented in the largest markets despite restrictive measures, led to the crisis of the largest European and Japanese automakers.

More about the key trends of the year

The **slowdown in the transition to electric cars** became evident already in Q1 2024 — by the second half of the year, most market leaders announced postponement, reduction of financing, curtailment or suspension of electric car production. All announcements were made by companies from developed countries — Volvo, Toyota, Renault, Stellantis, Mercedes-Benz, Nissan and others. The main reasons are high development costs, low demand in Europe and fierce competition from Chinese electric cars. Nevertheless, Western automakers do not forget about new technologies and maintain activity in announcing electric novelties, including through cooperation with Chinese partners.

This trend and the challenges it poses have attracted the attention of regulators at the end of 2024 — the leading party in the European Parliament, the European People's Party, is planning a statement aimed at softening the EU's policy to abandon internal combustion engines; automakers are beginning to oppose a total ban on internal combustion engines in Europe from 2035.

The **diversification of the IT sector into electric car production**, attempted by various IT giants over the past few years, has been fully realized by China's Xiaomi in 2024. The company has launched mass production of electric cars, is building a second factory in China, and at the end of the year began preparing its vehicles for overseas expansion. While Apple rolled back the car project it had been working on for more than 10 years, Xiaomi and other Chinese companies are actively integrating into the industry — Chinese smartphone maker Meizu announced its first electric car, Huawei has already produced seven electric cars in partnership, one of China's largest air carriers JuneYao Airlines launched sales of an electric car of its own design. All of this is further fueling the “competitive fire” between Chinese and Western car companies.

Duties on Chinese electric cars have become a key tool to protect the European and US markets in the second half of 2024. The new EU duties rose to 35.3%, adding to the existing 10%. In October 2024, the US and Canada protective tariffs on electric cars from China in the amount of 100%.

The difficulties faced by the car companies from developed countries in 2024 led to a **crisis in the European automotive industry** at the end of the year. Almost all major European manufacturers demonstrated negative dynamics, and also reported on restructuring and / or its impending inevitability (Volkswagen's announcement of the closure of three plants in Germany, the reduction of 4.5 thousand jobs at Audi, suspension of production at three Stellantis plants, etc.). Problems were also reported by Japanese car companies — Nissan plans to lay off up to 9 thousand workers and reduce capacity by 20%, Toyota is experiencing problems due to declining sales in Japan and the United States.

Outlook for 2025

In our opinion, the main factors determining the development of the global automotive industry in 2025 will be (1) technological innovations, (2) further development of the electric vehicle segment and maintaining / strengthening the superiority of the Chinese automotive industry in it, as well as (3) protectionist policy of the new US administration.

Technological innovations will lead to the accelerated development and start of production of flying cars, which are increasingly being discussed by the end of 2024. They will also make it possible to finalize and mature cars with unmanned driving functions (robotaxis, autonomous electric cars). The IT sector will play an important role in technological development — the development of intelligent driving technologies within the joint projects with IT companies seems to be a faster and more efficient solution for automakers.

In the field of **electric vehicles**, competition between Chinese manufacturers has reached such a degree of intensity in both domestic and foreign markets that mass production of a budget electric car has exhausted its possibilities. Companies are beginning to shift to the development of niche, primarily luxury products, and therefore we should expect more intensive appearance of various premium models in China, as well as their launch in foreign markets. However, given the restrictions imposed by the EU and the US, the domestic market will be the main source of growth for the Chinese automotive industry in 2025.

At the same time, we could expect a wave of new, deeper partnerships between Western auto giants and the Chinese auto industry, including the transfer of a number of R&D and production processes to China, which will result in more budget electric car models from Western manufacturers. Cooperation of developed countries' manufacturers with each other (for example, the alliance between Honda and Nissan announced at the end of December 2024) in the absence of clear competitive advantages for each partner is unlikely to save the crisis situation in which developed countries find themselves.

The **increase in tariffs** on electric vehicles in the United States, expected due to the arrival of the new President D. Trump, may deal a serious blow to the European automotive industry, primarily the German one, which still supplies a significant part of its production to the U.S. market through exports. The ban on importing Chinese cars into the US, which became known at the very beginning of 2025, worsens the situation for both Chinese and American manufacturers importing products from China (Ford, General Motors). Such provoked changes in production processes, as well as in the import of software and equipment, may affect supply chains and the balance of power in the global automotive industry.

Investment climate

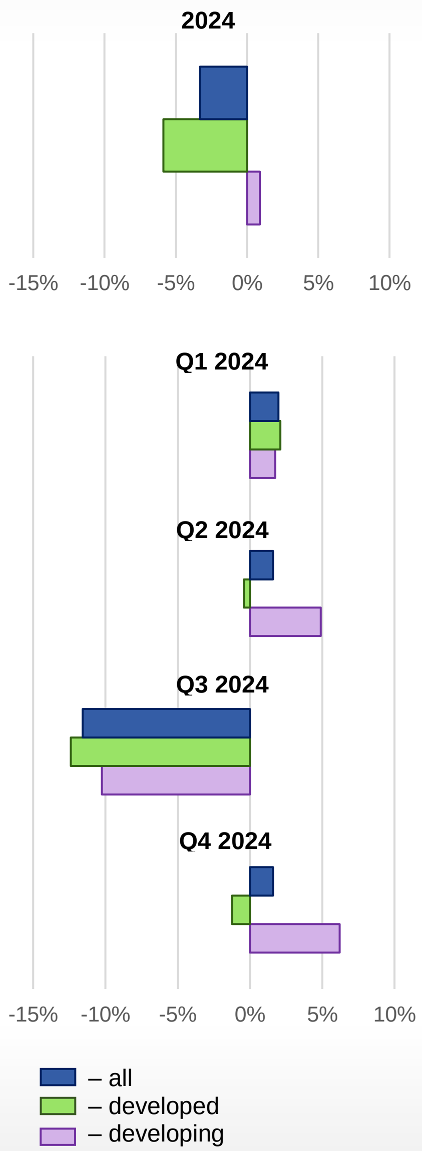
Weak demand in major countries and an oversupply of Chinese steel in the global market led to negative share price dynamics in the steel industry — the average drop in share prices of major producers amounted to 5% against 2023.

Steel makers from developing countries managed to achieve minimal but positive share price growth within a general downturn, which averaged +1% for their group. The main contribution to this dynamic was made by Indian Tata Steel (+33%) and Russian Severstal (+24%) — both companies are developing due to high demand in domestic markets. The biggest drop in value, as expected, occurred among Chinese producers facing weak market conditions in the PRC and increased duties in foreign markets in 2024 — Shougang Group (-17%), Inner Mongolia Baotou Steel (–8%), HBIS (–8%). Taiwanese China Steel (–16%), which had to cut prices on its main domestic market amid fierce competition, was also among the outsiders.

Shares of the overwhelming majority of **manufacturers in developed countries** have lost value. The exceptions are the largest Japanese and American companies. The prospects of Japanese Nippon Steel (+10%) and JFE (+1%) are explained primarily by plans for overseas expansion (see Issues 1, 2 and 3/2024 of the Monitor). US Steel Dynamics (+18%) and Nucor (+1%) gained in the eyes of investors amid uncertainty over the sale of US Steel, another major US producer. Shares of European companies lost the most in price as a result of the crisis situation in the industry — German ThyssenKrupp (–39%) and Austrian Voestalpine (–19%).

The quarterly dynamics of stock prices fully corresponds to the annual one — in all four quarters of 2024, the shares of developing countries' companies demonstrated more positive investor sentiment, including the negative third quarter, in which the value of their shares fell less strongly than that of developed countries' producers.

Average share price growth rates
% to the previous period



Trends 2024

In 2024, the global steel industry operated under the conditions of weak market conditions in all key markets — China, the USA, and the EU. Chinese manufacturers rushed to export their products, which caused a wave of anti-dumping investigations, increased customs duties and direct import bans on certain types of products in a number of countries. Protective measures did not save the European steel industry from the crisis, which became evident by the end of the year — the industry requires large-scale government support.

More about the key trends of the year

The decline in steel consumption in China, which occurred as a result of the end of a decade-long construction boom in the country, triggered a number of processes in the Chinese steel industry. Throughout the year, the efforts of producers in China were aimed at increasing exports, however, faced with intensified protective measures in foreign markets and finding themselves on the verge of bankruptcy by the second half of the year, they were forced to make adjustments in their work, reduce production capacity and optimize the product mix. The Chinese government stopped all planned expansion projects and approved capacity exchanges for 11 companies. As a result, according to preliminary estimates, China's steel output is expected to decline by 2% in 2024.

The intensity of the introduction of protective measures against Chinese imports has not weakened since the second quarter of 2024. Extension of existing measures, increase of tariffs and quotas, initiation of new anti-dumping investigations, direct ban on imports were initiated both by large economies (USA, Canada, EU, UK, India, Brazil, etc.) and a huge number of small countries. Steel associations and producer groups took an active position in restricting Chinese imports. Low demand in national markets, with the exception of India, which is increasing production in the face of high domestic demand, further aggravated the situation.

The unfavorable environment and cheap Chinese steel have had a negative impact on the **European steel industry, which will be in a crisis situation by the end of 2024.** Already in the first quarter, restructuring processes became evident — several producers, including Voestalpine and Thyssenkrupp, announced the sale of divisions and closure of production lines. In the second half of the year, other companies joined them, with restructuring extending beyond Europe, and by the end of the year bankruptcies were reported (see Issues 3 and 4/2024 of the Monitor). The current situation requires active intervention and support from the state. EUROFER, the EU steel producers' association, has addressed an open letter to the heads of EU member states with an appeal to save the steel industry.

The transition to green steel in the steel industry, in general, did not weaken during 2024. Initiatives were implemented by all market participants — producers, regulators, energy suppliers and consuming industries. However, it is worth noting the restraining factors. In China, investment in green technologies is constrained by the relatively young age of the industry, with capital expenditure on equipment not yet fully amortized. In Europe, weak demand in general and the high cost of green products make it impossible to reach profitable production volumes. As a result, for example, the Norwegian energy company Equinor withdrew from a multi-billion dollar project to supply hydrogen to the German steel industry (see Issue 3/2024 of the Monitor).

Outlook for 2025

In our opinion, we should not expect any significant improvement in the situation in the global steel industry in the near term. Excess capacity will keep prices low; de-globalization and political tensions will restrain the development of a number of sectors of the global economy, which will affect demand for steel products; increased protectionism in the industry will redistribute import flows, giving advantages to low-carbon steel suppliers and putting Chinese producers in even more difficult conditions; adherence to the decarbonization trend will keep producers' costs high and complicate the “green transition” in Europe.

