KONRAD RACZKOWSKI

POLISH ECONOMIC OUTLOOK

TRENDS AND SCENARIOS

Warsaw, June 2023

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Wydawnictwo Naukowe
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Foreword

The report *Polish Economy 2023. Trends and scenarios* was written as a collaboration between Polish Trade and Distribution Organisation (POHiD) and Cardinal Stefan Wyszyński University's Center for World Economy led by prof. Konrad Raczkowski. The publication presents analyses of the current economic and geopolitical situation worldwide and the development prospects for the Polish economy against the backdrop of global economy. The report describes the context in which the economy and trade sector will function in the coming years and identifies the key challenges. As trade organisations, we at POHiD and EuroCommerce, understand all too well the magnitude of the shift currently faced by the European and global economy and how difficult it is to properly read into and interpret economic phenomena. This is why this publication should be welcomed with great satisfaction and acknowledgement as it may serve, in many areas, as a guiding light for the trade strategies and investments both those under way and those being modified, while being a compendium of knowledge to inform economic policy.

POHiD brings together 18 largest international retail chains operating in Poland: Auchan, Carrefour, Castorama, Decathlon, E.Leclerc, IKEA, Biedronka, JYSK, Kaufland, KiK, Leroy Merlin, Lidl, MediaMarktSaturn, OBI, Pepco, Schiever, Transgourmet, Żabka. The mission of POHiD is to support retail sector in Poland and to engage in ethical business which respects the principles of economic freedom and unrestricted access to market for all economic actors.

Retail chains being members of POHiD have been a major element of Poland's economic landscape for over 30 years, being a driving force for retail and for the economy as a whole. They invested more than EUR 60 billion in our country, creating over 250 thousand jobs, partnering with more than 5 thousand Polish suppliers and agricultural producers and offering 95% Polish products in their product mix. For years they have undertaken actions to enable more than 250 Polish producers and suppliers to enter international markets. The value of Polish products being exported by foreign branches of retail corporations stands at PLN 4.47 billion per year.

COVID-19 related restrictions in place, the war in Ukraine, the biggest energy crisis since 1970s and the galloping inflation have contributed to the global economic slowdown. Polish retail is greatly affected by the consequences of the global economic crisis, tackling the high operating costs on the one hand and a major decline in consumption on the other.

EuroCommerce and POHiD are taking a number of measures to mitigate the negative consequences of inflation both in Poland and in Europe. As revealed by a McKinsey report prepared in collaboration with EuroCommerce, food prices in Poland are among the most competitive across the EU. The anti-inflation policy results in a greater pressure on retail margins, which are already low. Another challenge to the sector is expenditure in the areas of sustainable development and digitalisation, as well as the growing costs resulting from the increase in energy prices, record-breaking inflation rates, supply chain disruptions and the war in Ukraine. According to the report, the European-wide retail sector requires a transition by 2030 as regards sustainable development, digitalisation as well as skills and talents, for which the sector will spend ca. EUR 600 billion. These investments are a *sine qua non* condition for maintaining the future growth and competitiveness of the retail market in Europe and Poland.

Retail chains being members of POHiD have a significant impact on the price stability on the Polish market. The high competitiveness within the sector in Poland has a dampening effect on prices. As a result, food prices in Poland are much lower than in the neighbouring countries. The retail sector has invested huge funds to make sure the increase in prices at which they purchase products from producers is not fully passed on to customers. With an economy of scale, large purchasing volumes, improved energy performance and low margins, retail prices are being kept at the lowest possible level.

Ever since the onset of the pandemic, and especially since the breakout of the war in Ukraine, retail chains have pursued a pricing and promotional policy aimed to support Polish families tackling the negative consequences of inflation. A significant consumption slowdown is the outcome of consumers' declining purchasing power. According to Statistics Poland (GUS) data for March of this year, we are dealing with a 7.3% YoY drop in sales. Surveys by independent research centres reveal that as many as 70% Polish people are cutting their living expenses, including food. In the lowest-income group, the percentage of those who cut their expenditure on food is as high as 66%

POHiD member companies absorb the costs of price reductions, for example through margin reductions, thus avoiding passing on the costs to suppliers or consumers. This way they effectively protect Polish families from food poverty, in many cases preventing stigmatisation or social exclusion.

Legislative environment is a major risk factor for the stability of retail prices. Retail is tackling the retail tax and many fiscal burdens. Retail chains are among the largest CIT payers, ranking second when it comes to the value of public levies paid. In 2021 state budget receipts amounted to a total of PLN 5.7 billion (EUR 1.27), of which PLN 3.1 (EUR 0.69 billion in CIT and PLN 2.6 billion (EUR 0.58 billion) in retail tax. In 2022 the amount of retail tax went up to PLN 3.3 billion (EUR 0.74 billion).

The increase in prices of raw materials and energy source materials entails an increase in the costs along the supply chain, representing a huge challenge to the sector. In the face of the energy crisis and growing electricity prices, retail chains follow an energy-saving policy. They also invest in renewable energy sources. This way, not only do they reduce energy consumption costs, but they reduce their carbon footprint as well.

Renata Juszkiewicz
President of the Managing Board of POHiD
Vice-President EuroCommerce

Introduction

Ever since the official declaration in 2018 of the trade war of the United States with China, the Covid-19 pandemic and, last but not least, the proxy war between Russian and Ukraine, the global economy has experienced many shocks at the same time. The synchronous tightening of the monetary policy will achieve its purpose at some point, but the cost of maintaining high inflation rate, especially in the context of a decline in real wages, losses on fixed-income assets and using a loose fiscal policy—all this introduces a major diversification of actual beneficiaries. This means that a constant and growing issue in the coming years will be to balance the real value of public debt with the nominally desirable economic growth, with a persistent mismatch of budgetary deficits. Governments will be obliged to look for new budgetary revenues or to cut expenditure, which is less popular. Entrepreneurs and retail will enter an increasingly advanced but still slow process of abandoning China as the world's factory, moving their production to India, Bangladesh, Indonesia, Malaysia, Thailand, Vietnam, Mexico and also to Poland, whose cumulated real GDP growth between 1990 and 2020 totalled the staggering 857%[1] (behind the unrivalled China and before the very populous India). China will, for some more time, continue to generate a global cumulated economic growth that is higher than that of all G7 countries combined, but this trend will start to change.

Polish economic outlook—trends and scenarios is presenting Poland in the global perspective, along with its attendant development challenges. It is showcasing a new model of a macroeconomic stability, and opinions expressed by Her Excellency Orsolya Zsuzsanna Kovács, the Ambassador of Hungary to Poland, and His Excellency Petros T. Nacouzis, the Ambassador of the Republic of Cyprus to Poland—prepared specifically for this publication, for which I am most thankful.

I wish to extend my thanks for collaboration on this publication to the research team which I had the opportunity to work with: Julia Huk, Piotr Komorowski, Michał Polasik, Andrzej Meler, Mariola Makowska, Weronika Sadzik, Zbigniew Łukoś, Ryszard Łukoś, as well as to ExMetrix and

1 Report for Selected Countries and Subjects, IMF, October 2020.

Polasik Research. The analyses, trends and scenario discussed here, in addition to being a road map for decision-makers (not only in Poland), can be especially useful to entrepreneurs interested in aligning their business to the new balance of power and global trends.

prof. dr hab. Konrad Raczkowski

Conclusions

I. The global economic polycrisis between 2018 and 2023, sparked by the official trade war of the United States with China, created new opportunities and threats for the world economy, which will maintain the uneven weakening of respective world economies, mainly through a) the continued proxy war caused by the invasion of the Russian Federation on Ukraine, b) inflationary pressure, c) restrictive credit terms, d) shifts in global production chains and FDI destinations, and e) public finance debt crisis.

II. The main challenge to the business community in 2023, according to Global Economic Survey[2], is the continued geopolitical tensions and instability. The high inflation rate ranks second, reflecting the growing food and energy prices, which do not translate into the global trend of declining prices of agricultural commodities, and with regard to the energy market—prices in Poland are higher than the EU average both for futures contract and on the SPOT market.

III. Minimum wages will be on the rise in 2023–2024, translating into a higher inflation rate, at the same time exerting pressure on employers' costs. The issue of employee attraction and retention in the context of a relatively low unemployment rate will be one of employers' major problems.

IV. It is expected tha the real GDP growth in Poland will slow down to 0.9% in 2023 with a possible upward adjustment, and then bounce back to 2.1%-2.4% in 2024.

V. In Poland in 2022 there were 988.8 thousand active trade and service entities, of which 969.7 thousand had up to 9 employees and 781.7 thousand were classified as service companies. At the same time, retail sales in Poland amounted to PLN 1908.0 (EUR 429.3) billion, and the total number of retail and service outlets exceeded 1.53 million.

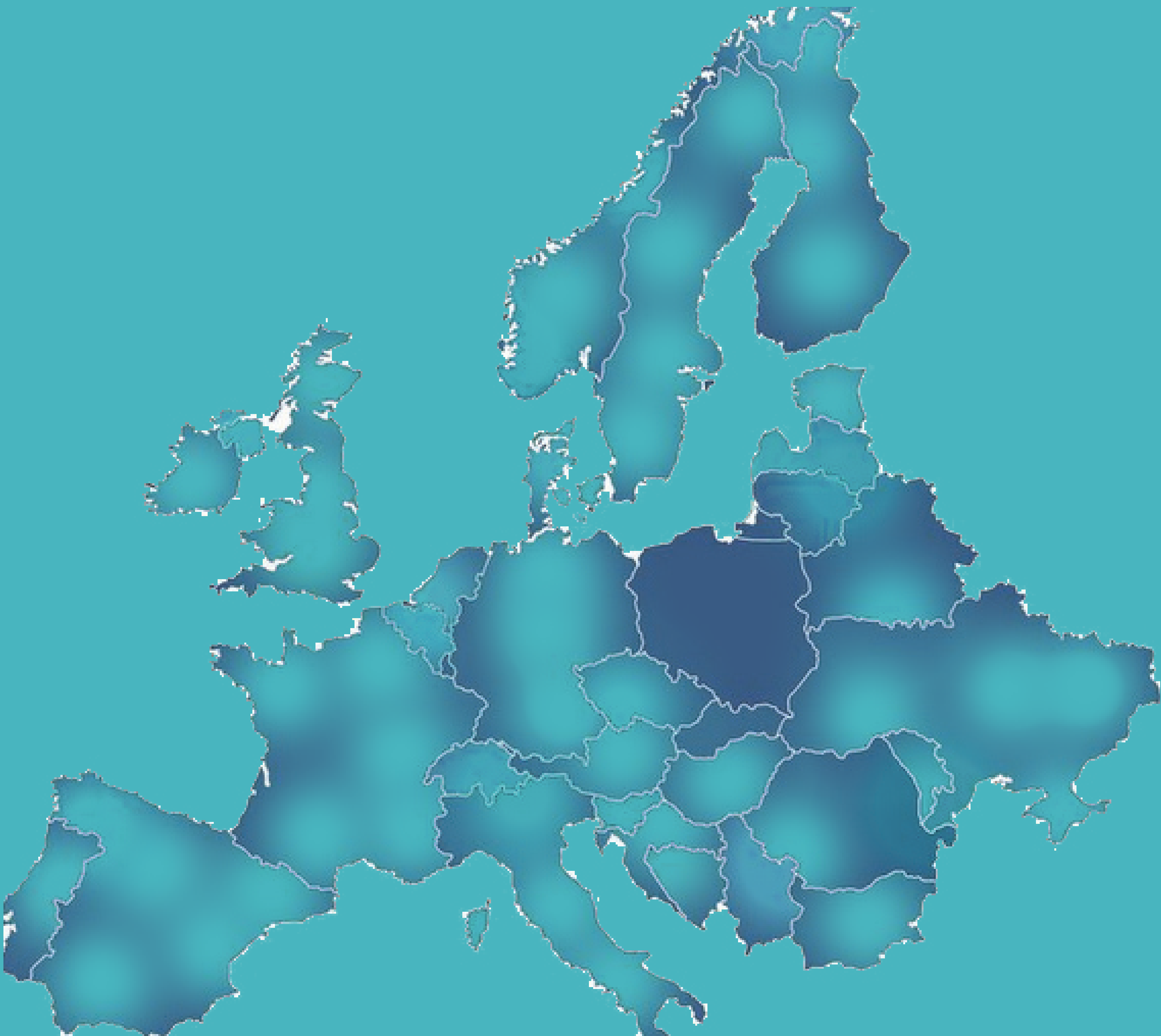
VI. In 2022, the value of total exports of agricultural and food products from Poland stood at EUR 47.6 billion and was 26.7% higher than in 2021. At the same time, 74% of the value of

2 See CEPR, *Russia's invasion of Ukraine has led to higher inflation expectations of individuals in Germany*, April 2022, https://new.cepr.org/voxeu/columns/russias-invasion-ukraine-has-led-higher-inflationexpectations-individuals-germany.

Polish agricultural exports related to EU countries, and the commodity structure of the agricultural and food exports included the following main groups: meat and meat products (20%), cereal grains and products (14%), tobacco and its products (9%) as well as dairy products (7%) and sugar and confectionery products (7%).

VII. The most important variable for the macroeconomic stability of Poland until 2021 was the deficit-to-GDP ratio, the least significant category being the overall energy price level. Since 2022, the situation has changed dramatically, the most important factors being: overall energy price level (0.509), GDP growth rate (0.431), deficit-to-GDP ratio (0.361), unemployment rate (0.292), trade balance-to-GDP ratio (0.107) and inflation rate (0.139).

1. Poland in the global perspective



1.1. Global economic polycrisis

The experience of balance sheet extension by central banks worldwide as well as the use of other non-standard monetary and economic policy tools in response to the Covid-19 crisis have proved that where systemic shocks in the global economy arise, it is possible to change, over a very short time, the social contracts in place for decades or the beneficiaries of the actual redistribution of national income. However, the results of those actions, when compared historically and in terms of forecast, deviate too much from the reference economic statistics as they have never in the past had such a scope, either in nominal or geographic terms. Low interest rates became attractive to inefficient companies which suddenly were capable of contracting financial obligations as they could service the debt as long as interest rates would be at comparable levels and their business activity continued to be profitable. At the same time, the negative monetary expansion, introduced as the next step, combined with an unprecedented scale of quantitative easing by central banks, leading to higher balance sheet total and generating a surplus of money in the economy, was the main cause of the inflation that came later. In addition, the maintaining inflation was combined in many countries with a loose fiscal policy, which could be only partly curbed with higher interest rates—which significantly limited the framework and efficiency of the monetary policy. This economic phenomenon is accompanied by an increase in budgetary deficits and public debt, introducing the systemic uncertainty, reducing investments and the purchasing power of means of payment. "While a surprising burst of inflation immediately reduces the real value of a borrower's debt burden—transferring wealth from lenders to borrowers—it is also likely to raise future borrowing costs because investors will then expect higher inflation and demand higher nominal yields on debt to compensate them for the expected loss of purchasing power and the associated uncertainty"[3].

In national and international policies alike, dominated by ever stronger interventionism, it is increasingly difficult to find positive feedbacks which do not have a negative impact on a given country, group of countries or a given economy's segments. The systemic dynamic applied introduces a sort of global polycrisis which is a macro crisis of interconnected less controlled failures

3 Christopher J. Neely, *Inflation and the Real Value of Debt: A Double-edged Sword*, Federal Reserve Bank of St. Louis, August 1, 2022.

in the natural and social sphere, which can irreversibly degrade humanity's prospects[4]. The term "polycrisis", by the way, was coined in 1999 by Edgar Morin, who described this phenomenon in "A Manifesto for the New Millennium". Currently, the polycrisis approach has gained significance thanks to Columbia University professor Adam Tooze and Christopher Hobson. Tooze was the one to argue in October 2022 that we need to stop thinking along the lines of social and economic progress when the complexity of challenges such as climate change, possible nuclear war, global slowdown or pandemic are more important problems to solve. To this narrative Hobson added the concepts of an entangled system of escalating problems and an imperfect world where many crises happen at the same time[5].

Then, the World Economic Forum focused on polycrisis around shortages of natural resources (e.g. water, food) and metals and minerals. It emphasised the need for matching demand and supply, which will depend both on the degree of global cooperation in this area and on the impact of climate change on the supply of natural resources and on the low-carbon transition[6].

In this context, the growing rivalry between countries is becoming increasingly visible, especially those having the greatest impact on the global economy. The rivalry is an attempt to "to gain advantage, often relative to others believed to pose a challenge or threat, through the self-interested pursuit of contested goods such as power, security, wealth, influence, and status"[7]. Meanwhile, world politics researchers posit that competition is the fundamental fact of the international system, whether related to human nature and pursuit of power or to the role of international system of countries without a central authority. On the global risk map, global stagflation seems more destructive to economic growth, but trade war or basically an economic one, between the USA and China also changes the shape of economic growth and development.

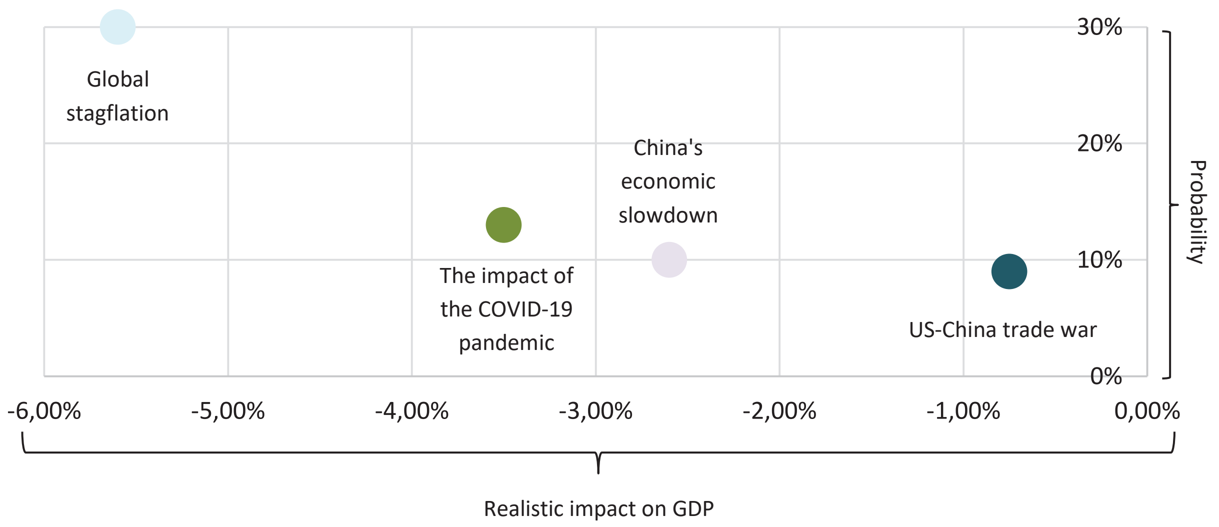
4 Homer-Dixon, T. et al., *A call for an international research program on the risk of a global polycrisis*. Technical paper 2022–2, version number 2.0. Cascade Institute. https://cascadeinstitute.org/wp-content/uploads/2022/03/Acall-for-an-international-research-program-on-the-risk-of-a-global-polycrisis-v2.0.pdf.