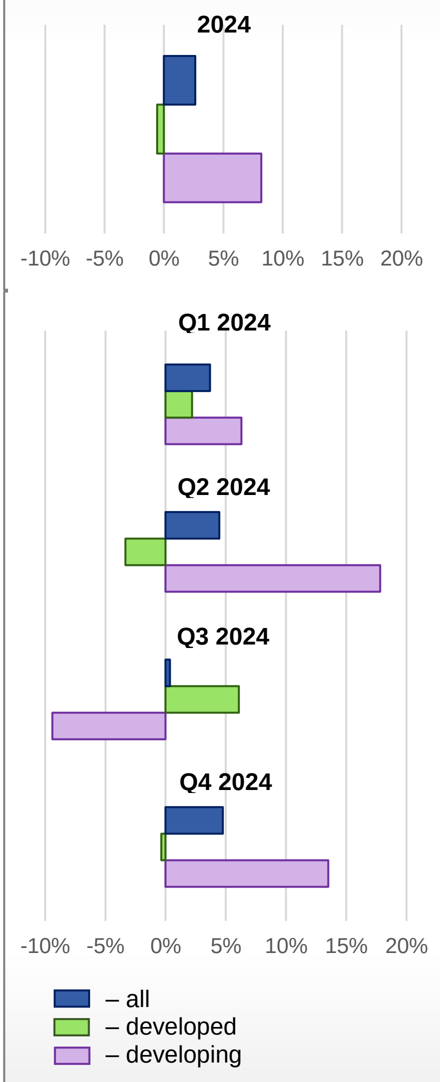
Nevertheless, 2025 could be a turning point for the industry, which has been experiencing a decline in demand over the past three years. Positive factors for the industry’s development include the recovery of global demand for steel due to increased consumption in India and some other countries, which will compensate for low demand in China and Europe. However, in the context of growth, India is independently increasing production capacity and limiting imports from China, as a result of which its contribution to the dynamics of global steel trade will not be decisive. Demand for environmental and energy-efficient solutions will strengthen in the industry, which will keep cooperation and green steel projects at a high level. We can also expect a recovery in economic activity as a result of EU and US efforts to stimulate growth with macroeconomic policy instruments.

TRANSPORT AND LOGISTICS

Investment climate

The share price of the world's largest transport and logistics companies in 2024 grew marginally by 3% in average against 2023. Weakening demand, high operating costs, overcapacity in a number of modes of transportation (rail and road), uncertainty and risks due to the situation in the Red Sea are the main factors behind the restrained reaction of investors.

The highest growth rates were shown by **Asian sea carriers** — Taiwanese Evergreen Marine (+41%) and Wan Hai Lines (+33%), Chinese Cosco Shipping (+29%) and Sinotrans (+15%), South Korean Hyundai Glovis (+24%). The prolonged crisis in the Red Sea, which “jacked up” freight rates, especially in the East-West direction, and allowed these companies to generate high revenues and huge profits (see Issues 2, 3 and 4/2024 of the Monitor), is a key factor of growth.



Average share price growth rates
% to the previous period

As a result, the average growth rates of the share prices of logistics companies in developing countries by the end of the year significantly exceeded the dynamics of developed countries' shares and amounted to +8% vs. –1%. However, the quarterly dynamics was not so unambiguous. In early July, a ceasefire in the Gaza Strip was expected, which entailed the resumption of transportation through the Suez Canal. As a consequence, quotes of shipping companies fell heavily in Q3 2024 — Sinotrans fell in price by 20%, Evergreen Marine by 8%, Cosco Shipping by 5%. Subsequently, this fall was recovered.

In 2024, shares of **companies engaged in ground logistics and express delivery** lost most of all their value. The strongest drop (–27%) occurred in the case of Chinese Xiamen Xiangyu, which appeared in all quarterly issues of the Monitor as an outsider in terms of revenue dynamics, and whose logistics business is closely linked to other lines of business (wholesale trade, distribution, real estate). Weak prospects in the eyes of investors were received by another Chinese carrier S.F. Holding (–20%), which is mainly engaged in express delivery and air cargo transportation. Falling profits at U.S. express carrier UPS and the company's lowered forecasts for expected operating margins led to a 19% drop in its share price.

Trends 2024

The global transportation and logistics sector spent 2024 in a strong supply-demand imbalance caused by the Red Sea crisis. Rising freight rates generated huge revenues for shipping companies and increased demand for transportation by other modes of transportation. Companies engaged mainly in land logistics and express delivery found themselves in less favorable conditions, some having to resort to restructuring.

More about the key trends of the year

Shipping companies, which had enjoyed high profits during the Coronacrisis, found themselves in an even better position in 2024 due to the Red Sea crisis. Freight rates rose throughout the year, resulting in the highest possible growth in turnover and profits for shipping companies. The more diversified operators involved in maritime transportation were also able to significantly improve their performance.

The change and consequent lengthening of sea routes has brought the problem of tonnage shortage to the forefront, forcing carriers to **expand their fleets and invest in shipbuilding** at an accelerated pace (see Issues 2 and 4/2024 of the Monitor). At the end of October 2024, the world's ten largest ocean carriers had placed orders for more than 430 container ships, with the tonnage under their contracts exceeding the 2023 figure as early as in summer 2024. The emphasis in these orders is on new-generation vessels and investments in advanced, environmentally friendly technologies.

The development of alternative transportation routes from Asia to Europe was another consequence of the Red Sea crisis, as interest in air and land routes increased. Sea carriers continued to integrate into rail freight transportation in Europe, and in the second half of the year began to invest heavily in the air segment and cooperate with airlines (see Issues 2 and 3/2024 of the Monitor). In this trend, Chinese air carriers were able to increase revenues by utilizing shorter routes to Europe and North America via Russian airspace.

The development of **new transport routes**, driven by political factors (change of power in Afghanistan, conflicts in Ukraine and Gaza, confrontation between China and the US) on the one hand, and the growing interest in Latin American markets on the other, has become another important feature of the global transport and logistics sector in 2024. The EU is investing €10 billion in the development of the Trans-Caspian International Transport Route to link Europe and Central Asia, and the United States has announced its intention to create a new land route through Armenia and Azerbaijan for deliveries to Western markets, bypassing Russia and China. Operators from various countries of origin (China's COSCO Shipping, Korea's HMM, France's CMA CGM, etc.) simultaneously showed interest in the Latin American market, announcing the launch of new cargo routes and services (see Issue 3/2024 of the Monitor).

The **“green agenda”** was quite active in the industry during the year. Land carriers continue to add zero-emission vehicles to their fleets, following marine operators that are carrying out large-scale fleet expansion through the purchase of energy-saving and environmentally friendly vessels. However, in general, the decarbonization of the industry is developing slowly and requires additional incentives.

Outlook for 2025

The global logistics sector, which underwent a major transformation during the Coronacrisis, continues to face challenges and operate in an uncertain environment. The main impact on its performance in 2025 will be **geopolitical tensions, protectionism and continued sanctions pressure,** which are leading to low growth in global trade and route realignment. U.S. pressure will not only affect China, but could affect Canada, Mexico and even the European Union.

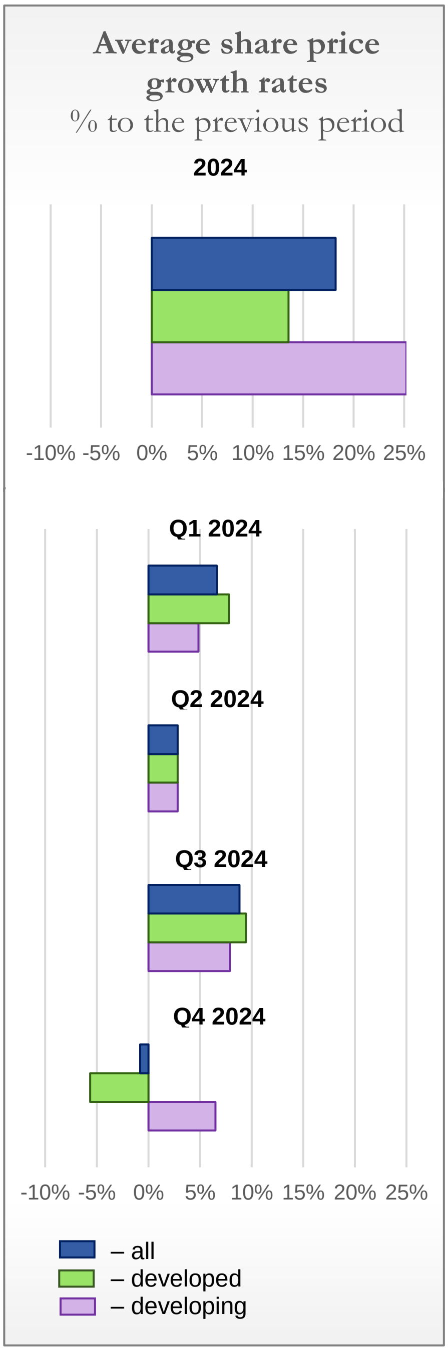
The emergence of **new growth points in the global economy** will have an important impact on the industry. India, Latin America, the Middle East and Africa will develop at a faster pace than the US, the EU and Japan, which will attract the attention of both Chinese companies seeking to circumvent sanctions and Western manufacturers forced to move production out of China. All this may provoke a change in the direction of goods flows and the development of new transportation routes.

There is likely to be a further **change in the structure of global cargo turnover** and a decrease in its concentration on maritime transportation in favor of other modes of transport. The commissioning of a large number of new container ships ordered by shipping companies during 2024, along with the expected slight decrease in demand for transportation, will stabilize the supply-demand imbalance in the industry, which allows us to forecast a gradual decrease in freight rates. The revenues obtained during the period of high prices will allow large sea carriers to diversify more strongly into a wide variety of logistics operations and assets, create closed incorporated supply chains and thus monopolize and control the market.

Investment climate

The pharmaceutical sector in 2024 showed positive dynamics as a whole, which was reflected in an average 18% year-on-year increase in the share price of the largest market players. Investors remained confident in the industry's prospects, however, the differences in results between regions and individual companies were quite noticeable.

Amidst the success of Indian companies, the Chinese pharmaceutical sector has faced serious challenges. The value of China's three largest pharmaceutical companies declined in 2024, primarily due to difficulties in the process of reorientation to promising and profitable therapeutic areas after COVID-19. WuXi AppTec (–37%) saw the biggest decline, with its shares falling by a third already in Q1 2024 following allegations by the US of collaboration with the Chinese army, which negatively impacted the company's reputation and market position.