5 David Henig, Daniel M. Knight, *Polycrisis: Prompts for an emerging worldview*, "Anthropology Today", 1 April 2023, Vol. 39, no. 2, https://doi.org/10.1111/1467-8322.1279.

6 *The Global Risks Report 2023*, World Economic Forum, Davos, January 2023.

7 Michael J. Mazarr, Jonathan Blake, Abigail Casey, Tim McDonald, Stephanie Pezard, Michael Spirtas, *Understanding the Emerging Era of International Competition: Theoretical and Historical Perspectives*, Santa Monica, CA.: RAND Corporation, RR-2726-AF, 2018, p. 5.

Figure 1: Global risk map



Source: Euromonitor International Macro Model.

In the post-World War Two economic order the main postulate was to create an environment where all countries may develop in absolute terms[8], the best way to achieve such a state of affairs being cooperation with other countries. This is why alliances and long-term regional blocs were formed such as the European Union. Cooperation as part of such structures, oriented to solving common problems, will always be exposed to some flaws and to the strong attachment to protectionism behind the façade of shared values. It should be borne in mind, however, that too strong a rivalry between seemingly collaborating countries also has consequences in the form of tense and hostile relations, crises and, ultimately, economic or conventional wars[9].

Currently the most confrontational rivalry in systemic terms can be observed between the two largest economies, i.e. China and the USA, which is referred to by many as the new cold war or the Great Power Competition. It is an example of an attempt to change the balance of power with a rising and emerging power (China) trying to oust an established power (the United States)[10].

The fundamental concept underlying the power change theory is the belief that a rising power provokes fear and hostile response from an established power, which may result in suspicions and confrontations leading to an economic war, the consequence of which could be armed conflicts waged as proxy wars.

The US-China relationship is not a classical power change. China's economic, technological and military might has been on the rise but the US economic and military capability is still

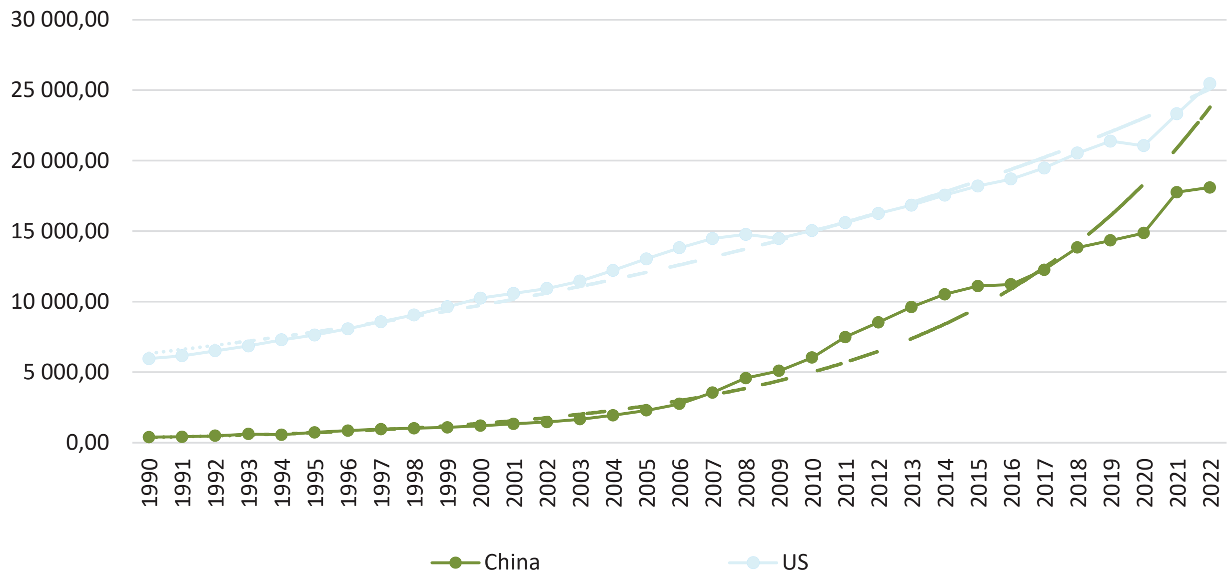
8 Robert Jervis, *Cooperation Under the Security Dilemma*, "World Politics", Vol. 30, No. 2, 1978; Charles L. Glaser, *Rational Theory of International Politics: The Logic of Competition and Cooperation*, Princeton, N.J.: Princeton University Press, 2010.

9 Paul F. Diehl, Gary Goertz, *War and Peace in International Rivalry*, Ann Arbor: University of Michigan Press, 2000, pp. 19–25.

10 For the canonical formulation of the theory see Robert Gilpin, *War and Change in World Politics*, New York: Cambridge University Press, 1983.

dominant, also when it comes to alliances and the overall impact on the global policy[11]. Some forecasts suggest that the US economy may remain bigger or equally big as the Chinese one, but without an intervention to limit Chinese economy's global operating framework this would be quite unlikely. Between 2010 and 2021 China's GDP rose by 65.7%, while that of the USA, by 35.5%. Except for 2021, which was a year of especially high growth due to pandemic (China recorded a 17.2% growth, and the USA a 9.7% growth), China's economic growth post-2018 has greatly slowed down[12].

Chart 1: GDP growth rates of the United States and China from 1990 to 2022



Source: Own compilation based on World Bank data.

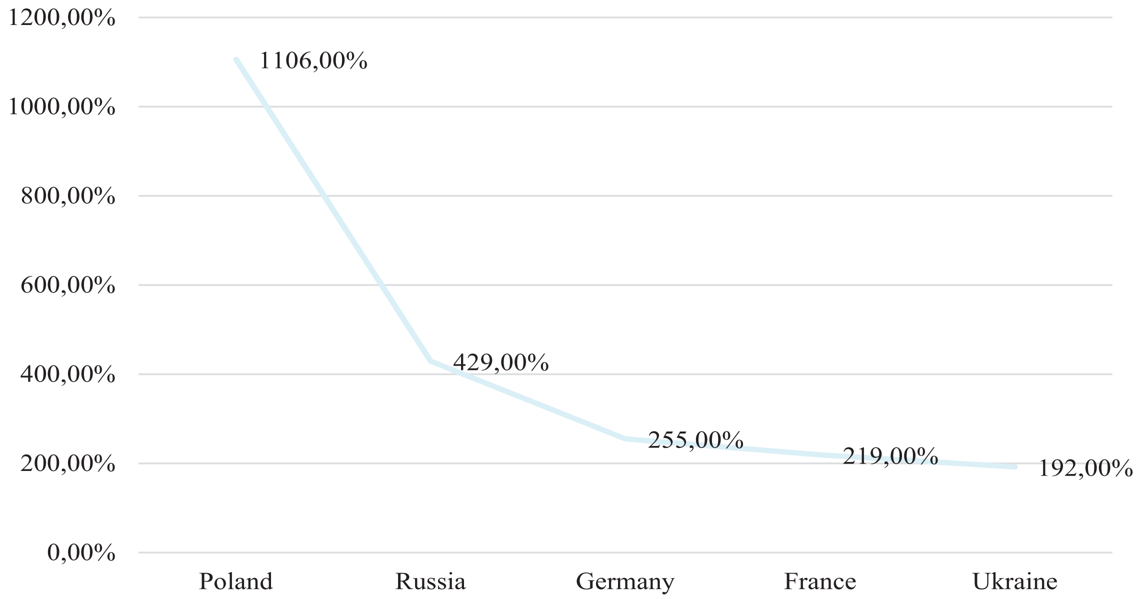
Among the European countries, the largest economy is that of Germany, which recorded, between 1990 and 2022 a 255% cumulated growth of real GDP. However, a country that boasts the highest cumulated economic growth is Poland whose GDP has risen by a staggering 1106%. The slowest growing economy is that of Ukraine, which has not even doubled since 1990 (rising by 192%). Meanwhile, Russian economy has risen by 429%. However, economic growth as measured by purchasing power parity was already different.

Despite a major economic slowdown in China, the most globally influential European countries still perceive it as the leading economic power worldwide with regard to the USA.

11 For an excellent overview of evidence see Derek Scissors, *China's Growth Spurt Ends: What's Next?* Washington, D.C.: American Enterprise Institute, 2021.

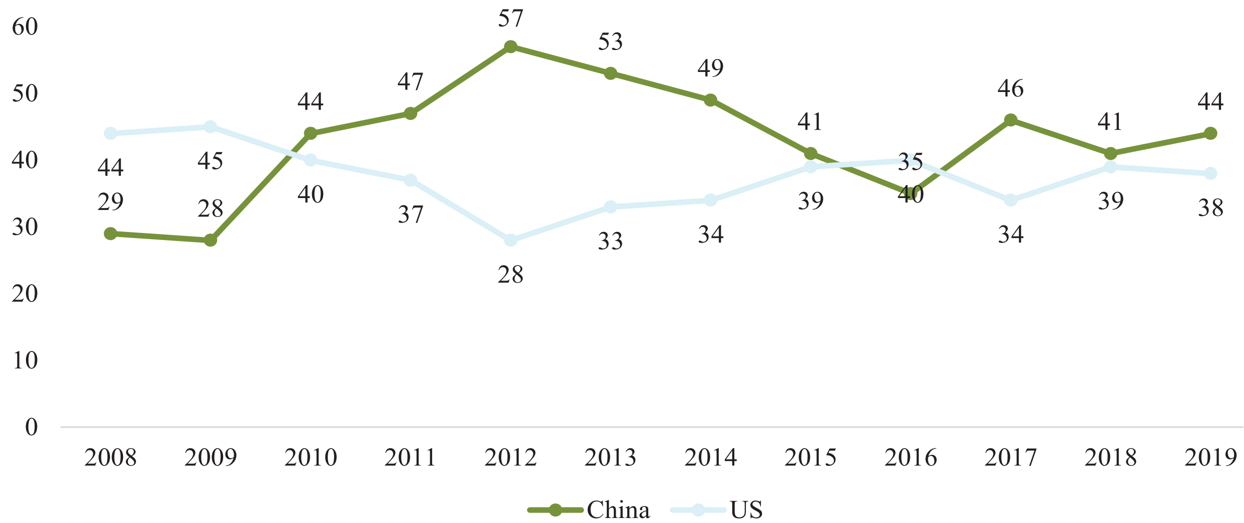
12 World Bank aggregates.

Chart 2. Growth rate of selected European countries from 1990 vs 2022 (%)



Source: Own compilation based on World Bank data and Statista.

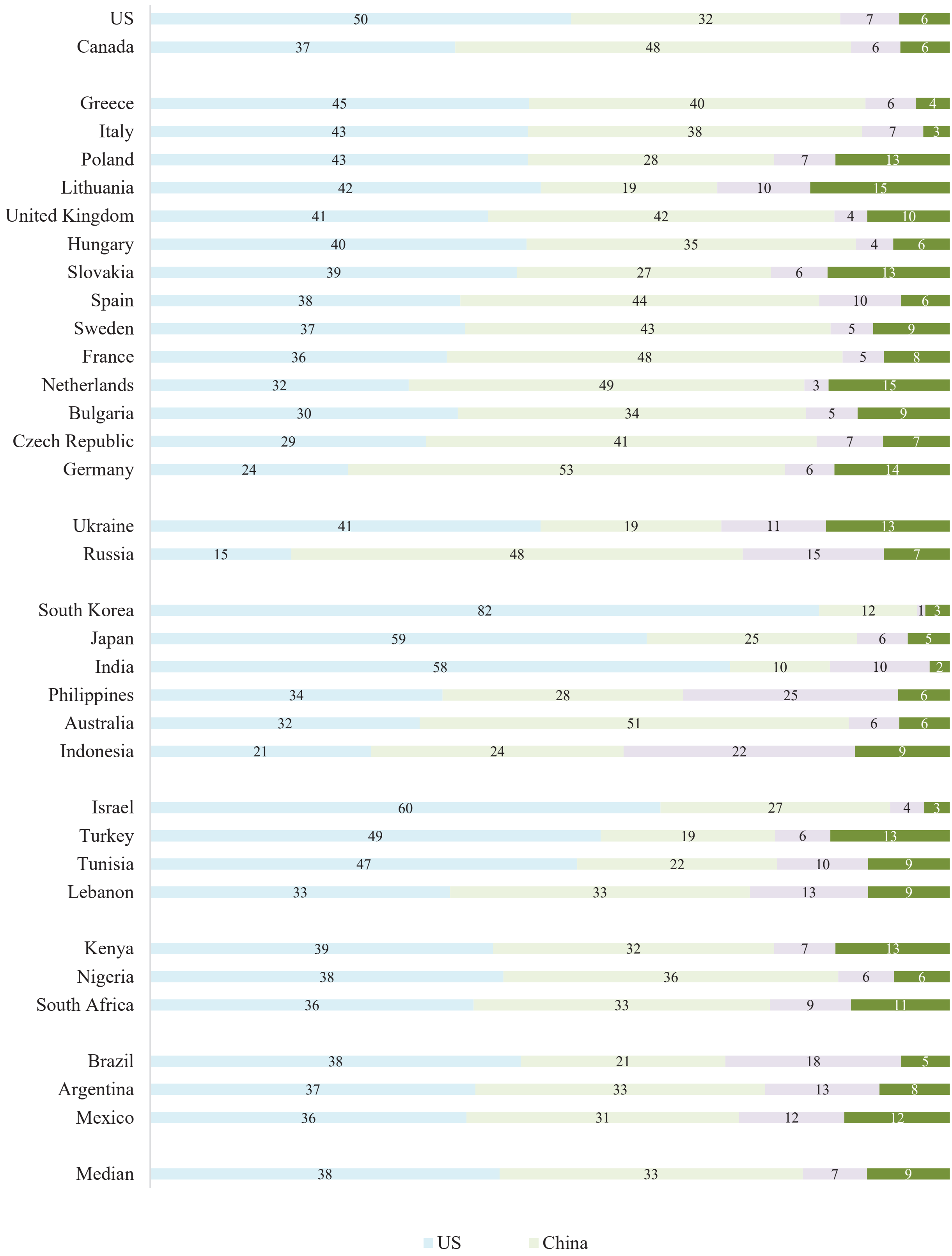
Chart 3. Leading economic power in the world by European countries (France, Germany, Spain, UK and Poland)



Source: PEW Research Center.

This was especially visible in the years between 2010 and 2014, which saw the greatest disparity in China's favour. However, of significance is the fact that, taking countries from all over the world into account, not only from Europe, the USA is perceived as the world's largest economy. In a survey conducted by PEW Research Center only 13 out of 34 countries surveyed expressed their support for China. Curiously enough, Asian countries are more likely to support the United States. Only one country (Indonesia) out of seven countries surveyed perceives China as the leading economic power. On the other hand, North America's second largest country (Canada) also does not support its neighbour.

Chart 4. Leading economic power in the world by selected countries



Source: PEW Reasearch Center.

Currently, a visible manifestation of a proxy war is the Russian invasion of Ukraine. Though such a war scenario in Europe seemed unrealistic to many, it is a classical behavioural pattern of great powers in rivalry. Rivalry as defined by studies on world politics is a dangerous phenomenon fuelling aggression and violence[13], intended not only to change the balance of power in the international order but also to change, in multiple respects, a certain social contract.

Ever since the war of Russia with Ukraine started, initially 7 countries joined Russia-friendly camp, even though they did not openly support the war. Countries such as South Africa or Botswana, which were neutral at first, abandoned the pro-Western orientation. Eight countries, including Turkey, stopped supporting the West and now declare neutrality, which in practice means support for Russia. Over the last 12 months the number of countries officially condemning Russia has dropped from 131 to 122[14].

It should be borne in mind, at the same time that China, like Russia, has revisionist ambitions, too. It wants to change the international system and push it in its direction, ousting the United States from the position of a recognised leader in world politics. In its efforts to achieve these goals, China is willing to use an economic coercion and military intimidation, which it has been successfully doing for many years in many countries of the world.

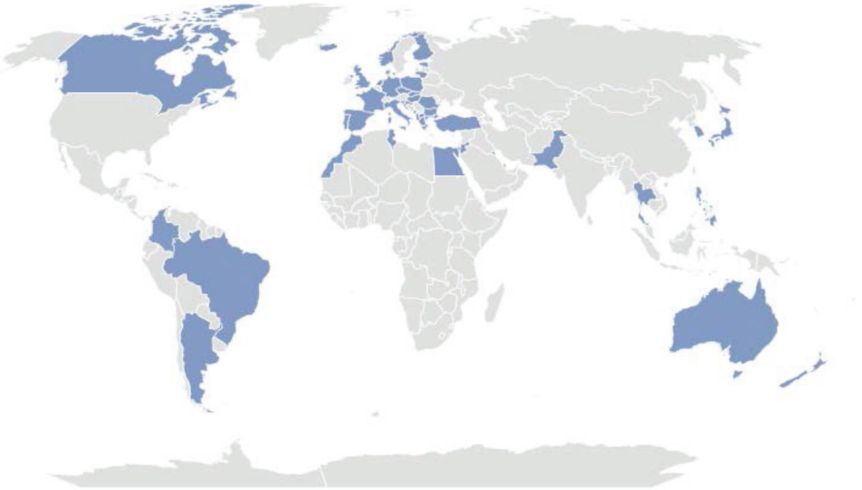
Both China and Russia perceive the United States as the most expansionist revisionist state[15]. As a result, the conflict between these three countries has entered the stage of proxy escalation. The Russian and Chinese perspective on world politics and rivalry with the United States increasingly blur the line between peace and war, focusing on an interconnected spectrum of actions taken to gain a strategic advantage. In our time and age, information and economic war is definitely more frequently used than an armed war. Many Chinese documents use the term 'information dominance', suggesting that the party that manages to dominate various elements of communication and of the resulting disinformation will win the war.

13 Michael J. Mazarr, *Understanding Competition Great Power Rivalry in a Changing International Order – Concepts and Theories*, RAND Corporation (2022), p. 7.