Companies from developed countries showed moderate growth — average share price gains of 14%, but the success of individual players was overshadowed by the challenges of the leaders. South Korea's Yuhan Corporation (+89%) and Israel's Teva (+74%) significantly exceeded expectations by focusing on the release of affordable generics and biosimilars, in line with the global trend towards cheaper drugs. At the same time, giants such as Germany's Bayer AG (–43%) and U.S. Pfizer (–22%) failed to find support in the eyes of investors. The decline in revenues and profits recorded in 1H2024 (see Issues 2 and 3/2024 of the Monitor) was the main factor behind the decline in their market value.

2024 confirmed the importance of pharmaceutical companies adapting to new challenges and global trends. Developing countries, especially India, are strengthening their positions due to affordable and high-quality drugs, while China is facing the consequences of reputational risks and changing demand. In developed countries, the successful strategies of generics-oriented companies have become a key factor in their sustainable growth against the backdrop of instability of industry leaders.

Trends 2024

2024 was a time for the global pharmaceutical industry to actively reallocate resources and focus on priority therapeutic areas. The industry faced an increase in the number of mergers and acquisitions (M&A), strengthened cooperation with IT and biotechnology companies, and restructuring of assets to improve efficiency. This included the sale and purchase of individual business lines, staff reductions, and increased investment in R&D. The key areas of focus were oncology, diabetes, obesity and Alzheimer's disease, driven by growing demand for innovative drugs to treat these diseases.

More about the key trends of the year

Mergers and acquisitions. While 2024 was not a record year for M&A deals, it was memorable for a number of significant acquisitions. Pfizer acquired biotech company Seagen, strengthening its oncology portfolio. Eli Lilly acquired Prometheus Biosciences, strengthening its position in the immunology segment. European and Asian players were also active: Sanofi and GSK invested in startups developing gene and cell therapies; Celltrion completed a merger with its subsidiary; Taro merged with Sun Pharma. These deals confirm the need for pharmaceutical companies to attract experts from the IT and biotechnology industries to improve their competitiveness.

Asset restructuring. To maintain competitiveness, pharmaceutical companies began to actively reallocate assets, focusing on strategically important areas. Merck sold some non-core businesses to focus on the development of drugs for oncology and vaccines. AstraZeneca closed several research areas that did not meet expectations and directed resources to the development of drugs for diabetes and obesity. Companies are also increasingly using a strategy of localization of production to reduce costs, while at the same time abandoning a number of foreign divisions.

Focus on priority areas

Oncology. The competition between pharmaceutical giants in oncology gained momentum throughout the year. 2024 was the year of breakthrough ideas and innovative treatments — almost every Big Pharma company invested heavily in this segment. Many M&A deals were directly related to strengthening positions in the oncology drugs market to develop new cutting-edge approaches.

Diabetes and obesity. After several years of body-positivity popularization, the trend toward thinness and weight management is gaining momentum again. Companies that originally focused on type II diabetes drugs, such as Novo Nordisk and Eli Lilly, have discovered additional benefits of their products for treating obesity. The surge in demand has spurred other companies to develop similar drugs. This trend has also become an important growth driver for manufacturers of biosimilars and generics, whose drugs are attractive due to their affordable price and fewer side effects.

Outlook for 2025

In 2025, we believe the pharmaceutical industry will be influenced by (1) accelerating digitalization and development of AI technologies, (2) regulatory changes and government support, (3) increasing demand for chronic disease drugs, and (4) U.S. protectionist policies.

Accelerating digitalization and the development of AI technologies will optimize clinical trials and reduce their cost. This will lead to a faster launch of new drugs on the market. However, companies will face the need for additional regulation of these processes, including from a legal point of view. Many manufacturers face the moral side of the issue and cannot yet overcome it — at the moment there is an active dispute about the ethics of using AI technologies for drug development. Inhibiting factors are possible cyberattacks and subsequent leakage of confidential data, as well as the high cost of error in drug development. On the other hand, companies such as Roche and Johnson & Johnson are beginning to use AI more and more actively in their development, buying ready-made solutions from IT companies.

Regulatory changes and government support, particularly increased drug price controls in the US and Europe, may affect the profitability of the industry, especially for companies selling high-cost drugs. At the same time, government investment in generics is expected to increase in some countries, such as China and India. We anticipate continued growth in the Indian pharmaceutical industry well into 2025. Overall, 2025 could be even more challenging for original drug manufacturers from developed countries as a result of increased competition from generics and biosimilars.

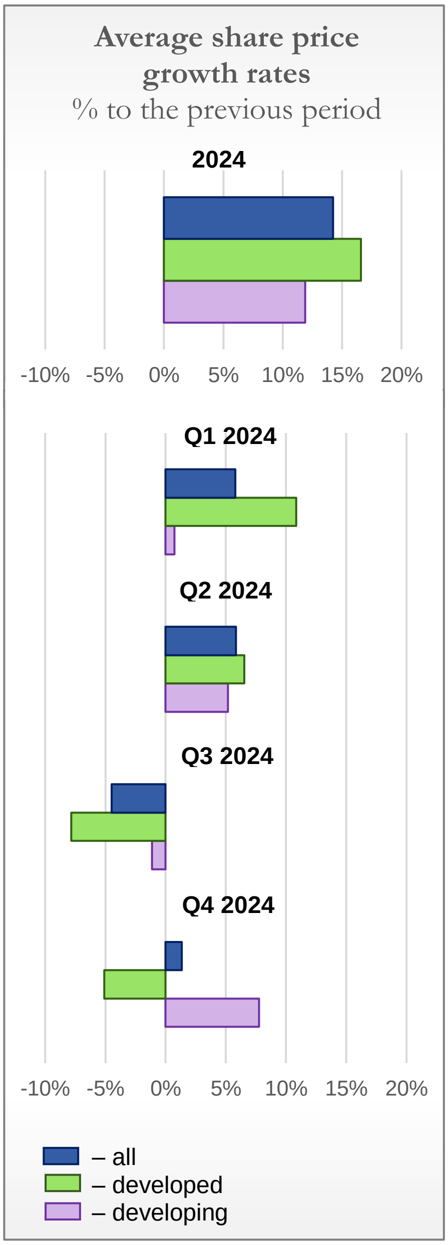
The growing demand for chronic disease drugs, driven by an aging population and the increasing incidence of diabetes, oncology and Alzheimer's disease, will lead to the development of new drugs. Companies will continue to invest in these areas, and competition for innovation will become even more intense. Pharmaceutical giants are also expected to become even more active in acquiring smaller businesses and start-ups involved in cell, gene and molecular research.

The U.S. protectionist policy, which is gaining momentum after President D. Trump took office, will also affect the pharmaceutical industry. The President announced his intention to impose import duties on pharmaceuticals to protect domestic manufacturers and to create incentives to move production to the United States. Companies from developing countries will face the challenges of the new American trade policy. For example, India and China are heavily involved in pharmaceutical trade with the United States. We assume that trade flows will be adjusted and Chinese and Indian companies will adapt their strategies in the US market to the new import conditions.

Investment climate

Investor expectations in the global semiconductor industry were shaped during 2024 by two main factors: (1) the high importance of the industry in the development of IT-industry and AI technologies, and (2) technological decoupling and sanctions. The share price of the largest manufacturers grew by 14% on average in relation to 2023. The companies of developed countries were evaluated more promisingly (average growth amounted to 17%), however, the dynamics of quotations of Chinese and Taiwanese manufacturers should be distinguished in the group of developing countries.

The most promising **developed-country companies** from the investors' point of view were US-based Broadcom and Micron Technology, as well as Korea's SK hynix, whose shares rose by 92%, 63% and 64%, respectively, against 2023. The reason for the strong growth in the value of US companies' shares was the very good quarterly reporting results demonstrated during the year (see Issues 2, 3 and 4/2024 of the Monitor), as well as high optimism about receiving orders in the AI field. The Korean manufacturer gained as a result of the announcement of mass production of a new AI chip in September 2024. The outsiders were the American analog chip maker Microchip Technology (-24%) and the Swiss STMicroelectronics (-24%), which faced increasing inventories and low demand in end markets, including from the automotive industry. We should also highlight the US Intel (see Issue 4/2024 of the Monitor), which is in a financial crisis situation — its shares fell by 14% year-on-year, while in Q2 and Q3 2024 the decline was the maximum among all analyzed



The dynamics of **Taiwanese manufacturers'** quotations was very positive — the average growth in share prices amounted to 24%, exceeding the performance of companies in developed countries. In March 2024, the shares of market leader Taiwan Semiconductor (TSMC) rose to a record level in the history of the company's listing in Taiwan amid the AI boom, and at year-end, including as a result of strong financial results, the increase amounted to 72%. MediaTek rose by 52% as a result of growing demand for cell phones in China and the emergence of the company's advanced processor, designed to solve tasks in the field of AI. But the value of shares of **Chinese**

manufacturers showed negative dynamics, the average decline of 4%. A significant decline in quotations occurred in August 2024, firstly, against the background of the US statements on strengthening sanctions, and secondly, as a result of the beginning of investigation by Chinese regulators of abnormal prices for semiconductors in the country.

Trends 2024

Key developments in the global semiconductor industry in 2024 included the following. (1) Increased pressure on China to restrict its access to advanced technologies, as a result of which the country rapidly imported chips and equipment necessary for the development of its own semiconductor production, as well as introduced retaliatory measures. (2) The countries' desire for technological independence, which intensified throughout the year and was manifested through capacity expansion and subsidization of domestic production, primarily in developed countries. (3) High rates of industry development thanks to the AI boom, which, however, did not prevent the two largest manufacturers Intel and Samsung falling into crisis.

More about the key trends of the year

The sanctions pressure on China has led to a number of trends in the global semiconductor industry and IT sector as a whole. First, there was an increase in US pressure on China (export controls, foreign direct investment inspections, restrictions on partnership agreements), which also involved other countries — Taiwan, the Netherlands, and Japan. Second, China began to develop its semiconductor industry at a faster pace, for which it purchased the necessary components and equipment from Western suppliers in large volumes. Third, China introduced retaliatory measures, including restrictions on exports of gallium used in semiconductors for the production of power microchips and radio frequency amplifiers, which has created risks for the national security of a number of countries (see Issues 3 and 4/2024 of the Monitor).

Expansion and capacity building in the global semiconductor industry continued throughout the year. While in the first half of the year projects were announced mainly in developed countries, starting from Q3 2024 the focus shifted to emerging markets — India, Malaysia, Vietnam, Mexico (see Issue 3 / 2024 of the Monitor). Europe was the lagging region in this race for “semiconductor independence” — the American Intel has abandoned the start of a project to build two advanced plants in Germany for at least two years, and has also suspended several large projects in Italy and France.

The expansion of capacities was actively supported by the states. In the U.S., subsidies were received by American Intel, Texas Instruments, Micron, South Korea's Samsung, Taiwan's TSMC, etc.; South Korea adopted a package of measures to support the industry for more than $19 billion; Germany plans to invest 20 billion euros in chip production, etc. (see Issues 1, 2 and 3 / 2024 of the Monitor).

The industry showed very high growth rates throughout the year. The key driver was the **AI boom**, which increased demand for certain types of products and stimulated cooperation in the IT industry. However, despite the industry boom, the two largest companies faced a crisis situation. At the end of the year, the leading American manufacturer Intel found itself in a difficult financial state. Realizing the aggravation of geopolitical contradictions and the need to develop the national semiconductor industry, the U.S. authorities are preparing a “rescue plan” for the company if its financial condition worsens. Samsung's chip production is also in crisis - the company's revenue has fallen against the background of growth of all other major players in the industry (see Issue 4/2024 of the Monitor).

Outlook for 2025

The key factors driving the global semiconductor industry in 2025 will be (1) continued high growth as a result of demand for AI and high-performance computing solutions; (2) further expansion of production capacity in developed and developing countries; and (3) escalating confrontation between the U.S. and China and strengthening of China's technological sovereignty in the industry despite its technological lag behind the market leaders.

The global semiconductor industry will continue to experience a period of rapid growth. The expected modernization of data centers, high demand for advanced AI server solutions, cell phone and wireless communication chips, and miniaturized chips manufactured using 2-nanometer technology, etc. will keep the industry's production and revenue growth rates high.

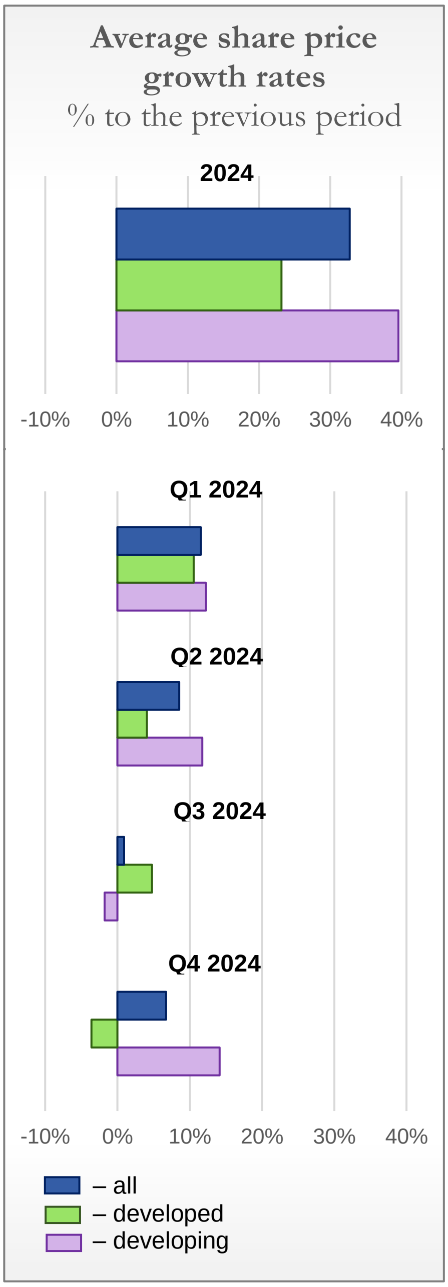
Further capacity expansion. According to SEMI, the U.S. electronics manufacturers association, the semiconductor industry is expected to begin construction of 18 new fabs in 2025, most of which are expected to begin operations between 2026 and 2027. Leading the way will be the Americas and Japan with four projects in each region, followed by China, Europe, and the Middle East with three planned projects in each. Investments will be made in both advanced and core technologies to meet growing global demand.

As sanctions pressure and confrontation between the U.S. and China intensify with the arrival of D. Trump, **China will continue to strengthen its technological sovereignty in the industry.** The focus of the Chinese authorities in 2024 has shifted from financing semiconductor production to financing the production of equipment for the semiconductor industry, which is critical for implementing the import substitution strategy and ensuring technological independence from Western countries. As a result, the monopoly of foreign companies in the semiconductor equipment segment of the PRC market has been broken, and the active displacement of foreign suppliers will continue in 2025 as well. High domestic demand and large-scale government support create all prerequisites for the successful development of the complete semiconductor product chain in China, including the design stage.

Investment climate

During 2024, investors valued the prospects and attractiveness of the consumer electronics industry quite highly — the average increase in the value of shares of the largest manufacturers amounted to 33% against 2023. In the context of weak demand for electronics, the key driver was the growth in demand for computers and mobile devices with AI functions, as well as for networking equipment necessary for the development of cloud solutions, in the production of which industry players are involved. Quotes of emerging market companies grew at a higher rate (+40% in 2024) due to their dominance in the industry as a whole and due to their activity in creating advanced solutions.

The highest value growth rates were shown by India's Dixon Technologies (+168%), Singapore's Flex (+72%), China's Xiaomi Corp (+59%) and Taiwan's Hon Hai Precision Industry (+65%). The increase in stock prices is directly related to the companies' successful performance in 2024 (see Issues 2, 3 and 4/2024 of the Monitor). The exception is Flex, which, being an outsider in terms of quarterly revenues during 2024, was among the leaders in terms of share price growth. Analysts note that despite the temporary decline in revenue, investors are positive about the company's prospects, including due to the development of AI and demand for server hardware.



Investors were most pessimistic about the performance of Chinese Hikvision (–16%) and Korean LG (–9%). The main reason for the decrease in Hikvision's share quotations were restrictions on the import of components and US sanctions related to the company's projects in Xinjiang Uygur Autonomous Region (XUAR) of China and accusations of violation of the rights of ethnic minorities in China. As for LG, investors take a pessimistic stance due to the company's lower operating results and revenues in the first three quarters of 2024. Nevertheless, the company managed to increase revenues during this period (see Issue 3/2024 of the Monitor) and held an IPO in India in December 2024. Separately, it should be noted that the stock price of Korean company Samsung fell by more than 25% in Q4 2024. Against the backdrop of low demand for smartphones and chips not optimized for AI, the company is facing market difficulties and competitive pressure in developing memory chips for AI gas pedals. The company's stock has added only 5% for 2024.

In the quarterly dynamics, the least favorable was Q3 2024, when the shares of only developed countries' companies grew, but in Q4 2024 the trend changed to a decrease in their quotations. At the same time, the quotations of shares of developing countries' companies demonstrated a steady growth of more than 10% in Q1, Q2 and Q4 2024, which indicates a positive assessment by investors of their prospects.

Finally, it is worth noting the low base effect, which directly affected the annual performance of consumer electronics stocks in 2023-2024. The very high demand for consumer electronics in 2021 and partly in 2022 due to the COVID-19 pandemic led to a significant increase in both company stock prices and revenues. However, already in the first half of 2022, demand for electronics began to fall, which led to a corresponding reaction from investors and affected the companies' sales. Thus, at the beginning of 2023, the shares of most technology companies were at one of their lowest levels. By the end of 2024, share prices recovered on the back of relatively stable market demand, as well as influenced by demand for AI and server hardware. This led to a 20-40% increase in the share price of the vast majority of manufacturers in 2024 relative to 2023. This effect is typical for most companies in the industry, including Asustek Computer Inc, Xiaomi Corp, AMD, Logitech, Pegatron, and others.

Trends 2024

The main trend that influenced the development of the consumer electronics industry in 2024 was the introduction and development of AI functions, as well as an increase in investments in their development. Despite this, low demand for the industry's products remained throughout the year, which affected the sales of a number of companies and contract manufacturers. Sanctions against the People's Republic of China and the transformation of value-added chains encouraged manufacturers to relocate production facilities, which led to an increased role of Indian companies in the production of consumer electronics. Industry players are more actively developing digital solutions for the automotive industry and mastering the production of electric cars.

More about the key trends of the year

The AI boom has had a key impact on the development of the personal devices market. Throughout the year, electronics manufacturers have been developing and implementing as many AI features into their products as possible to capture the attention of consumers. As noted in Issues 3 and 4/2024 of the Monitor, the demand for laptops with AI features was several times higher than for conventional devices. Developers of phones, tablets, and other mobile devices were actively refining operating systems to attract customers. The greatest market pressure in this matter was experienced by Apple, the expectations of investors to which as an industry leader are high. Apple's stock price has fluctuated under the influence of the company's announcements about the introduction of new AI features into devices — when the company announced the imminent introduction, the quotes rose, and then fell as a result of announcements about the postponement of the release. At the moment, a number of AI features have already appeared in iOS, however, the finalization is still in progress.

Despite the AI factor, **demand for electronics has declined compared to 2023 and companies have been developing alternative business areas** — companies from developed countries that do not integrate AI features into products have reported declining sales and are moving into cloud computing, while contract manufacturers continue to switch to the production of components or server hardware amid low demand.

During 2024, there was an active discussion about **reformatting production chains and reducing dependence on China.** Apple became a leader in this issue — over the past year, the US company, together with contract manufacturers, has set up the assembly of flagship smartphone models in India, increasing production volumes in this country by several times (see Issue 3/2024 of the Monitor). This trend is not only due to Apple's desire to diversify its risks, but is also caused by the growing tensions between the US and China, where the company's sales are declining. HP and Lenovo announced the need to diversify their supply chains, and in Q4 2024, Microsoft, Dell and HP began to increase component inventories in anticipation of a likely increase in customs duties following the change of administration in the US.

Strong growth of electronics manufacturing in India. India's Dixon has emerged as the leader in revenue growth among consumer electronics manufacturers in 9M 2024 (see Issue 4/2024 of the Monitor). Another Indian company, Tata Electronics, is actively buying out the production facilities of Taiwanese contract manufacturers Winstron and Pegatron in India and is targeting revenues of $10 billion by the end of 2024.

The demand for digital solutions and electronics, including sensors, components, and chips, is growing from the automotive industry. In this regard, **IT companies seek to integrate into the automotive industry and cooperate with automakers to expand the technology ecosystem, increase the market, and obtain new contracts**. At the beginning of 2024, this trend was particularly evident in China — Xiaomi presented an electric car of its own production and shipped more than 130 thousand cars in 2024 in the Chinese market. This experiment allowed not only to develop a new business direction of the company, but also to increase shipments of smartphones in 2024, as well as to remain among the leaders in terms of revenue growth. The first electric car was announced by Chinese smartphone maker Meizu, while Huawei in partnership with automakers Chery, BAIC, Changan Auto has already released several electric cars and announced new projects at the end of the year.