14 The Economist, *Who are Russia's supporters?*, https://www.economist.com/graphic-detail/2023/03/31/who-are-russias-supporters.

15 Michael J. Mazarr, *Understanding Competition*..., p. 12.

Figure 2. U.S. treaty allies



Source: U.S. Department of State, CRS.

China is often presented as the contemporary equivalent of the Soviet Union, which is not true. China is indeed looking to gain influence but it is not concerned with respective countries' system of government and it is happy to cooperate with democracies if the latter meet its expectations. It is not trying to directly overthrow other governments or impose a state model aligned with the guidelines of the Communist Party of China[16]. Meanwhile, it aims to make countries financially or strategically dependent and to gain a dominant influence on the fundamental principles, norms and institutions of the international policy[17]. Formally, China has only one ally—North Korea, but when it comes to the alliance-partnerships concluded, Russia and Pakistan are its main partners. China has concluded a total of 19 partnerships of varying importance with respective countries and, in addition, as part of the Belt and Road Initiative, it has signed contracts with 32 international organisations and 148 countries[18]. This means a possible further decline in the number of key US allies and ever greater difficulties with maintaining the status quo[19].

16 Andrei Lungu, *The U.S.-China Clash Is About Ideology After All*, "Foreign Policy", April 6, 2021.

17 Michael J. Mazarr, *The Essence of the Strategic Competition with China*, PRISM, Vol. 9, No. 1, October 2020a.

18 Tom O'Connor, Shea Donovan, *With World's Eyes on Beijing, Here's How China Ranks Relations Across Globe*, "Newsweek", 2/16/2022, https://www.newsweek.com/worlds-eyes-beijing-heres-how-china-ranks-relations-across-globe-1679183.

19 Hal Brands, Peter D. Feaver, *What are America's alliances good for? Reevaluating Diplomati & Military Power*, "Parameters" 47(2) 2017.

Table 1. Ranking of China's Partnerships by Priority and Solidarity

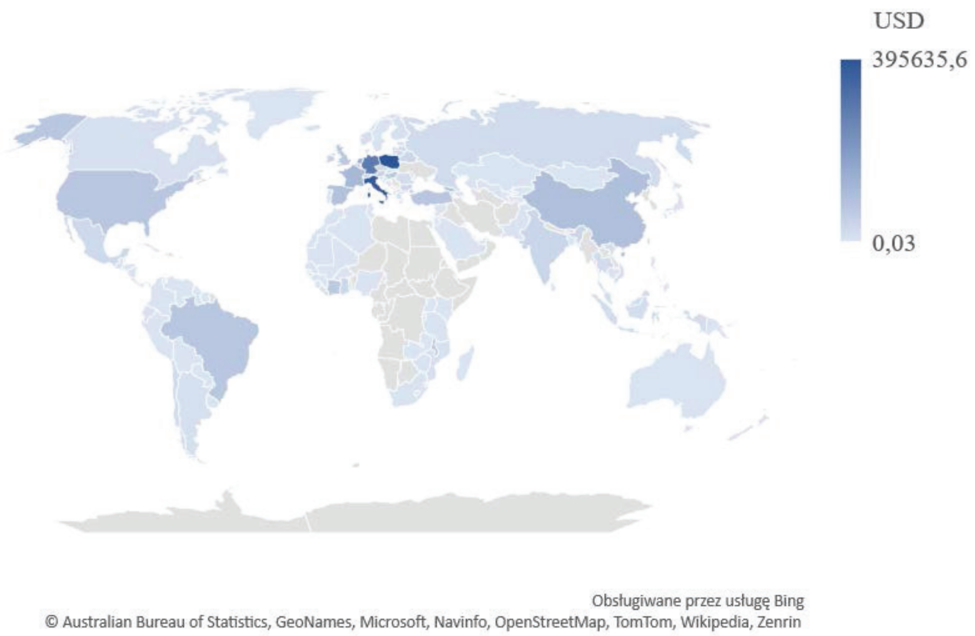
Type of partnership	Countries
Comprehensive strategic partnership for coordination in the New Era	Russia
All-weather strategic cooperation	Pakistan
Comprehensive strategic cooperative partnership	African Union, Belarus, Cambodia, Congo, Ethiopia, Guinea, Kenya, Laos, Mozambique, Burma, Namibia, Senegal, Sierra Leone, Thailand, Vietnam, Zimbabwe
Strategic cooperative partnership	Afghanistan, Bangladesh, Brunei, India, Nepal, South Korea, Sri Lanka, Suriname
All-weather comprehensive strategic partnership	Germany
Permanent comprehensive strategic partnership	Kazakhstan
Comprehensive strategic partnership	Algeria, Argentina, Association of Southeast Asian Nations (ASEAN), Australia, Azerbaijan, Brazil, Chile, Cook Islands, Ecuador, Egypt, European Union, Fiji, France, Greece, Hungary, Indonesia, Iran, Italy, Kiribati, Kuwait, Kyrgyzstan, Malaysia, Mexico, Micronesia, Mongolia, Morocco, New Zealand, Niue, Papua New Guinea, Peru, Philippines, Poland, Portugal, Samoa, Saudi Arabia, Serbia, Solomon Islands, South Africa, Spain, Tajikistan, Tonga, United Arab Emirates, United Kingdom, Uzbekistan, Vanuatu, Venezuela
Friendly strategic partnership	Austria
Strategic partnership	Angola, Arab League, Bolivia, Bulgaria, Canada, Comoros, Costa Rica, Cyprus, Czech Republic, Democratic Republic of Congo, Djibouti, Eritrea, Iraq, Ireland, Jamaica, Jordan, Nigeria, Oman, Qatar, Turkey, Turkmenistan, Ukraine, Uruguay
Innovative strategic partnership	Switzerland
Comprehensive cooperative partnership	Singapore
Comprehensive friendly cooperative partnership	Romania
Future-oriented comprehensive and friendly cooperative partnership	Maldives
Comprehensive cooperative partnership	Croatia, Equatorial Guinea, Gabon, Commonwealth of Latin American and Caribbean States, Liberia, Madagascar, Netherlands, São Tomé and Príncipe, East Timor, Trinidad and Tobago, Tanzania, Uganda
Comprehensive friendly cooperation	Belgium
Friendly cooperation	Armenia, Japan
Future-oriented cooperation	Finland
Innovative comprehensive partnership	Israel
Allied	North Korea
No diplomatic relations	Belize, Eswatini, Guatemala, Haiti, Honduras, Marshall Islands, Nauru, Palau, Paraguay, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Tuvalu, the Holy See

Source: Newsweek, With World's Eyes on Beijing, Here's How China Ranks Relations Across Globe (in): https://www.newsweek.com/worlds-eyes-beijing-heres-how-china-ranks-relations-across-globe-1679183.

In the context of the US-China rivalry, the term 'never-ending game' is often used. The competition between those two countries should be based on a never-ending rivalry rather than on aiming for victory in a specific time-frame[20]. However, it should be borne in mind that the United States is engaged in the classical, highly unstable rivalry not only with Russia and China. The situation in Ukraine and Taiwan shows how easy it is to disturb the tense networks and alliances, which support the US world order and to start a new era of global conflicts and instabilities[21]. It should be pointed out that the United States has no trusted allies in Asia or in Africa. Meanwhile, India currently being the world's largest country by population (1.428 billion)[22] has de facto opted for economic relations with Russia. "From being a marginal player, Russia has become India's third-biggest oil supplier since the war, with purchases jumping about 10-fold from a year-earlier because of cheap prices. The value of India's coal imports from Russia, meanwhile, has risen four-fold during the same period"[23].

The World Bank advises that the Ukrainian economy has shrunk by nearly 50% throughout 2022. Ukraine is estimated to have sustained ca. USD 100 billion worth of losses, and it will take nearly a billion dollars to rebuild the country. Maintaining the government and administration alone costs USD 5 billion a month.

Figure 3. Importers of Ukrainian food products in 2020



Source: Own compilation based on World Bank data.

20 Simon Sinek, *The Infinite Game*, New York: Portfolio Press, 2019. See also: Simon Sinek, *Do You Know the Game You're Playing?*, webpage, undated.

21 Michael Schuman, *China Is Watching Ukraine with a Lot of Interest*, "The Atlantic", January 13, 2022.

22 *State of World Population Report*, 2023.

23 Krishna N. Das, Devjyot Ghoshal, *Ukraine war but business as usual with Russia*, Reuters, September 28.

It does not seem plausible, either, that Ukraine will recover in the near future its Sea of Azov and Black Sea ports. Before the war, ca. 70% of Ukrainian exports and imports, including 98% of crop exports, went through those ports.

On the other hand, it remains undoubtable that China has extensive military plans for the time of peace to extend the regional dominance of its armed forces and gain a certain degree of global military engagement and footprint. Therefore, the Chinese standard of a successful rivalry with the United States assumes meeting the following conditions by mid-century:

1. avoiding a war with the United States, which does not preclude the possibility of militarised crises or limited-scale conflicts occurring;
2. the United States will respect the authority of China as a world leader, while remaining a powerful but clearly lesser nation;
3. the United States will, to a great extent, refrain from harming Chinese interests;
4. China will establish its primacy in a great part of Eurasia, in the Middle East and in Africa, mainly through patron-client relationships with other countries;
5. the primacy of the United States will be limited to both Americas, though it can still maintain military, economic and diplomatic presence all over the world;
6. the United States and China manage their differences in line with standards established by China;
7. both parties collaborate on shared issues based on principles established to a great extent by the Chinese[24].

The vision of world politics created by China indicates a future where all countries theoretically have a voice of their own and can shape their own future while, at the same time, other countries recognise China's position at the top of hierarchy and submit to its dominance. The Chinese vision demands equality of cultural models and asserts China's superiority[25], which would in fact topple the existing order, not only according to the Anglo-Saxon model.

China is approaching the current rivalry from the perspective of a country which sees itself as the legitimate dominant international power. In this process China is oriented to a continuous rivalry over the regional and global supremacy against the United States, a rivalry which is an inherent part of the current structure of the world politics[26].

Compared to China, Russia has much more modest global ambitions befitting its potential power. However, its willingness to take risks and directness in challenging the existing norms currently seem much greater. The intensity of rivalry depends, to a great extent, on the degree of hurt pride and bitterness[27] resulting from Russia playing a different role in the 21st century than it did in the 20th century.

At present, the road to empire-building is paved with economic means. China's military growth is visible, but a global leadership depends on the national economic growth and the international economic strategy.

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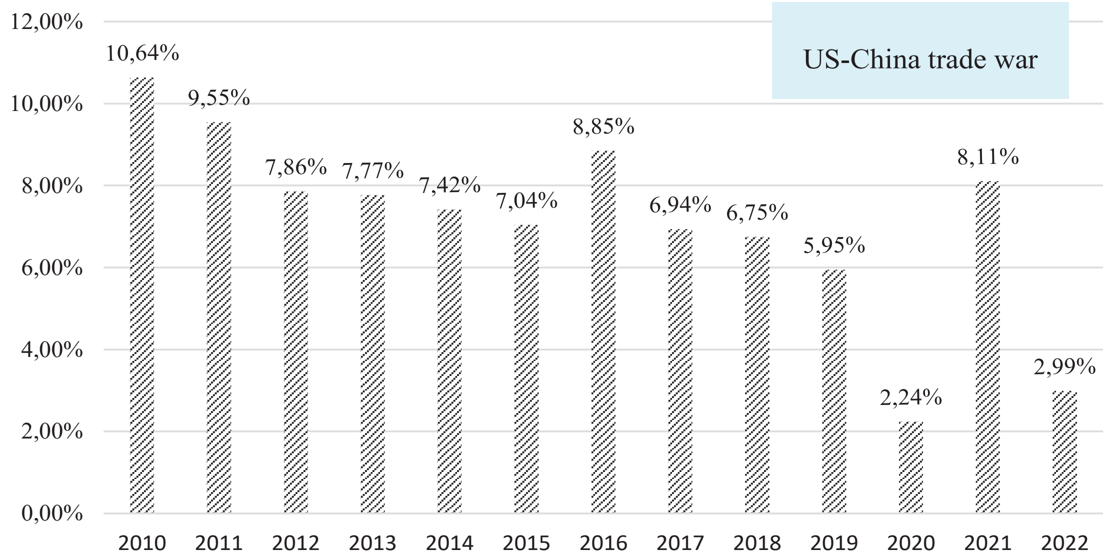
24 Timothy R. Heath, Derek Grossman, Asha Clark, *The "Holistic Security Concept": The Securitization of Policy and Increasing Risk of Militarized Crisis*, 2021, pp. xv–xvi.

25 Michael J. Mazarr, *Understanding Competition…*, p. 29.

26 David Lague, *Special Report: China's Military Hawks Take the Offensive*, Reuters, January 16, 2013.

27 Samuel Charap, Dara Massicot, Miranda Priebe, Alyssa Demus, Clint Reach, Mark Stalczynski, Eugeniu Han, Lynn E. Davis, *Russian Grand Strategy: Rhetoric and Reality*, Santa Monica, CA.: RAND Corporation, RR-4238-A, 2021, p. 26.

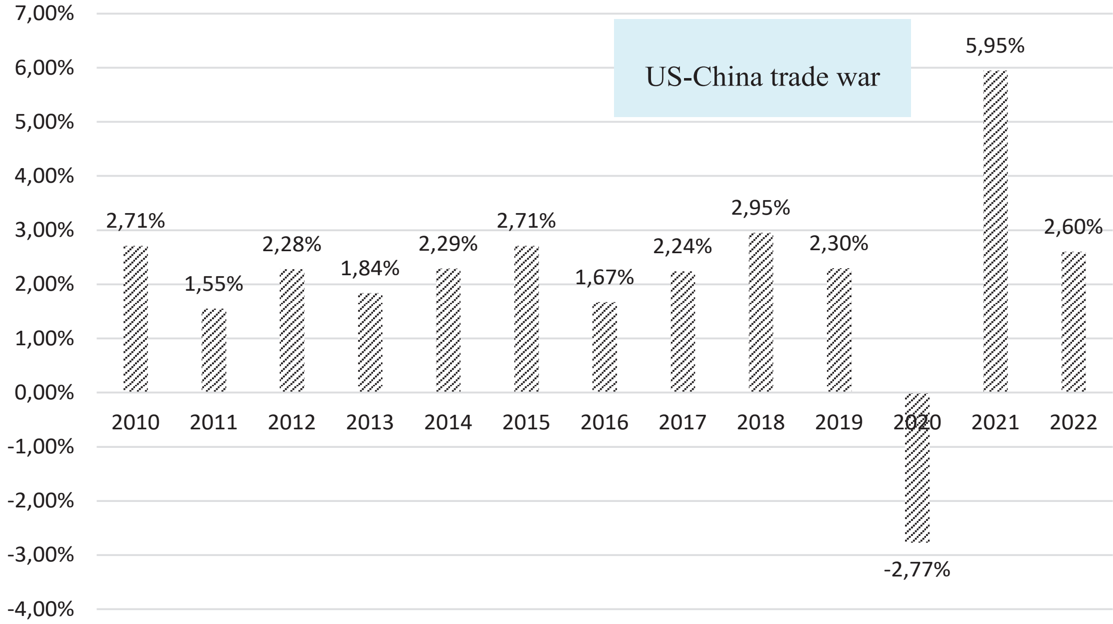
Chart 5. China's real GDP growth from 2010 to 2022



Source: Own compilation based on World Bank data.

It should be noted that ever since the beginning of the trade war with the United States, China's economic growth has been following a downward trend. However, it has been definitely more regular than that of the United States which is more vulnerable to any fluctuations in the interconnected international system. 2020, a year that marked the outbreak of the COVID-19 pandemic, saw a great disparity and dominance of China which was one of the few countries not to record a GDP drop in that period.

Chart 6. U.S. real GDP growth from 2010 to 2022



Source: Own compilation based on World Bank data.

In 2012, China took actions to occupy one of the islands on the South China Sea, i.e. Scarborough Shoal near the Philippines. This was the time to take decisive actions to limit China's claims and calm the allies. The United States undertook negotiations, as a result of which the parties withdrew their claims, but a moment later China took control of the island. This was one of the most critical turning points in the region[28].

China is currently a leader in any form of green energy[29]. It spends four times as much on green investment projects as the United States (USD 141 billion) or the European Union (USD 180 billion). In 2022 alone, China spent USD 546 billion on investment projects including wind and solar energy, battery production or electric vehicles[30].

The United States is currently facing two long-term rivalries with a high potential for instability. However, in both cases, especially taking into account that the rivalry focuses on economic and technological issues and on the global order, the United States has at least two competitive advantages. One of them is the dynamic social and economic system which generates major growth, innovation and creativity. Another is the international coalition of allies, friends and other parties interested in maintaining key global norms and a certain version of an order based on principles developed over past decades. The United States is at the heart of the dominant global coalition[31], but it is only a matter of time before multilateralism becomes a fact. China already has a global network of 90 maritime ports, and the Gwadar port being built in Pakistan will provide China with access to the Persian Gulf and Indian Ocean[32].

The world economy, shaken by the pandemic and the attendant inflation, was not in the best shape even before Russian invasion on Ukraine. The consequences are especially heavy because Russia and Ukraine are of key importance to commodity markets. Both countries combined produce 12% of the total calorie supply sold worldwide and are among top five global exporters of wheat, barley, sunflower and corn. Ukraine is a major source of sunflower oil, supplying ca. 50% of what is bought globally, with Russia coming second (ca. 23%)[33].

28 Center for Preventive Action, *Territorial Disputes in the South China Sea*, Council on Foreign Relations Global Conflict Tracker, 2021.

29 W.H. Overholt, PRISM, 2021, Vol. 9, No. 2 (2021), pp. 34–45.

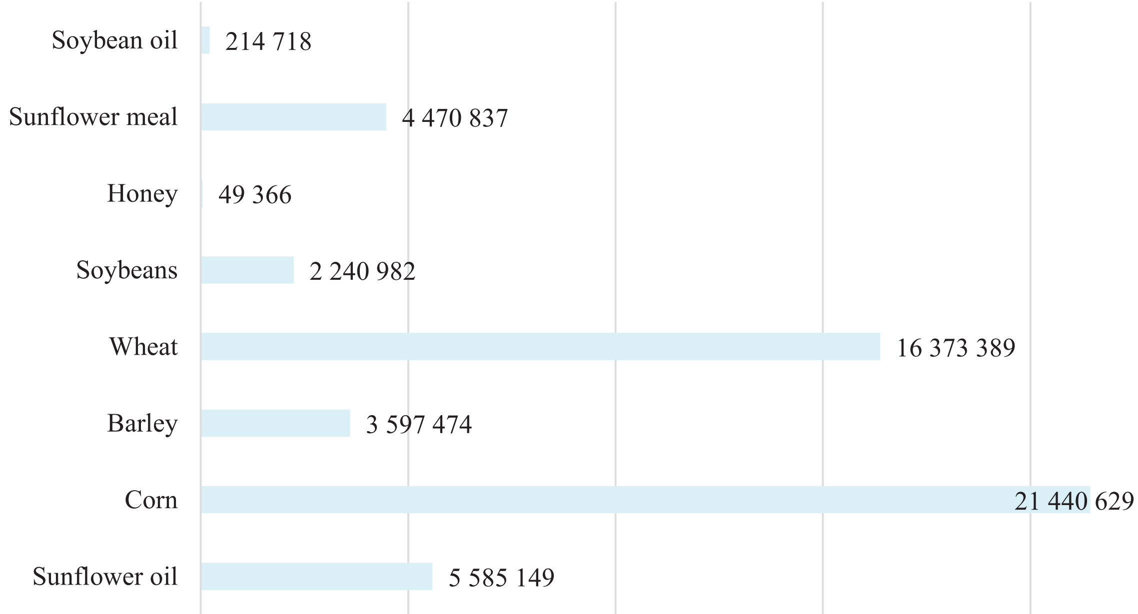
30 *Global Low-Carbon Energy Technology Investment Surges Past $1 Trillion for the First Time*, Bloomberg NEF, January 26, 2023, https://about.bnef.com/blog/global-low-carbon-energy-technology-investment-surges-past-1-trillion-for-the-first-time/.

31 Michael J. Mazarr, *Understanding Competition…*, pp. 33–34.

32 Madiha Afzal, Bruce Riedel, Natan Sachs, *The United States, China, And The "New Non-Aligned" Countries, Global China*, Policy Brief, February 2023.

33 Agriculture in Ukraine: Overview DLF.

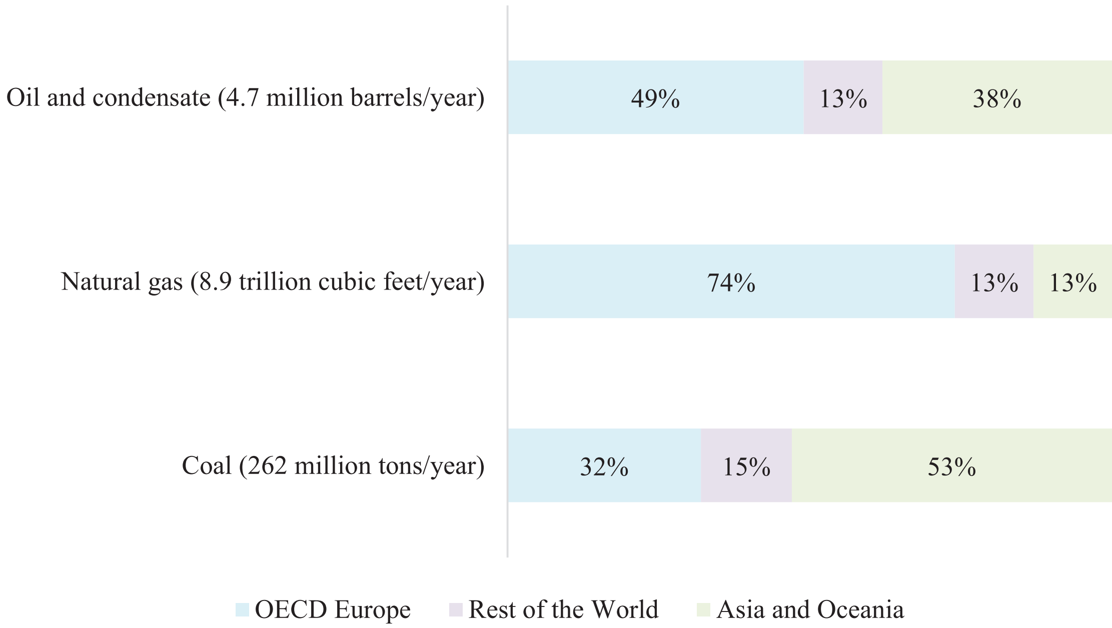
Chart 7. Exports from Ukraine in 2020



Source: DLF, Agriculture in Ukraine: Overview.

Russia is the third largest producer of crude oil globally, after the USA and Saudi Arabia, and the largest exporter of crude oil to global markets. It is also one of the world's main exporters of natural gas, with a 17% share of the global production.

Chart 8. Selected types of energy exports from Russia in 2021

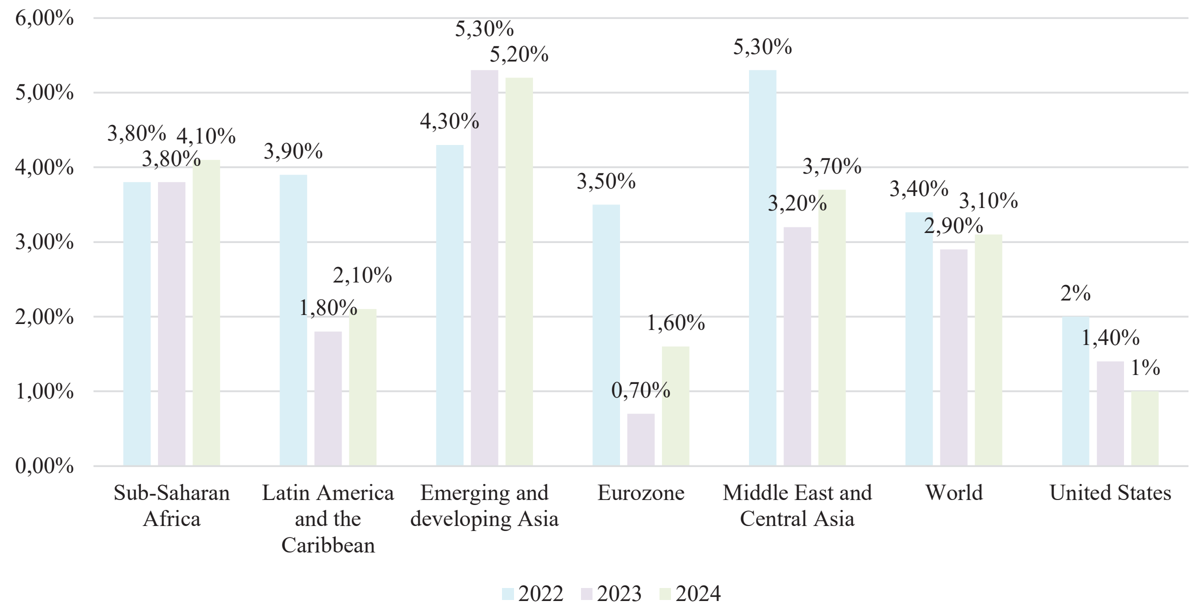


Source: Global Trade Tracker.

1.2. World economies' landscape

Taking account of the ongoing global economic polycrisis, in 2023 world economies will face a number of macroeconomic problems. Forecasts reveal that the global economic growth will continue to slow down, however consumer expenditure will grow. The risk of inflation increase will continue to be high, but prices are expected to drop (or to increase at a slower pace), and supply chains to be rebuilt. Poorer economic results in 2023 will help restore the balance between demand and supply, and mitigate the supply chain problems, however the situation will not be equally good in respective countries.

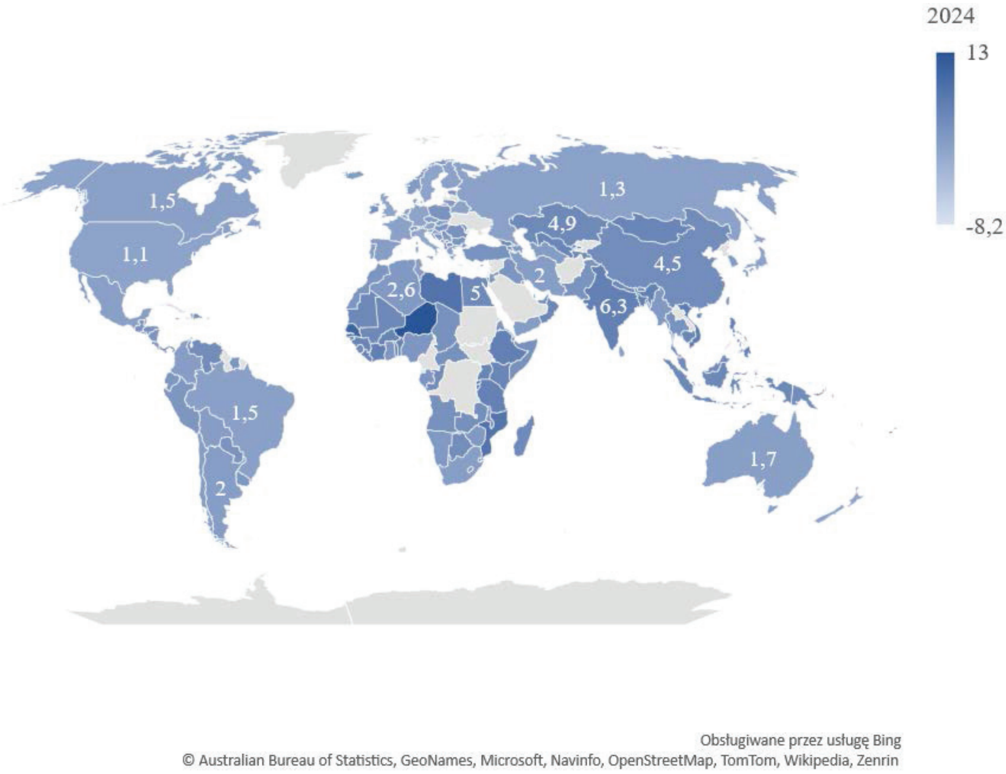
Chart 9. Global real gross domestic product (GDP) growth 2022–2024 by region



Source: Global real GDP growth forecast 2022–2024, by region, Statista Reasearch Department, 27.02.2023.

Real GDP forecasts provide for a 2.3% economic growth globally in 2023. Developed economies are expected to reach in 2023 a real economic growth of 0.7% driven by the high risk of recession in the USA and Europe. Emerging and developing economies are expected to record a 3.7% growth in the same year, with some Asia-Pacific and Middle Eastern countries achieving better results[34].

Figure 4.:Estimates of real GDP growth in 2024 (average change in %)



Source: Global Economic Outlook (May 2023), The Conference Board.

China had the lowest growth in over four decades in 2022, i.e. 3.2%, due to frequent lockdowns as part of zero-COVID policy. According to the International Monetary Fund, USA's poorer growth in 2023 is driven by the drop in real disposable incomes, which continue to have a negative impact on the consumer demand, as well as by high interest rates which shape expenditure, especially with regard to housing investment.

Asian countries have the highest public debt-to-GDP ratio. For Japan, the ratio stands at 260% in 2023, while 275% is forecast for 2024. China will have 131% of GDP in 2023, with the ratio expected to grow 1 p.p. next year. The United States and the euro area will not exceed 100%.

34 M. Hofer, *A new economic reality shaped by geopolitical tensions, high inflation and rising interest rates,* Economies in 2023: Key Trends to Watch, Euromonitor International, 1.05.2023.

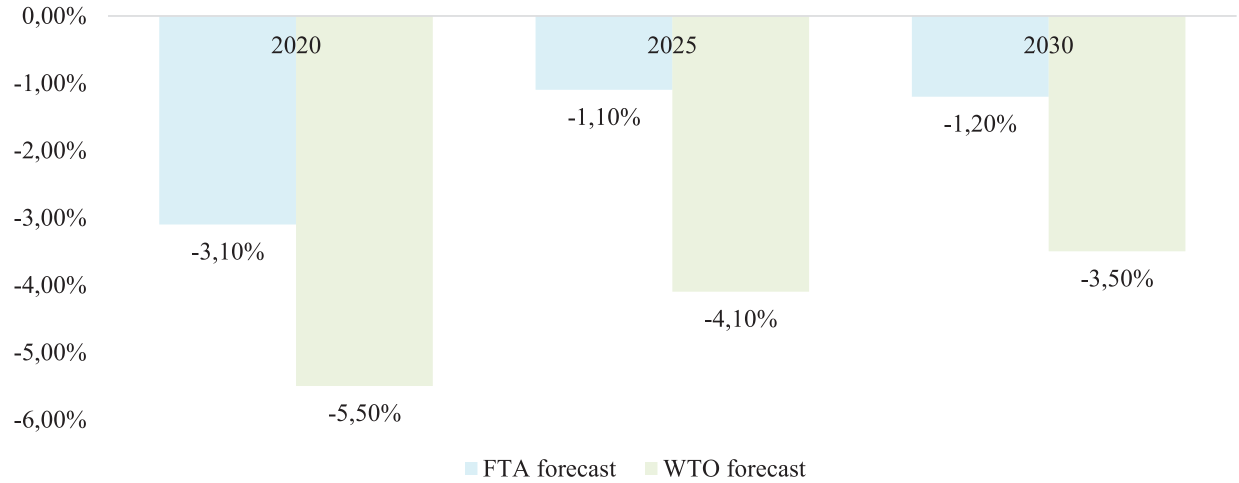
Table 2. ING's global economic indicators forecast for 2023–2024

	2023					2024				
	I 23	II 23	III 23	IV 23	2023	I 24	II 24	III 24	IV 24	2024
United States										
GDP (%)	1,1	0,4	-1,5	-2,2	0,8	-0,5	1,7	2,5	2,2	0
Core CPI (%)	5,8	4,1	3,3	2,7	4	2,1	1,9	1,8	1,9	1,9
Federal funds (%)	5,00	5,25	5,25	4,25	4,25	3,25	3,00	3,00	3,00	3,00
3-month interest rate (%)	4,9	5,2	5,2	4,2	4,2	3,2	3	3	3	3
10-year interest rate (%)	3,50	3,25	3,00	3,00	3,00	3,00	3,00	3,00	3,25	3,25
Fiscal balance (% of GDP)					-5,2					-5,4
Gross public debt/GDP					98					101,5
Eurozone										
GDP (%)	0,6	1,2	0,9	0,1	0,8	0,1	0,5	1,3	1,2	0,6
Core CPI (%)	8,0	5,8	4,5	3,9	5,6	3,2	3,1	2,3	1,7	2,6
Federal funds (%)	3,50	4,00	4,00	4,00	4,00	4,00	3,75	3,50	3,25	3,25
3-month interest rate (%)	3,00	3,60	3,50	3,50	3,50	3,40	3,30	3,10	2,90	2,90
10-year interest rate (%)	2,30	2,30	2,20	2,10	2,10	2,10	2,10	2,10	2,10	2,10
Fiscal balance (% of GDP)					-4,2					-3,3
Gross public debt/GDP					95					93,4
Japan										
GDP (%)	1,6	1,6	1,2	0,8	1,1	0,8	0,8	1,2	1,2	1,0
Core CPI (%)	3,6	2,9	2,4	1,7	2,6	1,7	1,8	1,8	1,8	1,8
Federal funds (%)	-0,10	-0,10	-0,10	-0,10	-0,10	0,00	0,00	0,00	0,00	0,00
3-month interest rate (%)	0,00	0,00	0,00	0,00	0,00	0,05	0,05	0,20	0,20	0,00
10-year interest rate (%)	0,30	0,40	0,50	0,75	0,75	1,00	1,00	1,00	1,00	1,00
Fiscal balance (% of GDP)					-11					-7
Gross public debt/GDP					260					275
China										
GDP (%)	4,5	8,8	5,0	4,6	5,7	4,2	3,9	4,6	6,1	4,7
Core CPI (%)	1,3	2,3	1,8	2,5	2,0	2,5	2,2	2,3	2,4	2,4
Federal funds (%)	2,00	2,00	2,00	2,00	2,00	2,00	2,00	2,10	2,20	2,20
3-month interest rate (%)	2,45	2,40	2,40	2,50	2,50	2,55	2,60	2,65	2,70	2,70
10-year interest rate (%)	2,86	3,00	3,15	3,20	3,20	3,35	3,50	3,65	3,80	3,80
Fiscal balance (% of GDP)					-8					-6
Gross public debt/GDP					131					132

Source: Think Economic and Financial Analysis, ING Monthly, May 2023, p. 5.

In 2024, the economic growth of the United States is forecast to stand at zero, which is not a positive forecast. In the euro area, the situation looks a bit better, but the 0.6% GDP growth does not inspire optimism. China is in the best situation, with an economy expected to grow by as much as 4.7%. According to the forecast by the National Bank of Poland, Polish GDP in 2024 is expected to be up 2.1%, but the 5.7% inflation forecast would still put Poland among the countries with the highest CPI[35], of course if international and national forecasts come true.

Chart 10. Impact of Brexit on the economy (% difference in UK real GDP compared to "stay" scenario)



Source: Statista, The economic impact of Brexit.

In the EU, the Spanish Chamber of Commerce (Cámara de Comercio de España) as well as the Italian Union of Chambers of Commerce (Unioncamere) seem particularly optimistic about their respective countries' growth compared to forecasts of the International Monetary Fund, while the German Chamber of Commerce and Industry (DIHK) is expecting a greater slowdown in Germany's growth with an estimated 3% drop in 2023. The slowdown for Germany most likely reflects the side effects of the war in Ukraine and especially of the major downward adjustments for the economies most vulnerable to cuts in supplies of Russian gas[36].

According to the British Chambers of Commerce, the United Kingdom will have the lowest expected growth rate in 2023. According to the International Monetary Fund, the high inflation rate in the UK decreases the purchasing power and tightens the monetary policy, affecting consumer expenditure and business investment. The share of Brexit in the high inflation level can be also a factor of discrepancy between the two growth estimates. In this respect, according to the Centre for European Reforms (CER), Brexit has decreased UK's GDP by 5.5%, investments by 11%, and commodity trade by 7% since Q2 2022.