Outlook for 2025

Rising demand for AI functions in mobile devices, increasing sanctions pressure and rising supply chain risks will remain the key industry trends in 2025, in our opinion. Additional industry trends will be integration into new business lines in the context of insufficiently high demand for electronics and India's increasing role in global production chains.

AI technologies will continue to have a major impact on the development of the industry. Presumably, competition between companies for the most advanced artificial intelligence algorithms will grow in 2025. While in the early 2000s, competition in smartphone development was mainly between developed countries, now and in the future, companies from developed and developing countries will be competing. Further improvement of AI functions will depend on several key factors, including consumer demand, regulation of AI and data processing, and the availability of advanced components ("hardware") for AI functioning.

The consumer electronics industry is facing a major transformation due to the high probability of tariff duties and export controls imposed by the US and China. **AI technologies have become strategic, which may lead to tighter restrictions** to not only slow down the development of AI to the maximum extent possible for a rival party, but also to limit the technical capabilities of personal devices to support this technology. Presumably, the U.S. will increase pressure on third countries and seek to limit the market for "Chinese AI" in them by promoting bans at the legislative level.

Supply chains are likely to continue to undergo transformation, with manufacturing clusters, as in 2024, being created outside and relocated from China. This will drive growth in third-country manufacturing and investment in the formation of new supply chains. India, whose technological development strategy is aimed at developing domestic advanced technologies, components and microcircuits, may become a new growth point in 2025 and a place of attraction for investments from developed countries, including the United States.

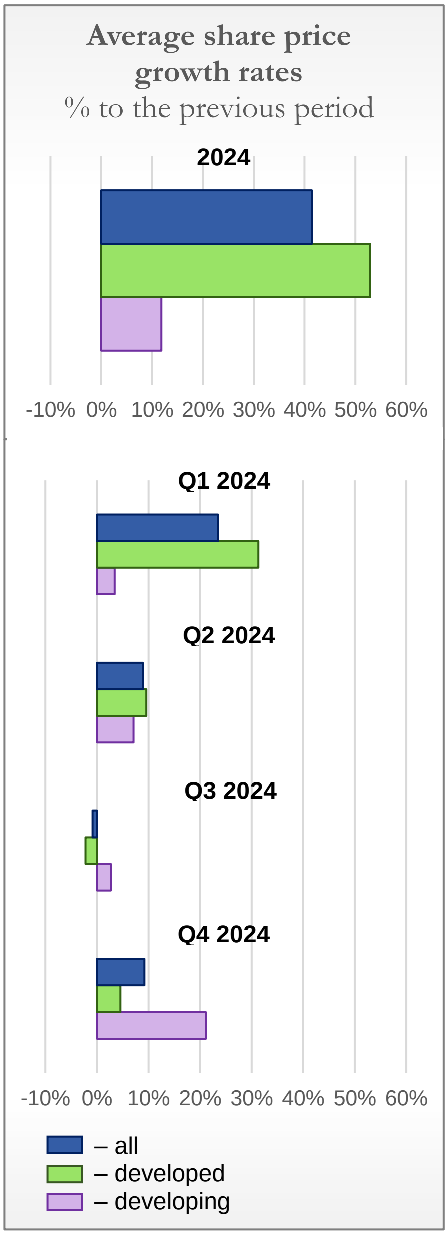
Companies will be inclined to develop **new business areas** to reduce the impact of political factors on revenue and profits. Taking into account all the risks and low demand for consumer electronics, it is likely that industry representatives will further diversify into other lines of business and go beyond the IT industry, following the example of Xiaomi.

INDUSTRIAL IT EQUIPMENT

Investment climate

The investment attractiveness of global industrial IT equipment manufacturers in 2024 was at a high level, with an average share price increase of 41%. Developed country companies demonstrated the highest growth due to their technological advantage and leading positions in the global market — their share price increased by 52% on average. Companies from developing countries, represented by Taiwanese and Chinese manufacturers, showed more modest results (+12%).

Investors valued **US suppliers of server hardware, AI accelerators and computing devices** most highly during 2024, including Supermicro (+180%), Nvidia (+176%), Dell (+124%), and Arista Networks (+95%). Leaders among companies from emerging markets in this segment were Taiwan's Accton (+39%), as well as China's Foxconn (+25%) and NAURA (+25%). The first two have production facilities in developing countries, while NAURA is a leading Chinese semiconductor equipment and components manufacturer, thriving despite sanctions as a result of very high demand in the domestic market.



It is noteworthy that, in accordance with the trends noted in Issues 2, 3 and 4/2024 of the Monitor, the share prices of **telecommunications equipment vendors** decreased or remained at the same level compared to 2023. The quotations of Chinese ZTE fell by 11%, Finnish Nokia by 2%, and American Cisco Systems remained virtually unchanged (+0.2%). It is worth highlighting the Chinese manufacturer Unisplendour, whose share price was below the level of 2023 by 14%, despite the quarterly growth of the share price during 2024. Such dynamics is explained by the high value of the company's shares in 2023 and the US sanctions against the Chinese technology industry in 2024.

In general, during the year, the shares of both developed and developing countries are characterized by general upward and downward trends. Growth peaked in Q1 2024, but then slowed, and in Q3 2024, more than half of the industry players saw their share prices fall. At the end of the year, growth resumed, with companies from developing countries, including Chinese manufacturers, significantly outperforming developed countries.

Trends 2024

The IT equipment industry in 2024 stood out among other sectors of the global economy with high growth rates and continued intensive development until the end of the year. The key factors were the boom of artificial intelligence, the growth in demand for server computing, the drop in revenue of telecommunications equipment manufacturers and the impact of sanctions on the activities of companies operating in the Chinese market or importing components from China.

More about the key trends of the year

The influence of artificial intelligence has increased due to the widespread adoption of this technology in almost all spheres of society, which is driving demand for computing power for data processing. As of Q1 2024, AI accelerators and server hardware manufacturers, including Supermicro, Foxconn, Nvidia, and others, are leading the revenue growth. The development of AI has led to a high demand for the networking equipment necessary for the operation of deep neural network models. This demand has arisen not only from companies in the IT sector, but also from other industries, including the automotive sector. Against the background of growth, the world's leading developers of computing power and components have multiplied their revenues. Thus, the highest growth rates (+135% at the end of 9 months of 2024) were achieved by the American Nvidia. This trend also had an indirect impact on companies producing equipment for semiconductor production.

Sanctions have had a serious impact not only on companies' operations, but also on production chains. Starting from Q1 2024, sanctions pressure on companies from China intensified. Restrictions affected both the access of telecommunications equipment manufacturers to foreign markets and Chinese IT companies in terms of servicing and importing high-tech equipment. This trend was particularly pronounced in the second half of the year. An illustrative case was the adjustment of annual revenues by the Netherlands-based manufacturer ASML, which is the world's leading supplier of lithography equipment, including the largest on the Chinese market. Another relevant example is Nvidia's policy of selling graphics accelerators for the PRC market. Due to export controls, advanced components are restricted to sales in the Chinese market, however, Nvidia has developed a special model of AI accelerators that are not subject to sanctions.

Stably low demand for telecommunications equipment was the reason for the companies' revenue decline in 2024. Due to low demand in emerging and developed markets, Nokia, Ericsson, Cysco Systems were constantly among the industry outsiders. Despite signing new agreements in the markets of Asia and Africa, the companies were unable to maintain their revenue at the level of 2023. Moreover, at the end of the year, a decline in revenue of Chinese ZTE became evident (see Issue 4/2024 of the Monitor), which may indicate similar processes in the market of China and other developing countries. Another Chinese telecommunications equipment supplier Huawei was constantly hit by sanctions either from the US or European Union countries during the year.

Amid low demand, Western telecom equipment suppliers struggled to win new contracts, including in India, which is actively pursuing a digital development strategy, expanding network access and coverage. In this regard, Ericsson and Nokia are actively competing for the growing Indian market, almost simultaneously signing contracts to supply equipment to local telecom operators.

Outlook for 2025

The key global factors determining the development of the IT equipment industry in 2025 will be further development of artificial intelligence and related technologies, increased sanctions pressure and, as a result, the emergence of shocks in global production chains. As sectoral or local trends, we should note India's potential in information and communication technologies (ICT) and increased investment into Indian market by leading IT industry companies in setting up production facilities outside China.

Despite investors' pessimistic assessments of AI prospects at the end of 2024, the **development of artificial intelligence will continue to have a major impact on IT equipment manufacturers** and the IT industry as a whole. Leading IT companies, having announced plans at the end of the year to expand server hardware and GPU production facilities in Mexico and the US, will be increasing investments and forming new production chains. It is likely that due to the changing political courses of the world's leading countries and the increasing role of AI in all spheres of life, the amount of investment in AI development by governments will also increase significantly, which will lead to the formation of a race for leadership in this area. The key actors in this race will be the US and China, and the rivalry between the two economies will be accompanied by severe restrictions on imports of critical technologies, equipment, access to each other's research and development, and aggravation of bilateral relations.

An undoubted trend in 2025 will be an increase in the number of sanctions in the ICT sector and a new confrontation between the US and China with a focus on sensitive technologies. In Q4 2024, companies from developed countries were already preparing for higher tariffs by purchasing intermediate components for production lines. Similar to 2017-2019, there will be a deeper transformation of value chains under the influence of such factors as higher export and import duties, IT industry representatives' desire to hedge risks and move production processes outside China. The assembly of graphics accelerators, networking and other equipment will be increased in such countries as India, Vietnam, Malaysia and Mexico.

Throughout 2024, high growth rates in the IT industry and other areas have been observed in India (see Issues 2, 3 and 4/2024 of the Monitor). This suggests that over the next few years, **India's position in ICT will improve significantly** and its role in the industry's value chains will increase substantially. This trend will certainly work in conjunction with other factors, however, the country's domestic policy aimed at developing advanced technologies and the existence of competitive advantages in a number of industries, such as software, play a significant role.

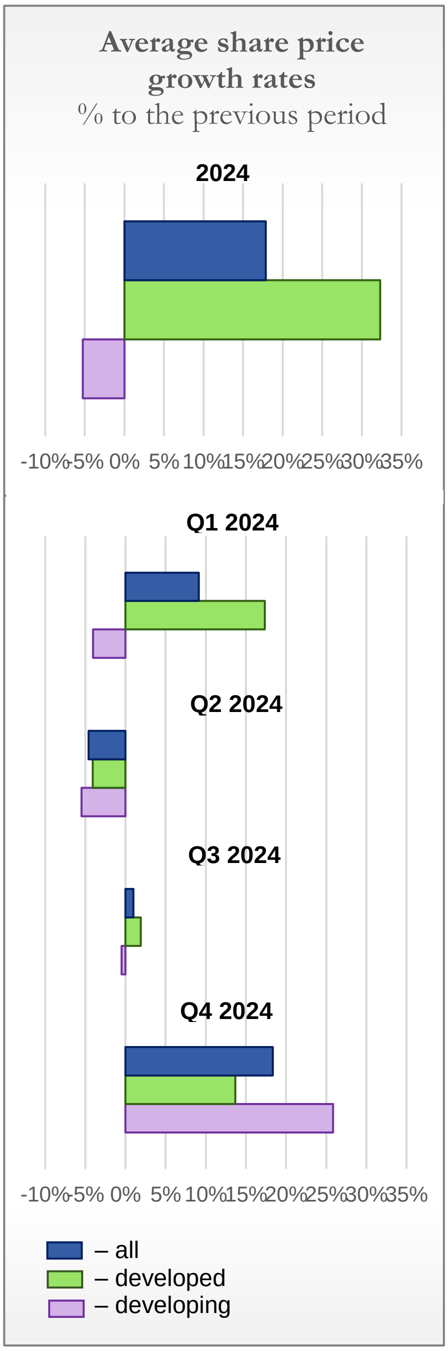
Increased costs in IT companies to set up manufacturing facilities outside China. At the end of 2024, key contract manufacturers have announced plans to set up manufacturing facilities in Mexico and the US, a telling example of investment in new manufacturing facilities outside China. A significant proportion of contract manufacturers are located in Taiwan and their production chains are closely linked to component suppliers or assembly lines in China. In this context, and in the event of a deepening confrontation between the US and the PRC, the process of relocating and setting up production facilities outside China may proceed more rapidly. Third countries, including India, may become one of the directions of this process. Presumably, contract manufacturers in India, which have bought out Taiwanese companies, will also increase investment to expand IT equipment production in the domestic market.

SOFTWARE

Investment climate

Investors were largely positive about the software market in 2024. The share price of global software companies rose by an average of 18% relative to 2023.

Companies from developed countries received more favorable valuations due to the growth in the value of shares of American CrowdStrike Holdings (+106%) and Palo Alto Networks (+46%), as well as Canadian Constellation Software (+49%) and German SAP (+53%). CrowdStrike Holdings and Palo Alto Networks specialize in information security software, which is becoming increasingly in demand for storing large amounts of corporate and customer data on cloud storage. One of the key factors of Constellation Software's share price growth can be considered a number of completed M&A deals, which brought the company free cash flow, including deferred payments. SAP, in turn, notes the success of its cloud division in 2024, in which half of customer orders included a request for AI technology. All of the above companies demonstrated stable revenue growth in 2024, which reinforced positive investor sentiment.



Share prices of **emerging markets companies** showed an average decline of 5%, however, it is necessary to distinguish between the dynamics of Indian and Chinese software developers. By the end of 2024, only PRC companies fell in value — by 26% on average, while Indian companies gave investors confidence in their activities, resulting in an average increase in the value of their shares by 26%.

The least optimistic estimates for 2024 are for **Chinese companies** ZWSoft (–47%), Fujian Foxit Software Development (–33%) and Kingsoft Corporation (–32%). Despite the positive dynamics of revenue change and the overall favorable situation on the Chinese market of industrial equipment for which software is purchased, investors consider ZWSoft's R&D expenses suboptimal, and Fujian Foxit Software Development raised concerns about low free cash flow. Kingsoft Corporation, in turn, was experiencing difficulties in its Kingsoft Cloud division.

All **Indian software companies** have witnessed share price gains of more than 20% at the end of 2024, driven by favorable market conditions due to rising demand for AI-based solutions and cloud computing.

The quarterly dynamics of share prices generally corresponds to the annual dynamics. The exception is Q4 2024, when the valuation of developing countries' companies turned out to be more optimistic than that of developed countries. This is due to the trends in the Chinese market, where national software developers showed a significant increase in the share price relative to the previous quarter. Thus, quotations of Fujian Foxit grew by 65%, Insigma Hengtian by 55%, ZWSoft by 45%. The key drivers of this growth can be attributed to the high demand from the government and private sector, caused by the need to switch to national software due to the U.S. sanctions pressure.

Trends 2024

For software companies, 2024 was a year rich in strategic partnerships that were formed within the industry to jointly develop artificial intelligence and cloud technologies and reduce the market power of the largest players. Strategic partnerships also occurred vertically with software buying companies. The demand for AI and cloud technologies has driven not only partnerships, but also self-investment by software vendors in infrastructure development for their operations — the geography of such investments included the Middle East, Europe and Asia-Pacific.

More about the key trends of the year

Strategic partnerships became the most prominent trend in the software industry in 2024 — companies entered into horizontal agreements with other software vendors, which accelerated the development and implementation of new AI functions in products, as well as allowed to improve cloud technologies and increase the security of developed products. The breadth of industries within which vertical partnership agreements took place is also interesting — food industry, telecom, transport and logistics, automotive industry, FMCG, aerospace, education, retail and e-commerce, and others. A special mention should be made of the medical industry, which is discovering opportunities for the application of AI technologies, in particular, thanks to the American Microsoft and Oracle, which are most actively involved in the development of software for the healthcare sector.

Lawsuits and antitrust investigations accompanied the activities of major software market players throughout 2024. Adobe, Microsoft, IBM, CrowdStrike, etc. were involved in ongoing and new proceedings in the EU and the US. It is important to note that the lawsuits were not only antitrust in nature. One of the most striking proceedings was a lawsuit filed by the American airline Delta Air Lines against Microsoft and CrowdStrike after a large-scale failure of Windows systems due to a defective version of the CrowdStrike Falcon security software update.

Investment activity was at a high level throughout the year. As in the case of horizontal strategic partnerships, cloud technologies and artificial intelligence were the key reasons for investment. Companies invested both in infrastructure in Europe, the Middle East and Asia-Pacific and in innovative startups. Some startups, such as Finnish AI startup Silo AI, Israel's Run:ai, etc., have been the targets of takeovers by major industry players. An unusual area for software vendors to invest in Q4 2024 was small nuclear reactors, which can provide data centers with the necessary amount of energy.

Outlook for 2025

The key factors affecting software vendors in 2025, in our view, will be (1) increased use of artificial intelligence, (2) emphasis on cybersecurity, (3) demand for more energy, and (4) increased protectionism by the U.S. and China.

If players react quickly, this may lead to both increased competition in certain areas, such as the medical industry, and increased monopoly power in certain segments where cloud technologies and AI can be used. Spatial computing is also becoming increasingly in demand, requiring the development of software for the use of virtual, augmented and mixed reality technologies. It is also worth mentioning large language models (LLMs), which are currently not flexible enough for companies buying them due to their scale and are already sometimes inferior to the combination of several smaller AI models. It is expected that the global software market in 2025 will see a greater number of small language models customized for specific business tasks.

The issue of cybersecurity is becoming more and more acute due to the transmission, storage and processing of huge amounts of information, as well as the spread of quantum technologies. There is a need to develop new data encryption mechanisms, in particular, protecting against quantum computers, which requires the latest software. Companies developing cybersecurity solutions are already experiencing increasing demand, which is translating into revenue growth. We expect this trend to continue into 2025.

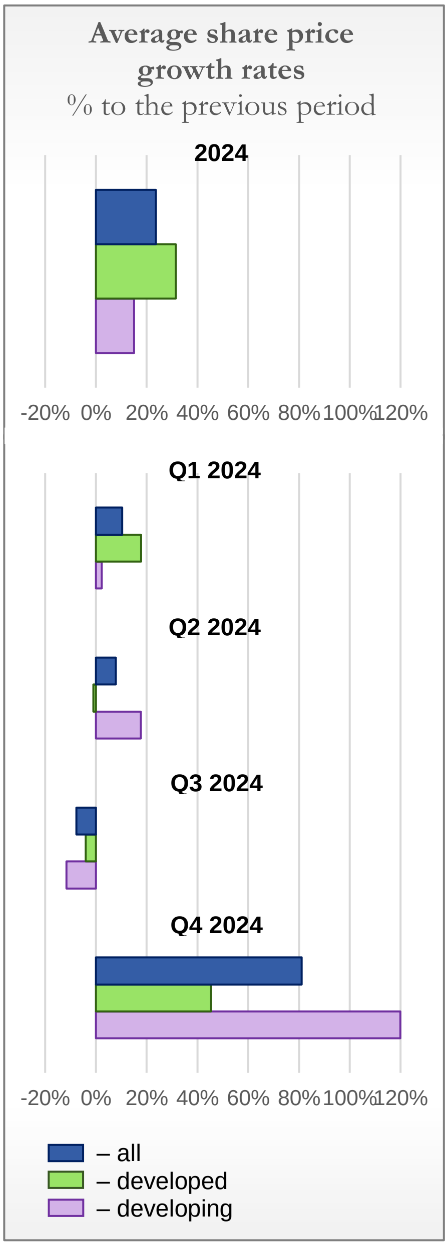
The need for more energy is already pushing companies to invest in their own energy capacity, which could intensify in 2025 and involve more software developers. Industry players may also face a sharper focus on contributing to carbon neutrality goals because the industry is energy-intensive. The choice of small nuclear reactors was not a coincidence, as nuclear energy is low-carbon. Increased investment in green technologies and energy sources consistent with the Sustainable Development Goals can be expected.

The trade war between the US and China will continue to put pressure on software developers. Cross trade restrictions and legislation restricting the use of foreign technologies are appearing in both countries. Under the influence of D. Trump's trade policy, which promises to be more aggressive than his predecessor, we can expect an acceleration of the transition of Chinese software manufacturers to national technologies, as well as a more active transfer of Chinese enterprises to software developed by local companies.

Investment climate

In 2024, the prospects for the platform business were rated quite high by investors, as evidenced by the increase in the value of shares of the world's largest platform companies, which averaged 24% over 2023.

Companies from developed countries received a more optimistic assessment than those from developing countries — the average increase in the value of their shares amounted to 31% vs. 15%. This position was achieved thanks to the American Meta Platforms (+111%) (recognized as an extremist organization in Russia and banned), Uber (+74%) and Amazon (+63%). In addition to the fact that these companies demonstrated stable growth in daily active users throughout the year, Meta Platforms, despite the growth of capital expenditures on investments in servers, showed high profitability, as well as for the first time in its history paid quarterly dividends in Q1 2024. Uber increased its investment attractiveness by entering into an agreement with China's BYD as part of its plan to fully switch to electric vehicles by 2040. Amazon demonstrated stable operating results, in particular, due to its cloud division. South Korea's Kakao (–15%) and Naver (–4%), were pessimistically valued, which can be attributed to slowing demand growth in the domestic e-commerce market. Kakao, in particular, was affected by the lack of new game releases, as well as increased competition in the Japanese online comics market.