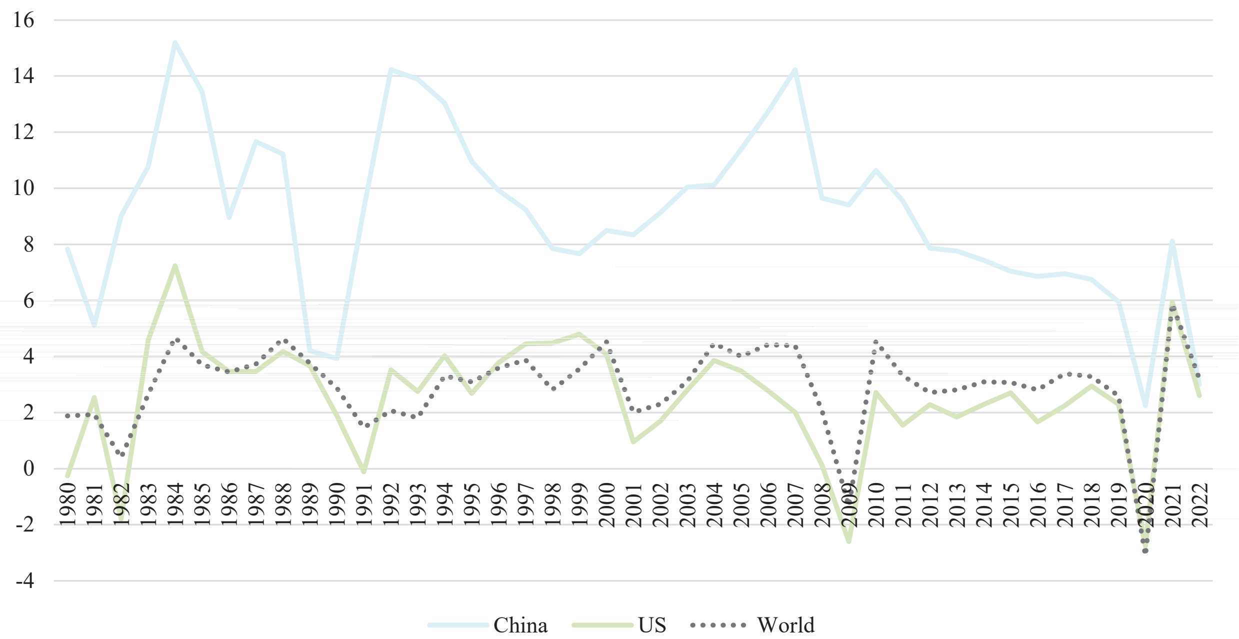
35 National Bank of Poland, Inflation rate and GDP projection—March 2023, https://nbp.pl/projekcja-inflacji-i-pkb-marzec-2023/.

36 International Monetary Fund, *World Economic Outlook*, October 2022, https://www.imf.org/en/Publications/WEO/Issues/2022/10/11/world-economic-outlook-october-2022.

Asian economies will drive most of the global growth in 2023 as they are benefiting from the ongoing dynamics of the reopening and from less intensive inflationary pressure compared to other regions. **It must be borne in mind, however, that the Chinese GDP estimates have been routinely called into question since mid-2000s, with recent research estimating that the Chinese official statistics overstated the annual growth by 1.8 percentage point between 2010 and 2016**[37].

Europe and the USA will probably experience more or less visible stagflation in 2023, which a nearly zero real economic growth combined with high inflation. The relatively solid labour markets should, however, shield the economy against real recession. The real economic growth in the USA and the euro area could rise to over 1% again in 2024 and it will probably follow that sideways trend with a slight progress. Real GDP growth worldwide should accelerate in 2024 to 2.5% and be equally distributed among regions[38].

Chart 11. Growth rates of the U.S., China and the world economy from 1980 to 2022



Source: L. Tsoulfidis, P. Tsaliki, the long recession and economic consequences of the COVID-19 pandemic, Investigación Económica.

The above diagram presents real GDP growth rates of the United States, China and global economy. The data come from an International Monetary Fund publication encompassing the fifth long economic cycle (1983–2007) and the period of 1980–202, and help visually present the evolution of the economic growth and the COVID-19 outcome.

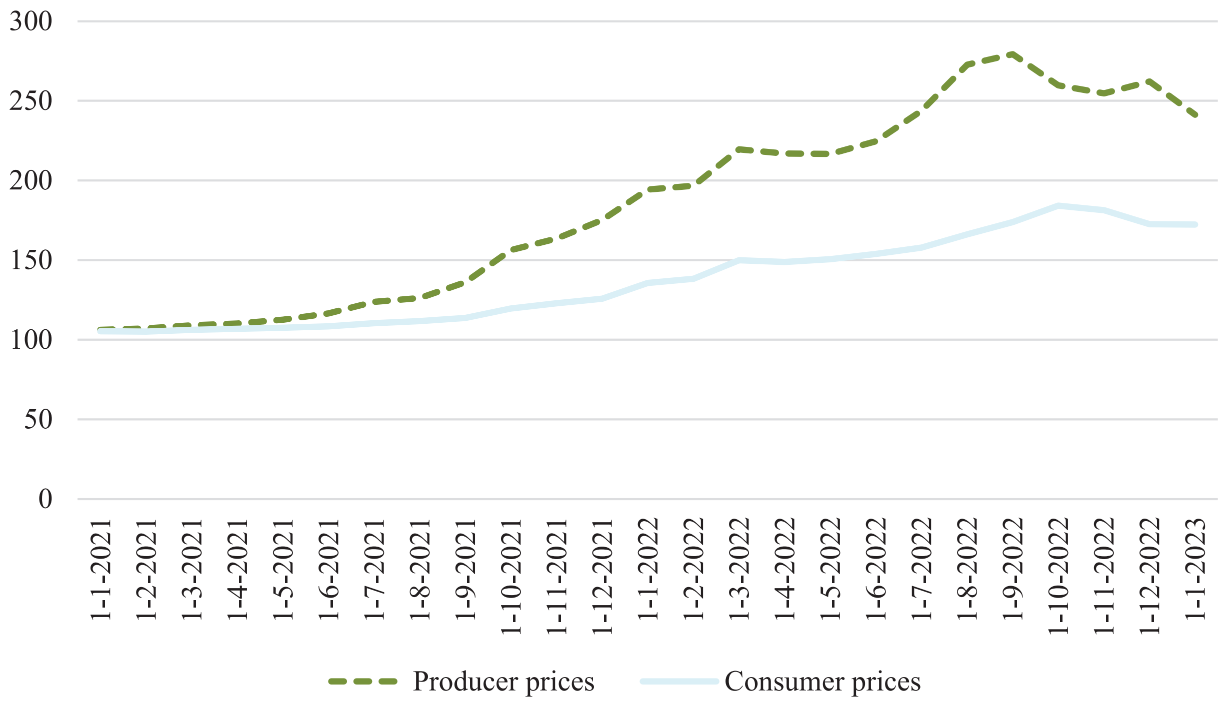
37 Noam Angrist, Pinelopi Koujianou Goldberg, Dean Jolliffe, *Why Is Growth in Developing Countries So Hard to Measure?*, "The Journal of Economic Perspectives", Summer 2021, Vol. 35, No. 3, pp. 215–242.

38 Global Economic Outlook, The Conference Board, https://www.conference-board.org/topics/global-economic-outlook.

It should be pointed out that the ascendant phase of the fifth long economic cycle was characterised by shallow business cycles. From 2021 onwards, the forecast is that some economies will go back to the post-2007 low stagnant growth rates.

Following the Russian invasion on Ukraine in 2022, energy and raw material markets became the deciding factor driving the global economy. The fears that natural gas supplies to Europe may be reduced and that those countries are threatened with major recession have proved unwarranted, at least for the time being. However, the consequences of last year's record-breaking energy prices will continue to leave a mark on economic growth rate and inflation rate in 2023, especially in Europe. Also, it is difficult to predict whether European winter in the 2023/2024 season will be frosty or mild, with climate determining gas prices and availability.

Chart 12. Consumer and producer prices of energy carriers



Source: Eurostat.

In addition to the war in Ukraine, heightened tensions between the USA and China and in the Middle East are creating geopolitical threats which may have a significant impact on the global outlook[39].

39 Munich Re's Economic Outlook 2023: *High inflation and geopolitics to shape the global economy in 2023*, https://www.munichre.com/landingpage/en/economic-outlook-2023.html.

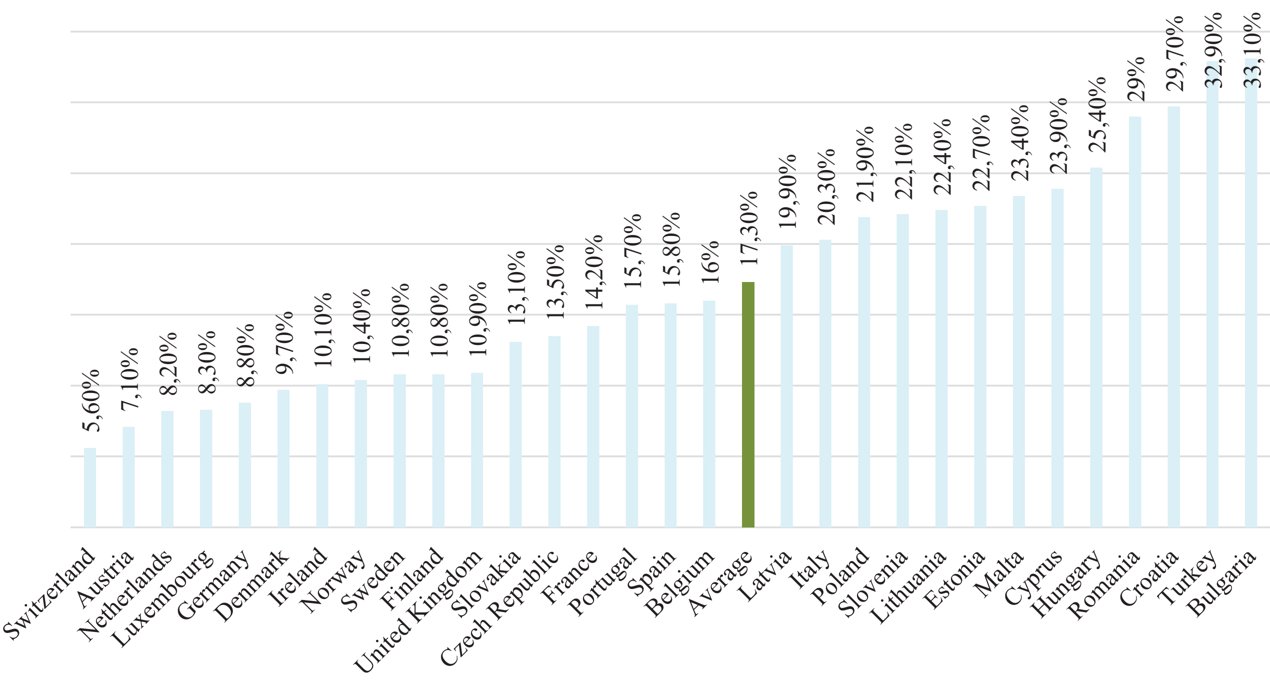
Amid high volatility and reduced purchasing power of respective currencies, the informal sector is gaining strength, where both enterprises and households try to keep free financial means at their disposal at the expense of decreasing public law liabilities. This is truer of developing countries than developed ones, where the informal sector is broadly defined as non-registered activities, which function in the economic system but to a certain extent unlawfully.

In Afghanistan, the illegal drug business is estimated to account for up to one third of GDP but in official economic growth statistics it is not included. Based on data from households in 69 countries, the International Labour Organisation (2018) estimates that informal economy accounted for 41% of GDP in Sub-Saharan Africa, ranging from less than 30% in South Africa to 60% in Nigeria, Tanzania and Zimbabwe.

Making use of data from 158 countries from 1991–2015, Medina and Schneider (2018) estimate that the average size of 'grey' economy stands at 31.9% of GDP, with the highest share in Zimbabwe (60.6%) and Bolivia (62.3%).

This, however, is not only a problem of developing countries. In European countries, too, such as Bulgaria (33.1%), Turkey (32.9%) and Croatia (29.7%), it is quite a serious problem, too. The average size of grey economy in 31 European countries in 2022 amounted to 17.3% of GDP. Poland's result is slightly above the average (20.3%).

Chart 13. Size of the shadow economy in 31 European countries in 2022 (in % of GDP)



Source: F. Schneider, New COVID-related results for estimating the shadow economy in the global economy in 2021 and 2022.

Even though specific grey economy estimates differ, it can be indicated that the share of informal economy in low-income countries is significant. However, since the contribution of informal work generated in formal enterprises (as an indirect input) is not included in the calculation of the final GDP, this probably leads to understating the informal sector's contribution to GDP.

This probably also leads to understating the economic growth as it is generally believed that informal employment in formal enterprises is on the rise in developing countries. This understatement is clearer in countries with high informal employment and a large number of formal enterprises, i.e. in medium-income countries[40].

One of the greatest problems for today's economies worldwide is that of growing tensions on the labour market. Many factors related to COVID-19 pandemic, i.e. health issues, immigration decline and changes in professional preferences, which are linked to the economic slowdown, may result in higher unemployment rates. Adding to this are demographic problems, that is fast aging workforce on developed markets and on some large emerging markets as well as political and other threats to the migration of workforce, which limit its overall supply. According to forecasts, in 2050 up to 35% of the society as a whole will be aged 60+.

Table 3. 10 countries or areas with the highest share of people 60 or older in 1980, 2017 and 2050

	1980		2017		2050	
	Country or area	Percentage of people aged 60 or older	Country or area	Percentage of people aged 60 or older	Country or area	Percentage of people aged 60 or older
1.	Sweden	22,0%	Japan	33,4%	Japan	42,4%
2.	Norway	20,2%	Italy	29,4%	Spain	41,9%
3.	Channel Islands	20,1%	Germany	28,0%	Portugal	41,7%
4.	Great Britain	20,0%	Portugal	27,9%	Greece	41,6%
5.	Denmark	19,5%	Finland	27,8%	South Korea	41,6%
6.	Germany	19,3%	Bulgaria	27,7%	China, Taiwan	41,3%
7.	Austria	19,0%	Croatia	26,8%	China, Hong Kong	40,6%
8.	Belgium	18,4%	Greece	26,5%	Italy	40,3%
9.	Switzerland	18,2%	Slovenia	26,3%	Singapore	40,1%
10.	Luxembourg	17,8%	Latvia	26,2%	Poland	39,5%

Source: United Nations (2017). World Population Prospects: the 2017 Revision.

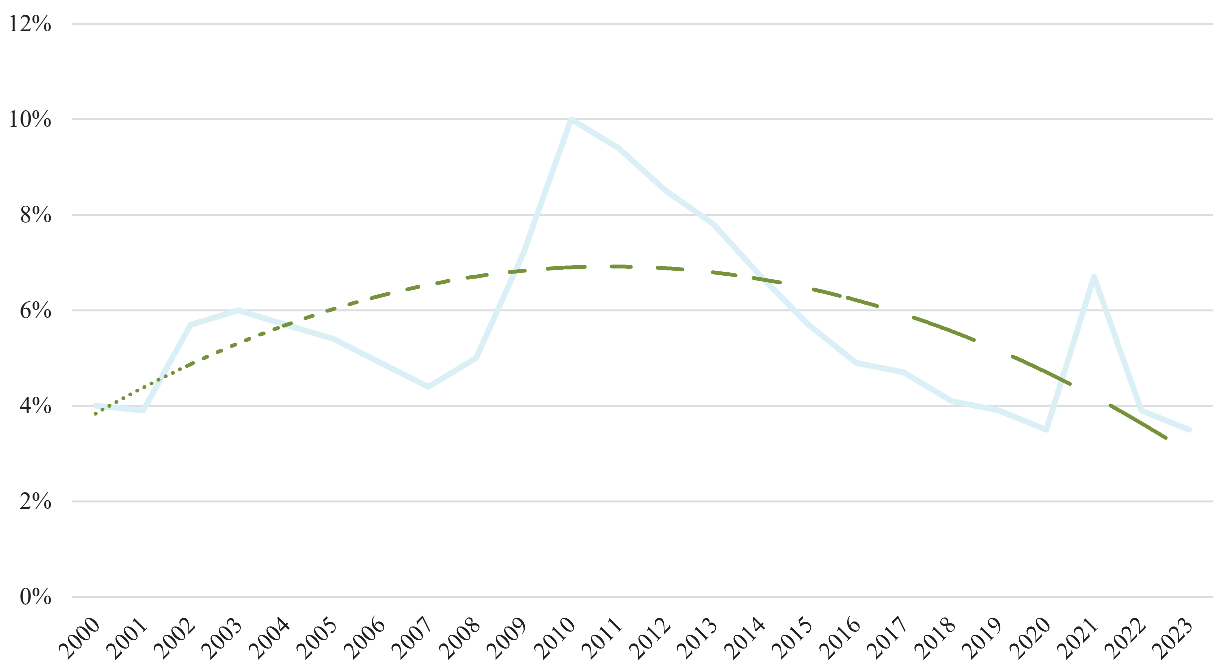
40 N. Angrist, P. Koujianou Goldberg, D. Jolliffe, *Why Is Growth in Developing Countries...*

Minimum wages will be rising, translating into higher inflation rate, and, at the same time, putting pressure on employers' costs. Employee attraction and retention will be among employers' greater problems[41].

Another major problem is the trend consisting in the "Great Resignation". Based on a global survey including 4000 companies and over 9 million employees, it was found that the number of job resignations was growing the fastest among middle-aged employees (e.g. from 30 to 45 years of age). These resignations were also attributed to employees making changes related to work-life balance. Compared to men, women resign from a job faster and for more reasons, including the wish to have access to childcare and provide care for family. Surveys conducted before the pandemic show that employment, job openings and job resignations reached new maximum levels in 2018.

The political response to the pandemic changed the pay-to-profit ratio virtually overnight, leading to the most massive and dramatic redundancies in the last 100 years of the US history.

Chart 14. Unemployment rate in the United States from 2000 to 2023



Source: Bureau of Labor Statistics, U.S. Department of Labor.