Among the **emerging market companies** with the largest share price gains in 2024 are Uruguay's MercadoLibre (+60%), Russia's OZON (+53%), Yandex (+51%) and China's Trip.com Group (+55%). The key factors behind the market's positive valuation of MercadoLibre can be attributed to the growth of its advertising division, the application for a banking license in Mexico, and the recovery in demand in Argentina. Like the Uruguayan e-commerce platform, OZON's shares rose thanks to the fintech and advertising segments. For Yandex, the main event of the year was the change in the ownership structure — the new parent company of the group instead of the Dutch Yandex N.V. became the International Company Joint Stock Company "Yandex" registered in the Kaliningrad region, RF, the main owner of which is a consortium headed by managers of the parent company and private investors. The market also notes Yandex's growth potential related to fintech, online commerce and autonomous transportation, which includes cabs, trucking and delivery by robot couriers. China's Trip.com Group, which specializes in travel booking services, showed revenue growth in all business segments, including the international division, which is considered to be promising. However, most Chinese platform companies showed negative dynamics, which is a consequence of high competition in the Chinese online advertising market, the unstable economic situation in the domestic market, as well as the US restrictive pressure on Chinese e-commerce platforms (see Issues 3 and 4/2024 of the Monitor).

Within the quarterly dynamics, the most interesting is Q4 2024, in which emerging market companies showed an average 120% increase in share price. The drivers of this growth were Chinese platforms, which were valued much more pessimistically during the year. The main drivers were the Chinese market conditions at the end of the year and artificial intelligence technologies. Firstly, Q4 2024 saw the main sale of the year, the PRC discount day (11.11), which not only boosted sales revenue but also generated additional advertising revenue for platform companies. Second, the Chinese Central Bank initiated a stimulative monetary policy in the fall of 2024, which improved consumer sentiment and was positively received by the market, and at the end of the year, it announced monetary policy easing in 2025, which also influenced investor optimism. Thirdly, the adoption of AI solutions by Chinese platforms and investment in developing cutting-edge technologies have become positive signals for investors.

Trends 2024

In 2024, platform companies have been actively implementing AI into their products in response to growing demand from users, and as a result of regulatory and market wariness on security issues. Antitrust authorities around the world pressured the largest platforms. Chinese companies were forced to find new strategies due to weak domestic demand and restrictions from US and European governments.

More about the key trends of the year

Artificial intelligence, as in the entire IT sector, has found a vivid reflection in the activities of platform companies. Meta (recognized as an extremist organization in Russia and banned), Amazon, Google, Tencent, Baidu, Alibaba, Adobe, etc. have launched a number of chatbots with AI, and similarly to other market players have optimized the operation of their platforms. For such active utilization of latest technologies, companies have invested in cloud and other digital infrastructure in European and Asian regions. In addition, a number of major companies, including Amazon, Google (Alphabet), Meta (recognized as an extremist organization in Russia and banned), OpenAI, X.AI and China's Zhipu AI have already made voluntary commitments to AI safety.

Antitrust investigations and other legal restrictions put pressure on platform companies in 2024. Alphabet, Meta Platforms, Booking Holdings, Alibaba, JD.com, etc.

were under accusations. Google has the widest geography of antitrust proceedings — its search engine algorithms are accused of non-compliance with competition laws in Japan, the US, the EU and Turkey. Other legal restrictions include the introduction of protectionist measures. Chinese e-commerce platforms, notably Temu (PDD Holdings), are capturing shares in the European and US markets through low prices. This has forced the U.S. to consider limiting duty-free imports of low-value goods to $800, and the European Union to increase controls under the Digital Markets Regulations (DSA).

Entering into long-term partnerships become a key strategy of platform companies in 2024, which was used to diversify operations and markets. Partnerships were entered into with the medical industry, automotive industry, FMCG companies and retail firms. Platforms have also collaborated with each other to develop new tools using AI and to achieve other common goals. For example, China's Alibaba and Weibo partnered to attract advertising to their platforms in the domestic Chinese market.

Outlook for 2025

The main factors that will drive the platform business in 2025, in our opinion, will be (1) continued low consumer demand in the Chinese market, (2) uncertainty and rising costs in the logistics services market, (3) sanctions and protectionism, and (4) prospects for the introduction of artificial intelligence technologies.

Weak demand and unfavorable conditions in the Chinese market will continue to affect the position of major national players. All platform companies are forced to compete in the advertising market, which may shift the focus of the business from core business development to enhancing attractiveness to advertisers. Weak demand from consumers is hampering the development of e-commerce. Under these circumstances, social networks are expanding cooperation in the field of advertising. Platforms will have to develop fundamentally new strategies to strengthen their positions, for example to focus on gaming products, which are currently in demand in the Chinese and other Asian markets. Although the Chinese market showed signs of recovery in consumer activity at the end of 2024, this trend is unlikely to accelerate in 2025.

Uncertainty in the logistics services market, the rising cost of supplies, and the lack of control over processes when outsourcing transportation have already begun to incline platform companies, particularly e-commerce companies, to invest in developing their own logistics areas. Uruguay's MercadoLibre, US-based Amazon, and China's JD.com have all started investing in optimizing their supply chain management in 2024. In 2025, we can expect this trend to intensify in the platform business.

Sanctions and protectionist sentiments of governments will increase pressure on global platform companies. The US and the EU have already started to implement new legislation, restricting Chinese e-commerce platforms, which are penetrating the European and US markets thanks to low prices. In terms of sanctions, one of the highlights of early 2025 was the blocking of the TikTok platform for users in the US. The platform, owned by Chinese private internet holding company ByteDance, was to be blocked unless it agreed to sell its US division to a local investor. The blocking law went into effect and was delayed for 75 days by D. Trump the next day. The decision adds uncertainty to the strained economic relationship between Washington and Beijing. In 2025, we expect tensions between platform giants, particularly e-commerce and social media platforms, and governments to intensify.

Artificial intelligence technologies are transforming the market for B2C platforms. All major platform businesses have implemented AI features, most often in the format of chatbots. Search services have become more attractive with new search features. However, there is a question of monetization, as free provision of AI-enabled services can act as a competitive advantage, but the implementation of such technologies requires high acquisition or development costs, as well as maintenance of infrastructure capacity. In 2025, we expect platform companies to test various strategies for providing users with access to AI technologies.

TELECOMMUNICATIONS SECTOR

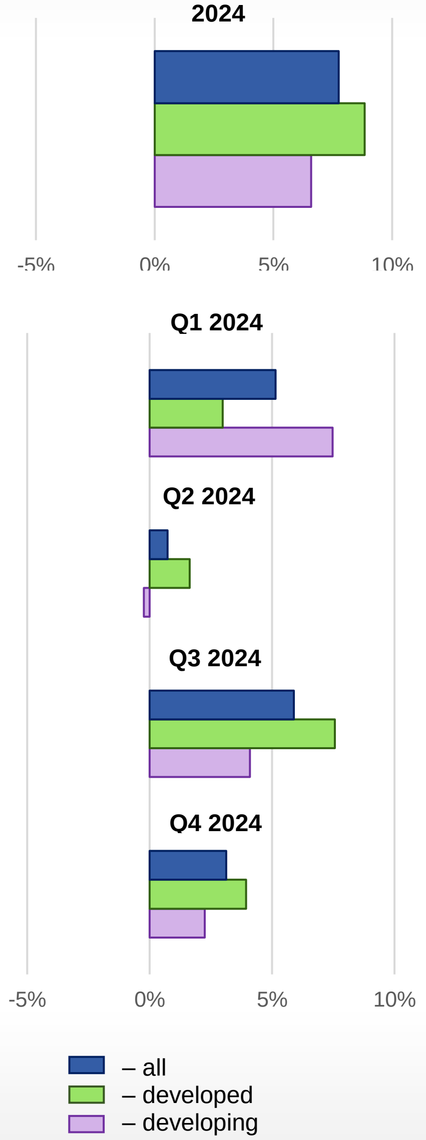
Investment climate

The global telecommunications sector showed very modest growth in 2024. The share prices of the largest companies grew by an average of 8% against 2023. Such dynamics is explained by the saturation of markets, especially in Western countries, their low growth rates and, consequently, the companies' revenues (see Issues 3 and 4/2024 of the Monitor). The difference between the growth of shares of companies from developed and developing countries is insignificant.

Investors were more positive about the prospects of companies operating in emerging markets. The share price gains of India's Bharti Airtel (+52%) and Reliance Jio (+22%) were largely due to trends in the growing domestic market — the companies are developing and expanding the market by investing in infrastructure, which has a positive impact on revenue and investors' assessment of their prospects. Millicom International, which operates in Latin American markets under the Tigo brand, is up 37%; however, the “low base” effect in early 2023, when the company's share price fell significantly after the end of the COVID-19 pandemic, should be taken into account. Among the top five operators in terms of value growth in 2024 was South Korea's KT, whose shares rose 24%. This growth is most likely related not to financial results, but to structural changes, asset optimization and development plans.

Average share price growth rates

% to the previous period



South Korean MTN Group (–28%) and British Vodafone (–14%) stand out as outsiders in the telecommunications industry. Investors are pessimistic about MTN Group's prospects due to political instability in African markets and the company's winding down of operations amid these problems, which was also the key reason for the 19% decline in its revenue in 9M 2024. Vodafone's share prices fell due to weak results and loss of share in the segments of cable TV and fixed telephony services in Germany, one of the key markets for its business.

During the year, the dynamics of share prices of developed and developing country operators generally moved in the same direction. It is noteworthy that in Q2 2024 the shares of both groups of companies lost value, however, developed country operators were able to instill greater confidence in investors in the second half of the year due to the diversification of technological solutions provided and the development of joint projects with the IT sector.

Trends 2024

In the face of weak demand, the world's leading telecommunications operators actively pursued M&A deals, especially in the European market. Due to low revenue growth rates, key industry players sought to diversify their operations by introducing new technologies and entering into partnerships with IT companies. Such technologies include artificial intelligence, cloud computing, satellite communications, and cyber security. In emerging markets, a number of operators have signed agreements to deploy and test 5G equipment.

More about the key trends of the year

Consolidation and restructuring processes were most active in early 2024 in the highly competitive European market. Low profits and lack of funds for modernization forced operators to initiate mergers and acquisitions, which industry regulators began to treat a little more favorably. In the middle of the year, the US market was also affected by restructuring processes (see Issues 1 and 3/2024 of the Monitor).