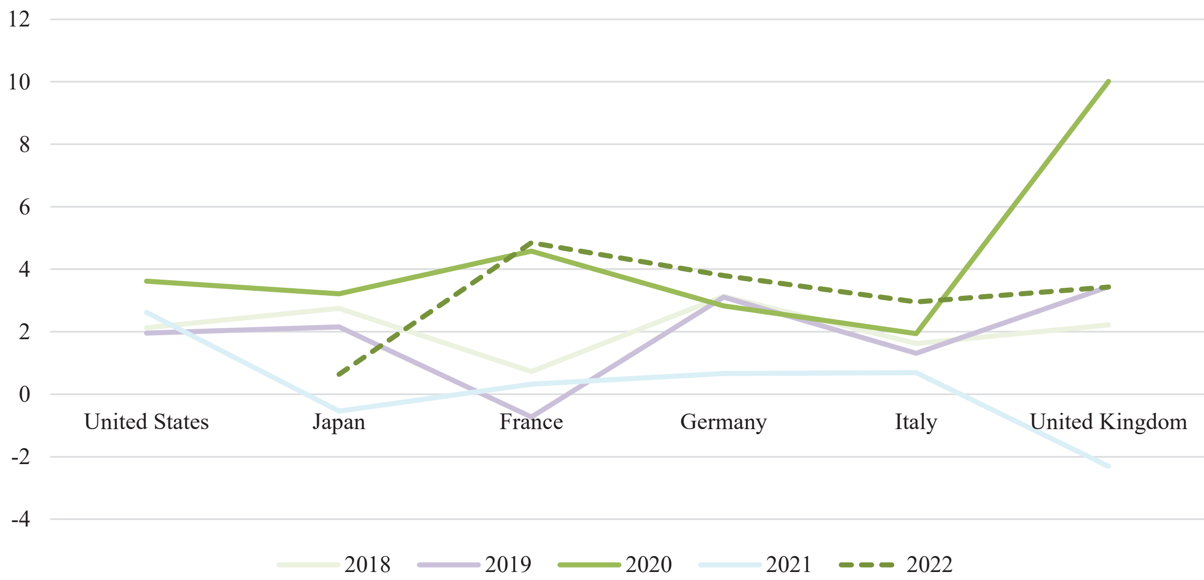
The total non-agricultural employment fell from ca. 152.5 million in February 2020 to ca. 130.2 million in April 2020, representing a 14.62% drop. As a result, the forecast number of job resignations stood at ca. 3.9 million in January 2022 compared to the actual level of job resignations of nearly 4.3 million.

41 L. Ha, *Labour market tightness likely to continue, despite potential increase in unemployment*, Economies in 2023: Key Trends to Watch, Euromonitor International, 1.05.2023.

Despite a major drop in job resignations in the beginning of the pandemic, the level of job resignation quickly bounced back, exceeding the number of job resignations that could have been expected in line with the historic trend, excluding systemic one-off events.

JOLTS data demonstrate that during the pandemic healthcare and social work employees would resign from their job at an average monthly rate of 2.71% i.e. 464,044 people per month. At the end of January 2022, more than 10.67 million healthcare and social work employees had resigned voluntarily, compared to 80.87 million employees of all sectors combined. The share of total resignations for this first-line employee group during the pandemic stood at 13.20%. In addition to burnout and exhaustion, many first-line employees currently believe their salary is incommensurate with their work-site hazards and with the commitment required of them during the pandemic[42].

Chart 15. Unit labor cost in selected developed economies 2019–2023 (ratio of labor costs to labor productivity, index 2010=100)



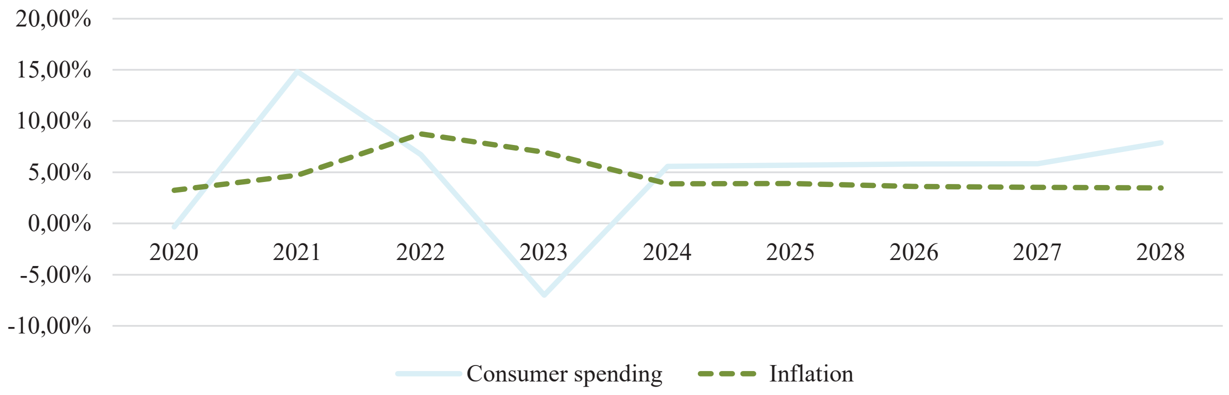
Source: Euromonitor International based on national statistics/UN/OECD/Eurostat.

High inflation rate, which involves a decline in consumers' purchasing power, greatly limits consumer expenses. A great part of less affluent households earmarks the bulk of their income to the basic necessities such as food and utilities. In industrialised countries, the high inflation rate and the declining real income noticeably temper demand for consumer goods. Moreover, the strong recovery experienced by consumption after the COVID-19 recession in 2020 is now slowing down[43].

42 V. Amanor-Boadu, *Empirical evidence for the "Great Resignation"*, Empirical evidence for the "Great Resignation" : Monthly Labor Review: U.S. Bureau of Labor Statistics (bls.gov) [accessed: 5.06.2023].

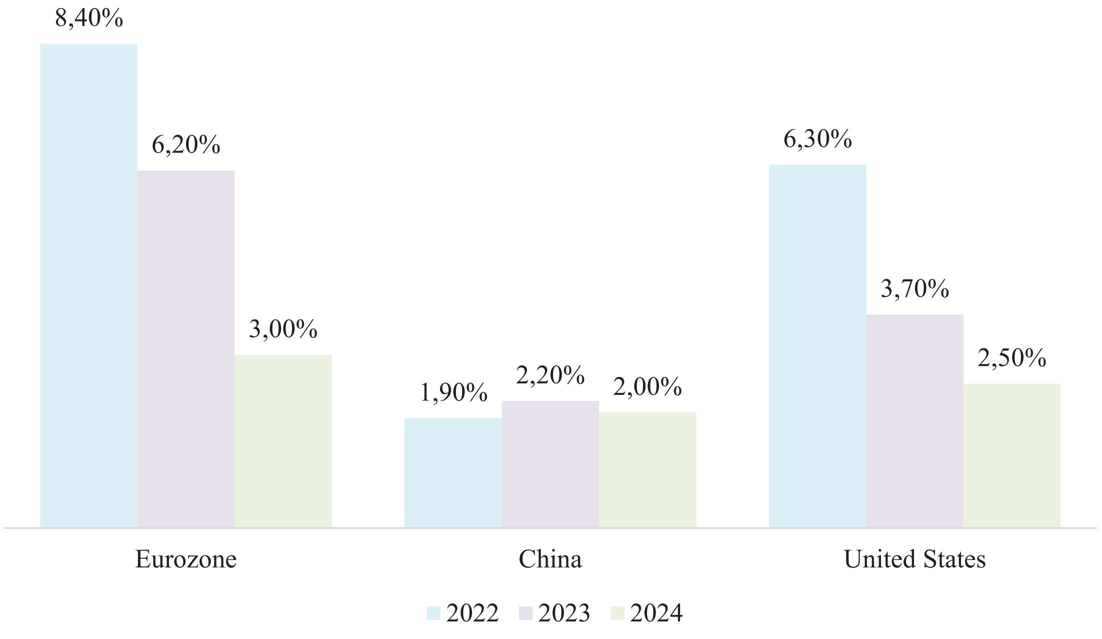
43 Munich Re's Economic Outlook 2023: *High inflation and geopolitics to shape the global economy in 2023*, https://www.munichre.com/landingpage/en/economic-outlook-2023.html.

Chart 16. Real urban consumer spending growth and annual inflation worldwide 2019–2025



Source: Euromonitor International based on national statistics/OECD/UN/International Monetary Fund (IMF), International Financial Statistics (IFS).

Chart 17. Global inflation forecast for 2022–2024



Source: OECD.

Economic growth rates in 2024 and the following years will most likely be below the pre-pandemic trend, taking account of the persisting weak supply.

The inflation rate, though lower than observed in 2022, could remain relatively high for a variety of reasons, e.g. the expected continued shortage of workforce, deglobalisation and global energy transition.

An especially difficult situation is that of tourist cities, where local economy is to a great extent dependent on services related to leisure, recreation and accommodation. It is expected that Bangkok and Athens will be the most affected ones. On the other hand, cities in urban areas of Asia, Middle East and Africa are expected to record a buoyant increase in consumer expenses due to a solid demand increase, with the YoY real growth forecast of 4.2% and 2.5% respectively for 2023[44].

Over the last decades, one of the inflation-dampening factors globally was foreign trade, and to be more precise the fact that China, thanks to its immense human resources, had contributed to reducing production costs, which dampened inflation in many countries. Global customs tariffs had also been lowered, which also led to lower inflation and to continued low interest rates[45].

Table 4. Foreign Direct Investment by number of projects in 2022

Asia		Europe	
Country	**Projects**	**Country**	**Projects**
India	994	United Kingdom	1119
Australia	420	Germany	820
Singapore	384	Spain	702
China	314	France	536
Japan	194	Poland	493
Vietnam	175	Netherlands	306
Malaysia	143	Ireland	305
Philippines	131	Belgium	252
South Korea	98	Turkey	252
Hong Kong	98	Portugal	240
Other	524	Other	1812
Total	**3475**	**Total**	**6837**

Source: FDI Markets.

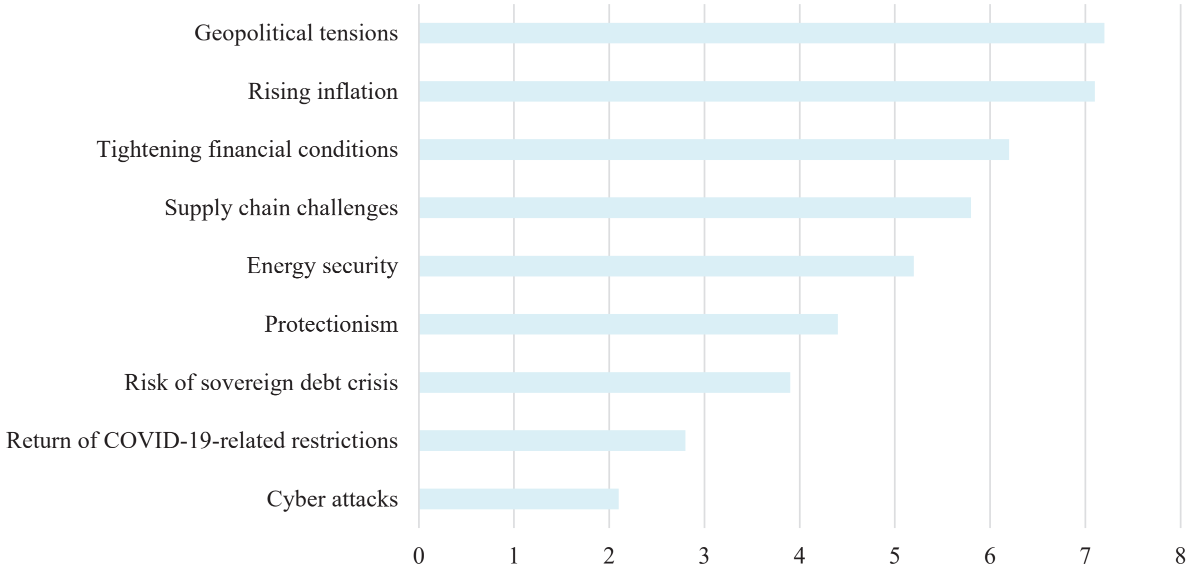
44 F. Razvadauskas, *Urban consumer spending to be curbed by inflation and cost of living crisis*, Economies in 2023: Key Trends to Watch, Euromonitor International, 1.05.2023.

45 https://tvn24.pl/biznes/z-kraju/inflacja-i-stopy-procentowe-glowna-ekonomistka-ebor-u-beata-javorcik-do-tak-niskich-stop-jak-przed-2022-rokiem-juz-nie-wrocimy-7055169.

"Although the media rhetoric would make one assume that the US and China will all but cease to trade with each other soon, the reality is highly different. Current trade between the US and China is at record levels, and the US is the leading destination for Chinese exports. According to China's General Administration of Customs, in 2022, the US accounted for 16.2% of Chinese exports (or $582bn). The US is also China's fourth-largest import market – behind Taiwan, South Korea and Japan – accounting for 6.5% of total Chinese imports ($178bn)"[46]. However, the way direct foreign investment was shaped in 2022 shows that China had fewer DFI projects than the incomparably smaller Poland.

The global economic polycrisis has clearly translated into greater challenges to the world economy.

Chart 18. Key challenges for the global economy in 2023



Source: Global Economic Survey 2023, EuroChambres.

The key challenge to the business community in 2023, according to Global Economic Survey, is posed by the continuing geopolitical tensions and instability. High inflation rate ranks second, reflecting the growing food and energy prices[47]. Threats to energy security also seem a major challenge for 2023, especially for the EU, where it is ranked first by Eurochambres.

46 G. Barklie, *China's FDI decline: Why are foreign companies decreasing their dependency on Asian giant?*, Investment Monitor, https://www.investmentmonitor.ai/insights/chinas-fdi-decline-foreign-companies-covid-geopolitics/.

47 CEPR, *Russia's invasion of Ukraine has led to higher inflation expectations of individuals in Germany*, April 2022, https://new.cepr.org/voxeu/columns/russias-invasion-ukraine-has-led-higher-inflationexpectations-individuals-germany.

According to IMF, higher costs of external finance aimed to combat inflation will probably cause many economies to shrink in 2023[48], which explains why tightening of global financial conditions is ranked as the third greatest challenge for 2023. Supply chain and challenges with the supply of intermediate products are in fourth place. In recent years supply chain vulnerabilities have been steadily rising due to export limitations as well as due to the lack of transparency and the continued market asymmetry, including the concentration of production in only a few countries[49].

Economies worldwide have experienced energy security disruptions already in 2021 due to sudden shocks in commodity prices and the predictions that energy prices will keep rising in the near future[50]. In 2022, the war in Ukraine and the attendant disruptions on global energy markets further aggravated the fears of shortages of energy supply, leading to further price increases.

Contrary to the widespread claim that COVID-19 is over by now, many of its consequences are still visible in the economy. It had a particularly high impact on enterprises: 4.1% permanently closed down and 11.8% are closed temporarily.

However, among companies that remained open, 53.9% were at some point closed due to COVID-19, with a median closure time of six weeks. This indicates that small enterprises are much more vulnerable to closure than bigger ones.

Currently, 30.2% of companies in the US have started or start or expand their online activities, although the share of online sales is zero for over two-thirds of all companies. In addition, 28.5% of companies start or increase delivery of goods and services, with similar figures for foreign companies. Even more companies start or increase the number of remote work hours for their employees—35.7% of all companies and 47.5% of companies with foreign capital declare to have done so. On average, 25.9% of employees of those companies work remotely, and 30.9% employees of companies with foreign capital[51].

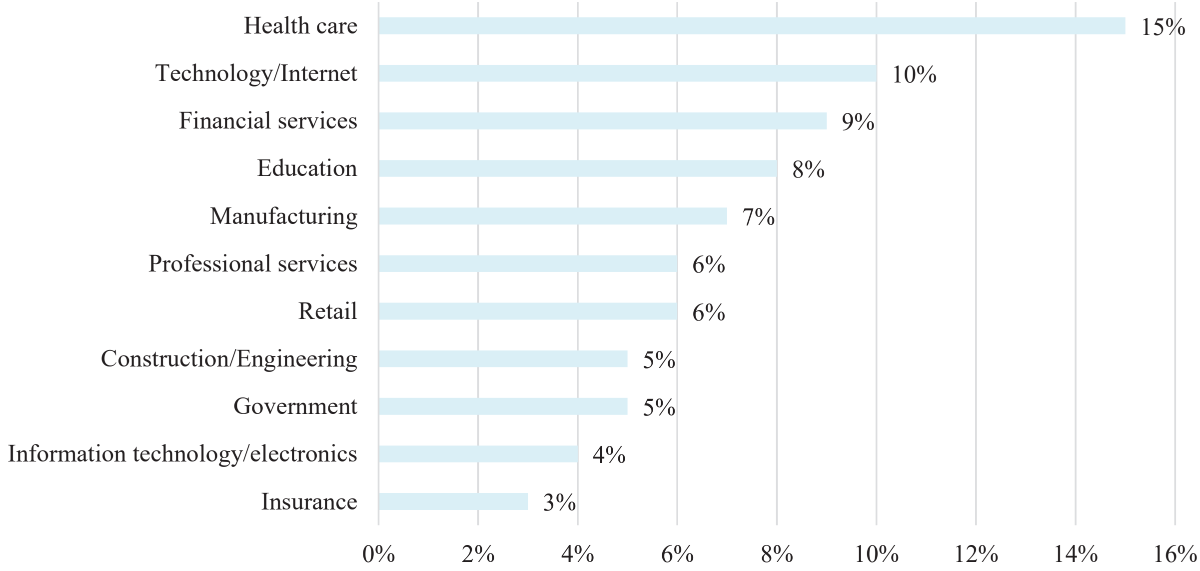
48 Bloomberg, *World Economy Is Headed for a Recession in 2023*, Researcher Says, December 2022, https://www.bloomberg.com/news/articles/2022-12-26/world-economy-is-headed-for-arecession-in-2023-researcher-says.

49 OECD, *The supply of critical raw materials endangered by Russia's war on Ukraine*, August 2022, https://www.oecd.org/ukraine-hub/policy-responses/the-supply-of-critical-raw-materials-endangered-byrussia-s-war-on-ukraine-e01ac7be/.

50 CNBC, *Goldman Sachs says oil prices could be higher for much longer*, October 2021, https://www.cnbc.com/2021/10/14/goldman-sees-sustained-high-prices-for-oil-in-the-coming-year.html.

51 A. Waldkirch, *Firms around the World during the COVID-19 Pandemic*, "Journal of Economic Integration", March 2021, Vol. 36, No. 1, pp. 3–19.

Chart 19. Industries with the largest share of remote workers in the U.S.



Source: OWL Labs.

According to remote work statistics contained in the recent OWL Labs report, the US healthcare sector has surprisingly the highest percentage of remote employees (15%), followed by: Internet and technology (10%), financial services (9%), education (8%), manufacturing (7%) and professional services (6%)[52].

The closure of many sectors of the economy also had a major impact on global export. Export is an important measure of a company's involvement in the global economy. For all companies in the sample, irrespective of their ownership status, the average share of export sales stood at 11.5% pre-COVID-19. This share was down by 10.2% amid COVID-19 pandemic.

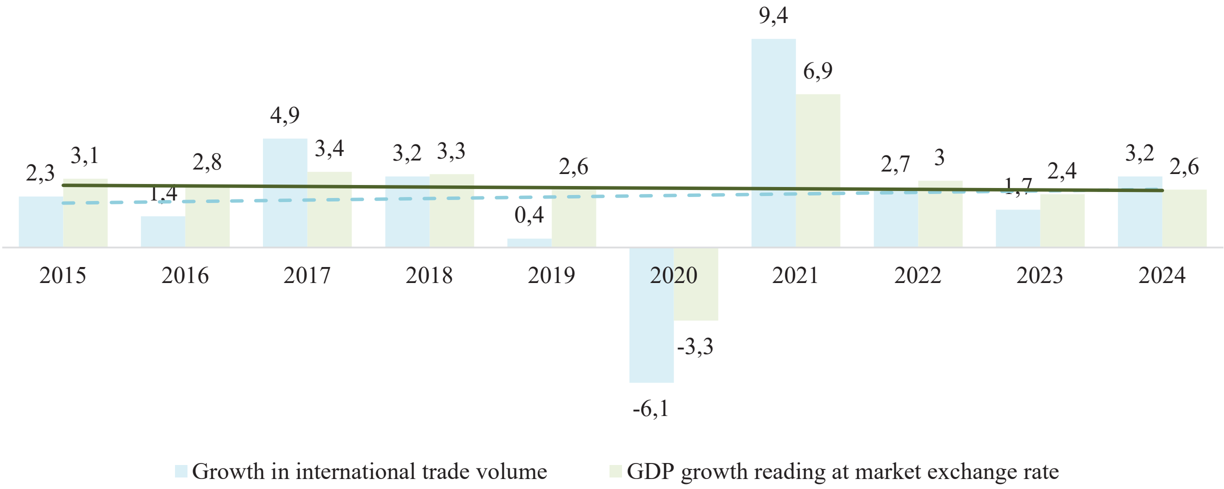
80.2% companies report that the overall sales fell compared to the same month in the previous year. However, only 55% of companies which export at all report a decline in export sales. Domestic companies largely export finished goods to consumers on foreign markets, while multinationals are involved in global supply chains with a significant trade in semi-finished goods.

Domestic companies source 36.7% of their inputs from foreign sources, while the corresponding share for companies with foreign capital stands at 54.3%. Except for transport services, service sectors usually have a lower share of sales intended for export than manufacturing sectors[53].

52 Remote work statistics – 2023, https://truelist.co/blog/remote-work-statistics/.

53 A. Waldkirch, *Firms around the World during the COVID-19 Pandemic...*

Chart 20. Global merchandise trade volume and GDP growth 2015–2024



Source: World Trade Organization.

We are observing an overall decline in world trade, but it partly results from structural changes, from the fact that a major part of economies and trade involves services as well as the fact that the pandemic sped up the growth of virtual services.

A number of key ongoing shifts were greatly accelerated by the pandemic.

The first trend is the technological shift: robotics, automation, AI and machine learning are entirely transforming the way production systems work, in manufacturing, services and farming alike. All that is repetitive and requires no empathy, dexterity, creativity or intuition can be in future done by machines. Moreover, the price of necessary capital for capital-intensive production systems that use robots and automation is lower in developed economies and near large markets than in developing countries. This means that the global drive towards cheaper locations is no longer the factor determining the location of production processes.

The second trend accelerated by the pandemic is personalisation—from products such as genetically matched drugs to personalised name T-shirts—which requires automated processes at scale.

The third trend is the immediateness. The pandemic has boosted our desire to have things delivered to our doorstep this afternoon or tomorrow morning at the latest rather than in three weeks in a container from across the globe. This requires manufacturing done closer to home[54].

Many of those shifts fit squarely with trends initiated before the war of Russia with Ukraine, but—as it seems—the war has accelerated the timeline, leading to much faster changes than could have been expected even back in January 2022.

Russian military operations have led to further cracks in supply chains, which was mostly due to massive economic sanctions imposed by the West on Russia, contributing to a higher inflation rate, especially in the EU countries. Sanctions are effective only when there are intensive

54 I. Goldin, *The World after Coronavirus*, "Horizons: Journal of International Relations and Sustainable Development", SUMMER 2021, No. 19: *Building Forward Better: After the Rain*, pp. 46–63.

economic ties before the country imposing them and the country being their object. For example, in Germany China is not perceived as a sufficiently credible economic partner. Many people call on the country's leaders and legislators to reconsider and restrict various forms of cooperation with China—from economics to science to education.

In the United States, China is clearly perceived as an economic and political rival. This is why additional retail channels and distribution centres are becoming a fact, not without an impact on Chinese economy itself, which will have to tackle higher unemployment rate and create alternative methods for GDP generation: not only through internal consumption but also through new trade expansion[55].

55 A. Libman, *A New Economic Cold War?* "Horizons: Journal of International Relations and Sustainable Development", SUMMER 2022, No. 21, pp. 148–159.

2. Development challenges of the Polish economy

2.1. Demand, production and prices

Table 5. Poland: Demand, production and prices

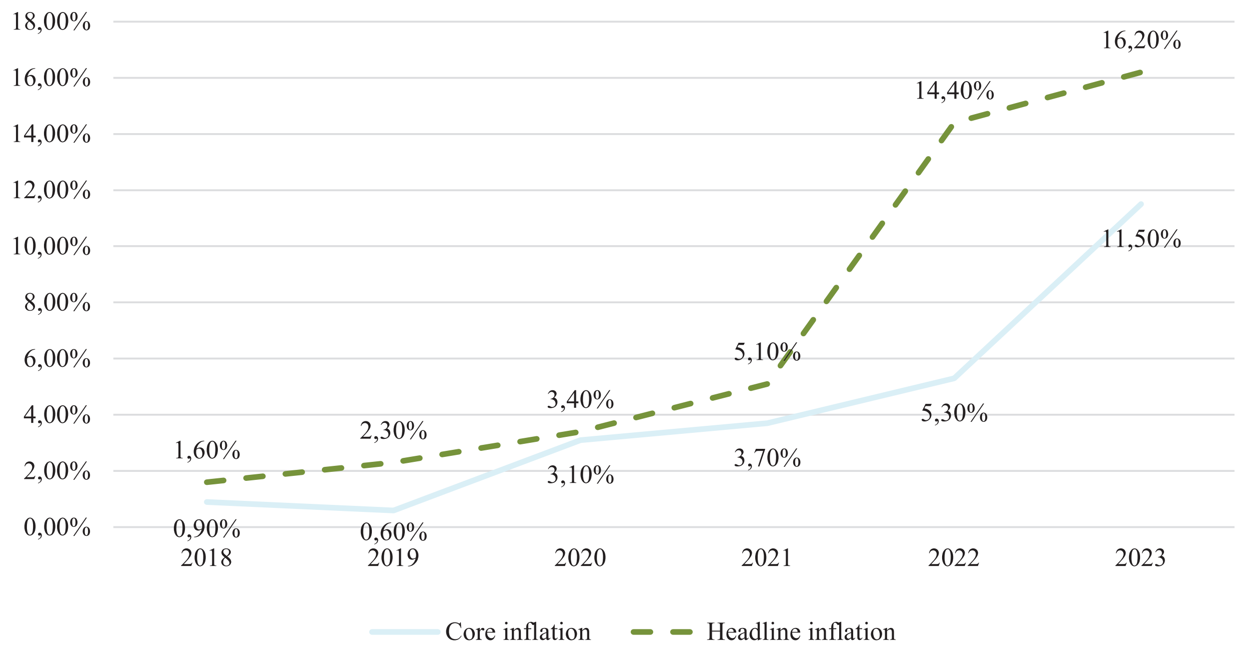
	2019	2020	2021	2022	2023	2024
Poland	**Current prices PLN bn**			**Percentage change, volume (2015 prices).**		
GDP at market prices	2 288,5	-2,0	6,8	4,5	0,9	2,4
Private consumption	1 322,3	-3,4	6,3	4,5	2,0	2,5
Public consumption	412,4	4,9	5,0	1,9	3,0	2,1
Gross fixed capital formation	432,9	-2,3	2,1	6,1	1,2	3,5
Final domestic demand	2 167,6	-1,6	5,2	4,2	2,0	2,6
Inventory formation	36,1	-1,1	3,0	3,9	-1,9	0,0
Total domestic demand	2 203,8	-2,8	8,3	9,3	0,3	2,4
Exports of goods and services	1 217,4	-1,1	12,5	3,6	1,2	1,5
Imports of goods and services	1 132,7	-2,4	16,1	6,8	1,8	1,5
Net exports	84,7	0,6	-1,0	-1,6	-0,3	0,0
Supplementary items						
GDP deflator	–	4,3	5,1	11,5	8,9	5,4
Consumer price index	–	3,4	5,1	14,2	10,8	6,6
Core inflation index	–	3,8	4,1	8,7	7,8	4,4
Unemployment rate (% of labor force)	–	3,2	3,4	2,9	3,5	3,8
Household savings rate, net (% of disposable income)	–	7,3	0,4	-1,3	1,5	-0,4
General government financial balance (% of GDP)	–	-6,9	-1,8	-3,5	-4,9	-4,0
General government debt, Maastricht definition (% of GDP)	–	57,2	53,8	51,9	53,6	54,9
Current account balance (% of GDP)	–	2,5	-1,5	-3,7	-3,5	-2,9

Source: OECD Economic Outlook 112 database.

Real GDP growth is expected to slow to 0.9% in 2023 due to higher energy prices due to Russia's aggression against Ukraine, weaker domestic demand and a deteriorating external environment before rebounding to 2.4% in 2024.

Inflation should peak in early 2023 but will likely remain above target until the end of 2024. Annual consumer inflation rose to 15.7% in September, driven by higher energy and food prices, while core inflation reached 11.5%. Consumer and business confidence continued to weaken while industrial production growth slowed down. An important fact is that inflation is projected to fall significantly to 6.6% in 2024, which will slow down price growth and increase the purchasing power of money.

Chart 21. Headline and core inflation growth in Poland from 2018 to 2023



Source: Eurostat, European Commission Business and Consumer Surveys; and OECD Economic Outlook 112 database.

Inflation will fall as retail energy price growth slows and monetary policy tightens. Growing spare production capacity will put downward pressure on inflation during the economic recovery, partly driven by EU funds. There is considerable uncertainty, and risks to the outlook remain skewed to the downside. On the other hand, expansionary fiscal policy may prolong high inflation and require additional monetary tightening. A quick end to the war would accelerate economic growth and reduce inflation[56].

A report published by the Food and Agriculture Organization of the United Nations (FAO) shows that in April 2023, global food prices were the lowest since July 2021. This result is 20.5%

56 OECD Economic Outlook, Vol. 2022, Issue 2: Preliminary Version © OECD 2022.

lower than the peak reached in March 2022 but still 27% higher than the average price level in 2014–2016.

The main products considered for the food price index are cereals, dairy, vegetable oils, meat and sugar. The only product group that has become more expensive over the past year is sugar (7.7%). Meat prices recorded a decline of 5.3%, dairy 10.6%, and cereals 18.6%, while the largest decline was seen among vegetable oils – by as much as 47.7%[57].

However, the decline in global food prices does not translate into a decline in food price dynamics in Poland. According to March 2023 data from the Central Statistical Office, prices of food and non-alcoholic beverages in Poland increased by 24% over the year[58].

Table 6. Food price index

		Food price index	Meat	Dairy	Cereals	Vegetable fats	Sugar
2005		67,4	71,8	77,2	60,8	64,4	61,2
2006		72,6	70,5	73,1	71,2	70,5	91,4
2007		94,3	76,9	122,4	100,9	107,3	62,4
2008		117,5	90,2	132,3	137,6	141,1	79,2
2009		91,7	81,2	91,4	97,2	94,4	112,2
2010		106,7	91,0	111,9	107,5	122,0	131,7
2011		131,9	105,3	129,9	142,2	156,5	160,9
2012		122,8	105,0	111,7	137,4	138,3	133,3
2013		120,1	106,2	140,9	129,1	119,5	109,5
2014		115,0	112,2	130,2	115,8	110,6	105,2
2015		93,0	96,7	87,1	95,9	89,9	83,2
2016		91,9	91,0	82,6	88,3	99,4	111,6
2017		98,0	97,7	108,0	91,0	101,9	99,1
2018		95,9	94,9	107,3	100,8	87,8	77,4
2019		95,1	100,0	102,8	96,6	83,2	78,6
2020		98,1	95,5	101,8	103,1	99,4	79,5
2021		125,7	107,7	119,1	131,2	164,9	109,3
2022		143,7	118,8	142,4	154,7	187,8	114,5
2022	April	158,4	121,9	146,7	169,7	237,5	121,5
	May	158,1	122,9	144,2	173,5	229,2	120,4

57 R. Hirsch, You *can't see it in Polish stores, but food around the world has cheapened by more than 20% over the past year*, https://businessinsider.com.pl/gospodarka/wielkie-zmiany-w-e-receptach-i-teleporadach-ciebie-takze-dotkna/pk959qj.

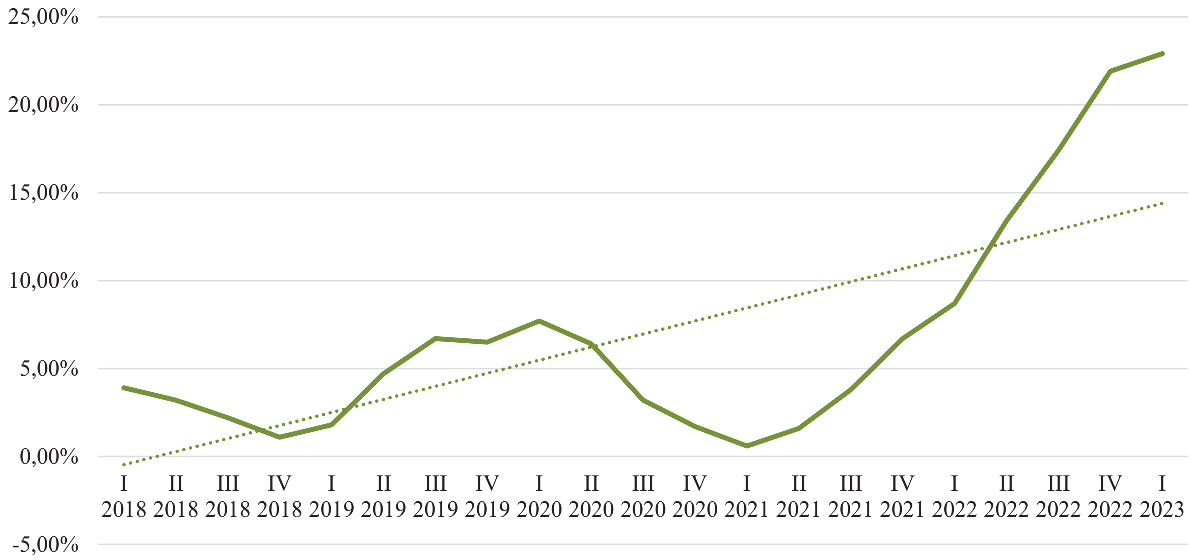
58 m. Rudke, *Food price growth in Poland refuses to slow down. Opposite to the rest of the world. When will relief come?*, https://businessinsider.com.pl/gospodarka/ceny-zywnosci-w-polsce-szybuja-odwrotnie-niz-na-swiecie-kiedy-nadej-dzie-ulga/d916jce.

		Food price index	Meat	Dairy	Cereals	Vegetable fats	Sugar
	June	154,7	125,9	150,2	166,3	211,8	117,3
	July	140,6	124,1	146,5	147,3	168,8	112,8
	August	137,6	121,1	143,4	145,6	163,3	110,5
	September	136,0	120,3	142,7	147,9	152,6	019,7
	October	135,4	116,8	139,3	152,3	151,3	108,6
	November	134,7	114,6	137,4	150,1	154,7	114,4
	December	131,8	112,4	138,2	147,3	144,6	117,2
2023	January	130,2	111,1	134,5	147,5	140,4	116,8
	February	129,8	113,3	129,4	146,7	135,9	125,2
	March	126,5	113,0	126,8	138,6	131,8	127,0
	April	127,2	114,5	124,6	136,1	130,0	149,40

Source: FAO.

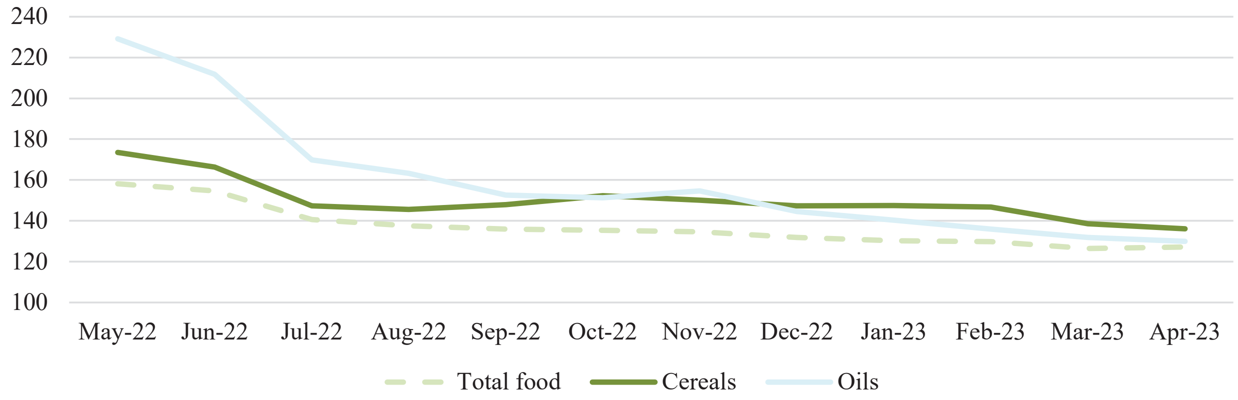
Food prices are among the factors most influencing the rise in the consumer price index (CPI) and energy carriers' prices. However, comparing energy and food prices through March 2022, we find that food prices have risen by as much as 24%, while energy prices have „only" risen by 16.2%.

Chart 22. Food price inflation in Poland (%)



Source: PKO Reasearch.

Chart 23. FAO global food price indexes



Source: Poland in global supply chains. Global Opportunities vs. Local Risks, Report by ING Bank of Poland and the European Economic Congress, April 2023.

The disparity between the FAO and Central Statistical Office data is mainly because the FAO considers the situation in the market for agricultural raw materials, while the CSO examines changes in the prices of specific products on store shelves. Despite the marked decline in agricultural commodity prices, prices continue to rise in other categories, i.e. processing, transportation or sales.

The war in Ukraine has translated into an increase in global food prices, especially in categories in which the country is a major supplier (oils, grains). The initial supply shocks also impacted other prices through so-called second-round effects[59].