In the context of weak demand and the AI boom, **diversification and collaboration with IT companies** has become a key growth strategy for telecom operators, which during 2024 showed very intensive adoption in the development of AI products and offered communication services for the deployment of neural networks. Telecom companies are either deploying new features on their own or participating with IT companies to build data centers (DCs). During the year, a number of projects were entered into with data center providers to develop cloud services for businesses. In the second half of 2024, telecom operators began to pay close attention to satellite communications and joined the Direct-to-Device (D2D) standard, which allows information to be transmitted to two devices via satellite.

Commercialization of 5G infrastructure and launch of commercial 5G use in developing countries. The pace of 5G network deployment slowed significantly in 2024, but activity remained strong in emerging markets. Operators have been conducting test launches in countries where the technology has not yet been adopted and developing solutions and services to deploy 5G in business and manufacturing. A number of countries, including several developed countries, signed agreements with vendors to supply equipment, with Finnish Nokia being favored in the face of sanctions against Chinese companies.

Outlook for 2025

In 2025, the key trend in the industry will remain the participation of telecom operators in the creation and improvement of AI solutions and products. In addition, there will be continued activity in the area of cloud technology partnerships and improving cybersecurity standards. The development of communication networks using satellite technologies in low-Earth orbit will also continue.

The introduction and application of AI solutions is at the initial stage in the telecommunications industry, and this process will deepen and expand. This will improve the efficiency of communication networks and software due to AI's ability to analyze large data sets.

In the area of **cybersecurity**, operators will create additional structural units to combat viruses and malware, and apply AI technologies to monitor systems and detect vulnerabilities and digital threats.

Low-orbit satellite communications is a promising area of industry development. Telecommunications operators in partnership with satellite companies will not only be able to provide and expand access to communications in remote and hard-to-reach regions, but also provide a new communication service for emergency services.

The industry will continue to develop activities in the **cloud computing segment**, which may become one of the most promising areas for telecommunications companies. Cloud technologies have great potential and make it possible to replace part of the infrastructure required for network operation and information exchange.

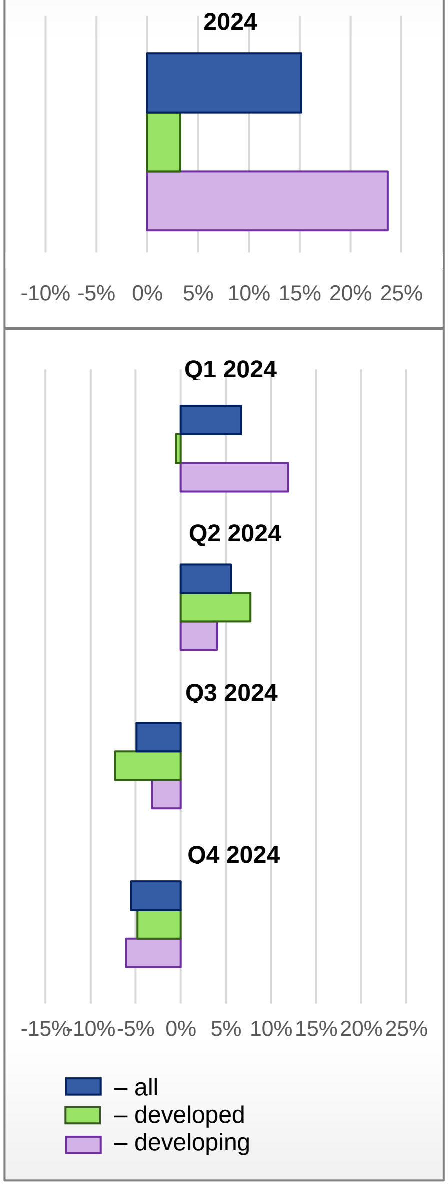
Investment climate

In 2024, investors were generally positive about the outlook for companies in the global energy sector, as evidenced by an average 15% increase in the share price of major oil and gas companies relative to 2023.

Companies from developing countries looked more attractive to investors mainly due to Indian Indian Oil (+71%) and Oil and Natural Gas Corp (+64%), as well as China's CNOOC (+53%) and Sinopec (+39%). The markets of China and India remain among the largest, even the slowdown in demand growth in China and general concern about this fact did not prevent the companies from growing in value. Russian companies Lukoil, Tatneft and Rosneft also showed high positive dynamics for 2024 — +20%, +28% and +9% respectively. First of all, it is necessary to note the value recovery effect — in 2022 quotations of Lukoil, Tatneft and Rosneft fell by 19%, 17% and 28% respectively. Oil and gas production is currently increasing, and high global oil prices also have a positive impact on the value of companies. In addition, Lukoil attracts investors with high dividends, Tatneft demonstrates high profitability and stands out for its environmental responsibility, and Rosneft pursues a long-term policy to reduce operating costs and is attractive due to the Vostok Oil project. It is worth noting that in December 2024 Rosneft ranked first in terms of capitalization in Russia. In contrast, Gazprom's quotations fell by 22% year-on-year due to an indefinite reduction in gas supplies to Europe and suspension of dividend payments.

Quotes of shares of **companies from developed countries** grew less significantly — the average increase in their value in 2024 amounted to 3% compared to 2023. Investors most positively assessed the U.S. Marathon Petroleum (+29%) and Valero Energy (+15%). Both companies grew in value in Q1 and Q2 2024, when the companies published excellent financial results for 2023. Marathon Petroleum also announced plans to reduce investment expenditures in order to increase free cash flow. Overall, due to capacity cuts, demand normalization and the Russian oil embargo, US refined product inventories declined, leading to high margins in the refining segment and

Average share price growth rates
% to the previous period



positively impacting US oil sector share prices. European players showed predominantly negative dynamics — Norwegian Equinor –12%, Austrian OMV –5%, British BP –10%. This was caused, in particular, by the reassessment of projects related to renewable energy sources, which began to be massively phased out in the second half of 2024 (see Issues 3 and 4/2024 of the Monitor).

In quarterly terms, the dynamics of the value of the largest players in the global energy sector was contradictory. While the first two quarters of the year saw overall growth, especially strong for Indian and Chinese producers, the third and fourth quarters saw a decline. This indicates the problems of the industry and the difficult environment in which companies operate (supply surplus, lack of discipline in OPEC+, trade wars and sanctions, weak demand in China, etc.).

Trends 2024

2024 began in the global energy sector with a continuation of the mergers and acquisitions (M&A) wave, driven by strong demand and high oil prices. In Q1 2024, asset purchases and sales were not linked to the green agenda, however, starting from the second quarter, there was a clear focus on renewable energy projects (RE). At the same time, the green agenda became an ambiguous trend in 2024 — some companies, convinced of the unprofitability of their green initiatives, curtailed them, while others, on the contrary, invested in new capacities and bought up assets.

More about the key trends of the year

The M&A wave that started as early as 2023 continued into 2024, covering regions such as North America, Europe, Africa and the Middle East. The activity was driven by good demand and high oil prices, hovering around the key level of $80 per barrel. Most of the consolidation processes took place in the US, with large players absorbing smaller ones, focusing on shale projects. It is important to note that many deals were cross-border in nature, for example, Saudi Aramco made its first S&P deal in the refining sector in South America by acquiring Chile's Esmax.

The **"green" agenda manifested itself in a mixed way** during the year. Companies continued to invest in renewable energy, often through strategic partnerships with other industry players and governments. Actions to minimize CO_2 emissions, capture and storage were also observed. In the second half of 2024, there was first an upward trend in the number of hydrogen projects and then a downward trend due to economic unprofitability. Companies around the world are also increasingly shifting their focus from renewable energy projects to liquefied natural gas (LNG). It is worth noting that among alternative energy sources, solar and wind power were the most frequently invested in, while biofuel production capacity was shutting down around the world. The issue of the economic unprofitability of some alternative energy sources has become quite acute, necessitating government support. An unusual manifestation of commitment to the green agenda was the strategy of diversifying core activities through investments in infrastructure for electric trucks in the EU by France's TotalEnergies and investments in hybrid and electric vehicle production by Saudi Aramco.

Outlook for 2025

The main factors that may affect the energy sector in 2025, in our opinion, will be (1) sanctions and geopolitical tensions, (2) growing uncertainty in energy markets, (3) the attitude of states to the prospects of renewable energy sources.

Increased sanctions pressure, primarily on Russia and Iran. In January 2025, the most extensive U.S. sanctions package against the Russian oil and gas industry came into force, in particular, Gazprom Neft and Surgutneftegaz, as well as 183 tankers were directly sanctioned. In early February 2025. D. Trump signed a memorandum on restoring the policy of maximum pressure on Iran, one of the goals of which is to reduce Iranian oil exports to zero. Sanctions pressure from the Western countries will lead to higher prices on the oil market, increased production by alternative suppliers (Saudi Arabia, the USA), new risks in oil transportation, etc.

The **growing uncertainty** about the energy crisis provokes states to build up strategic reserves. The most vulnerable were the countries of the Asian region. We can expect an increase in strategic reserves in 2025, which will be accompanied by investments in the lease or purchase of oil storage facilities around the world, as well as the conclusion of long-term agreements for the supply of energy resources between states and companies. The economic situation in China will also continue to affect energy markets — oil and gas companies' earnings could decline if Chinese demand pressures on prices. Another factor increasing uncertainty will be D. Trump's policy. The new US president plans to significantly increase domestic production and to this end has already imposed duties of 25% on Mexico and Canada and 10% on China. We expect trade wars to escalate to include the energy sector in 2025, which will create risks for oil and gas companies around the world.

The attitude of state authorities to the prospects of transition to renewable energy sources will directly shape the activity of companies in this area. At the moment, many private investors no longer support innovative projects related to biofuels, hydrogen and other RES-oriented projects. Companies rely on state support, which may either continue into 2025 or be redirected towards maintaining energy stability rather than achieving sustainable development goals in the future.

AUTHORS

Olga Klochko — Project manager, PhD in Economics, Associate Professor, Department of World Economy, HSE University, globalbusiness@hse.ru

Industries: Automotive industry
Iron and steel industry
Transport and logistics
Semiconductor industry
Telecommunications

Yulia Tyushkevich — Lecturer, Department of World Economy, HSE University

Industries: Pharmaceutical industry
Software
Platform business
Oil and gas industry

Danil Piskunov — Research Assistant, Student of the Master's Program "World Economy", HSE University

Industries: Consumer electronics
Industrial IT equipment
Telecommunications

Anastasia Akhunova — Lecturer, Department of World Economy, HSE University

Industries: Pharmaceutical industry

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