Record high prices for energy carriers were the main channel for the war's impact on Polish companies. Price fluctuations had already begun before the war; the local maximum was in the summer of 2022 (a 16-fold increase in gas prices; a 6-fold increase in coal and electricity prices than at the beginning of 2021). In subsequent months, prices stabilised, although they remain significantly higher than before the pandemic.

The Central Statistical Office announced in January 2023 that the annual average consumer price index for energy carriers in 2022 was 132.5, meaning that in 2021, energy prices increased by 32.5%[60]. The war in Ukraine and the need to reduce the purchase of energy carriers from Russia have caused a significant crisis in Poland. Alarming predictions suggest that there will be a repeat of the coal crisis that occurred in the 2022/23 winter season. In February 2023, Polish mines produced 3.7 million tons of hard coal. The Industrial Development Agency announced that this is the worst result in the history of its measurement-taking[61]. In 2022, the price of coal used to heat homes rose by 150%. Government information indicates that one in four Poles heat

59 *Poland in global supply chains. Global Opportunities vs. Local Risks, Report by ING Bank of Poland and the European Economic Congress, April 2023.*

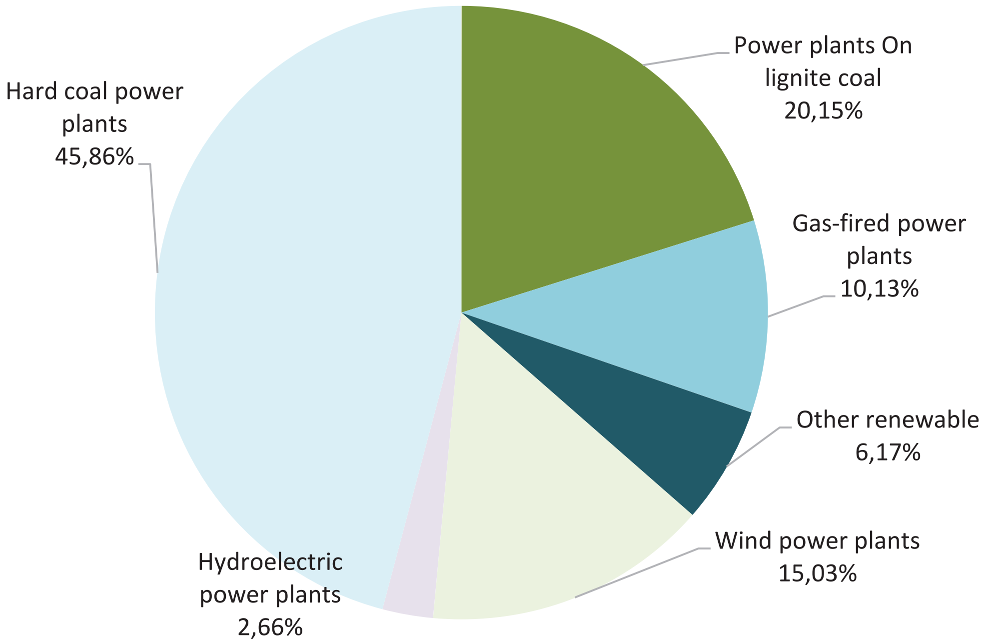
60 Announcement of the President of the Central Statistical Office of January 13, 2023 on the average annual consumer price index for energy carriers in 2022.

61 B. Oksinska, *Output from Polish mines has fallen sharply. Will there be a repeat of the coal crisis?*, https://businessinsider.com.pl/gospodarka/czy-zabraknie-wegla-w-tym-roku-jakie-beda-ceny-wegla-branza-wyjasnia/xmdbqtt.

their homes with coal. Energy cost predictions state that electricity prices will rise by 30% in 2023[62]. Wholesale electricity prices peaked in the third quarter of 2022 and have gradually fallen.

Utility power plants accounted for the largest share of electricity production in March 2023. Hard coal (46%) and lignite (20%) dominated. As for green energy, wind farms contributed more than 15% to energy production and other renewables more than 2.7%[63].

Chart 24. Electricity production structure in March 2023



Source: Electricity production structure – March 2023, https://www.rynekelektryczny.pl/produkcja-energii-elektrycznej-w-polsce/.

In 2022, fuel prices at gas stations rose at an alarming rate, with the highest price recorded in July 2022. In December 2021-July 2022, the price of gasoline (Pb 95) increased by 22.61%, diesel fuel (ON) by 22.48%, and gas (LPG) by 2.03%. However, fuel prices are not expected to drop noticeably in 2023. Most forecasts indicate they will likely remain the same as at the end of 2022.

62 *Europeans shocked by galloping energy prices*, https://energia.rp.pl/ceny-energii/art36763851-europejczycy-porazeni-galopujacymi-cenami-energii.

63 Electricity Production Structure – March 2023, https://www.rynekelektryczny.pl/produkcja-energii-elektrycznej-w-polsce/.

Table 7. Average retail fuel prices in 2022

	Pb 95	ON	LPG
December 2021	5,99 PLN/l	6,00 PLN/l	3,38 PLN/l
January 2022	5,72 PLN/l	5,76 PLN/l	3,14 PLN/l
February 2022	5,21 PLN/l	5,26 PLN/l	3,70 PLN/l
March 2022	6,67 PLN/l	7,00 PLN/l	3,80 PLN/l
April 2022	6,50 PLN/l	7,23 PLN/l	3,68 PLN/l
May 2022	6,70 PLN/l	7,45 PLN/l	3,66 PLN/l
June 2022	7,51 PLN/l	7,56 PLN/l	3,39 PLN/l
July 2022	7,74 PLN/l	7,74 PLN/l	3,45 PLN/l
August 2022	6,63 PLN/l	7,48 PLN/l	3,29 PLN/l
September 2022	6,53 PLN/l	7,56 PLN/l	3,15 PLN/l
October 2022	6,94 PLN/l	8,08 PLN/l	3,11 PLN/l
November 2022	6,64 PLN/l	7,96 PLN/l	3,06 PLN/l
December 2022	6,56 PLN/l	7,70 PLN/l	2,99 PLN/l
January 2023	6,68–6,83 PLN/l	7,84–7,99 PLN/l	2,99–3,10 PLN/l

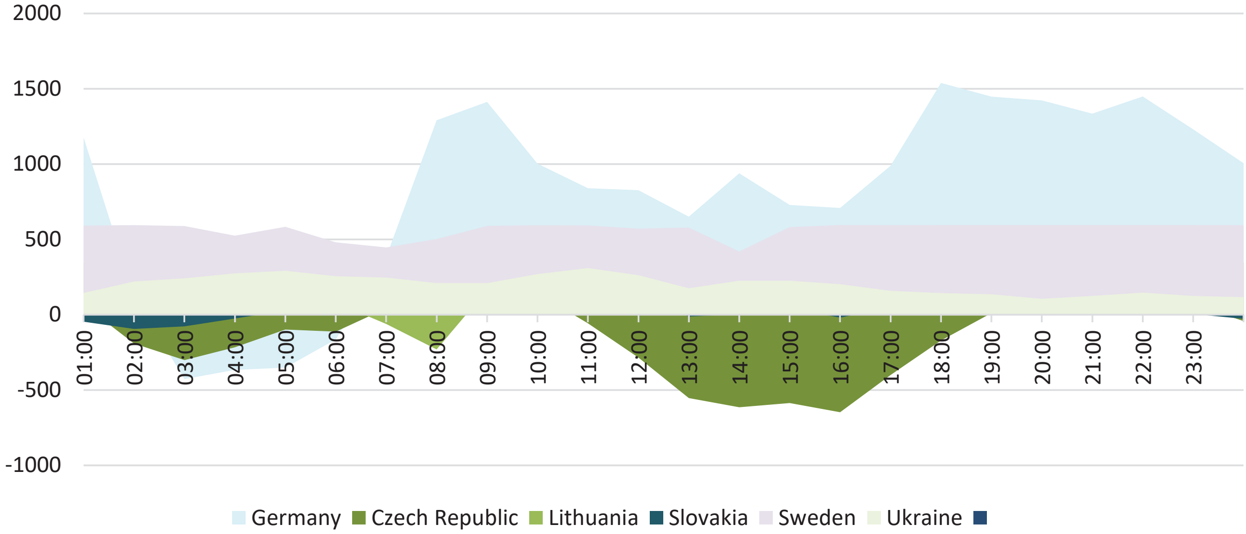
Source: Yanosik.

Poland imports about 60% of its energy but has diversified its energy supply sources away from Russia. Since February, the exchange rate has depreciated, and energy and food prices have risen, accounting for most of the increase in headline inflation. As of February 2023, Poland imports energy from all its neighbours except Ukraine. We import the most energy from Germany, followed by Sweden[64].

There are currently about 1.3 million Ukrainian refugees in Poland (equivalent to 3.5% of Poland's population). Most of them have managed to find jobs, but many are working in entry-level positions. This situation has temporarily eased labour shortages in some sectors of the economy. Direct trade with Russia, Belarus and Ukraine, accounting for 3–5% of the GDP before 2022, has fallen sharply due to sanctions. Production in the second quarter of 2022 was only 0.3% higher than in the last quarter of 2021.

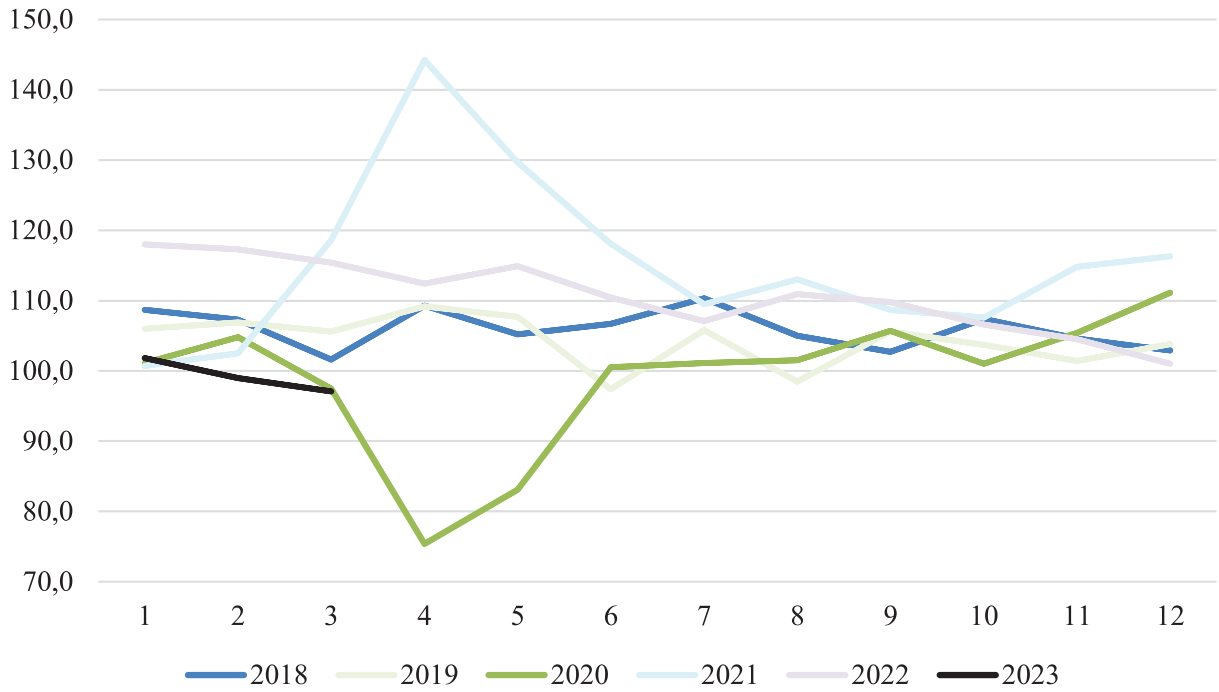
64 *Poland trapped, hostage to coal energy? Exceptionally high electricity imports*, https://globenergia.pl/polska-w-potrzasku-zakladnikiem-energetyki-weglowej-wyjatkowo-wysoki-import-energii/.

Chart 25. Electricity imports to Poland (MWh)



Source: energy.instrat.pl.

Chart 26. Industrial output sold



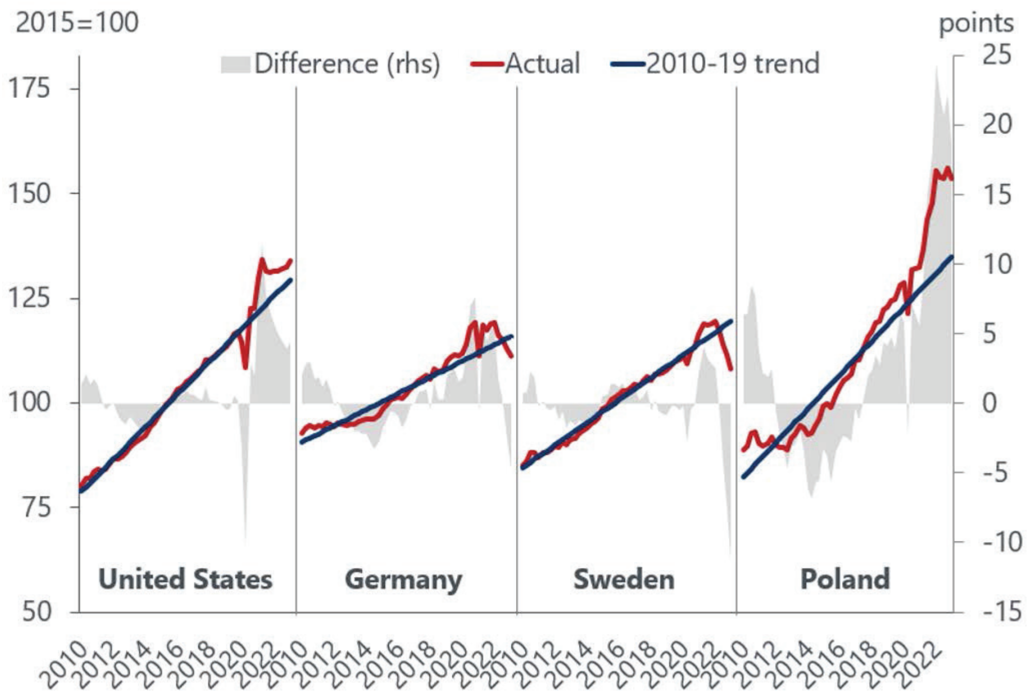
Source: National Chamber of Commerce.

Excluding seasonal factors, data from the Central Statistical Office show a 1.3% decline in industrial output sold compared to December 2022 and a 0.3% increase year-on-year. Production in 2023 increased in 18 divisions, but the largest increases were seen in products sold in electricity, gas, steam and hot water generation and supply, with a 20.2% increase, as well as in mining and quarrying, up 6.7% with respect to December 2022. On a year-on-year basis, the largest increases in output sold were recorded for mining and quarrying (3.9%), manufacturing (2.8%) and manufacturing and supply of electricity, gas, steam and hot water (1.7%).

Data from individual industry divisions show that on a monthly basis, production sold in January 2023 fell in 16 industry divisions, including repair, maintenance and installation of machinery and equipment (60.6%), manufacture of other transportation equipment (24.8%) or manufacture of machinery and equipment (17.7%), among others[65].

The largest deviation in industrial output sold was seen in the second quarter of 2021 when the COVID-19 pandemic restrictions began to ease. By January of this year, sold production had recorded a decline, but the National Chamber of Commerce's forecast for the next few years is that it will be fairly steady.

Chart 27. U.S. and Europe: Retail sales volume



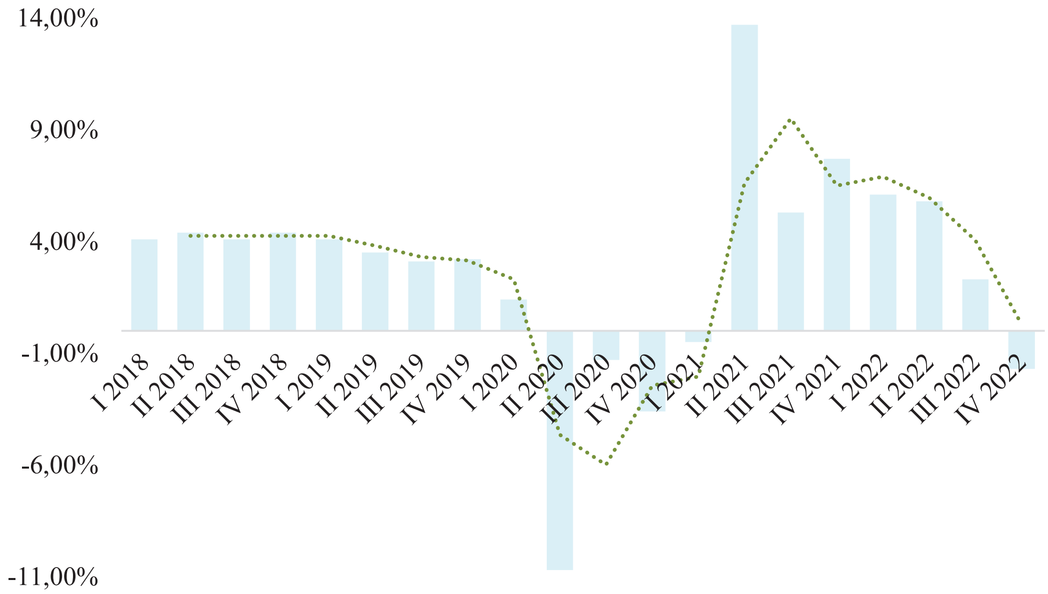
Source: Oxford Economics/Haver Analytics.

65 National Chamber of Commerce, Industry Performance in January 2023, https://kig.pl/wyniki-przemyslu-w-styczniu-2023-nizsze-od-prognoz-kig-i-oczekiwan-rynkowych/.

Considering retail sales in relation to the United States and economies such as Germany and Sweden, Poland recorded a rather puzzling increase. According to data presented by Oxford Economics, consumers in Poland are buying far more than anticipated and more than the other countries presented. When analysing this phenomenon, it is important to consider the high level of inflation. Poland is prone to economic shocks, and in many cases, citizens are increasing their current consumption for fear of further price increases.

Private consumption rose, partly boosted by spending by Ukrainian refugees and the post-pandemic recovery, but investment slowed sharply. Nevertheless, labour markets remain robust, and wage rise has picked up.

Chart 28. Dynamic Consumption Index vs. real deseasonalized consumption dynamics in 2018–2023 (y/y)

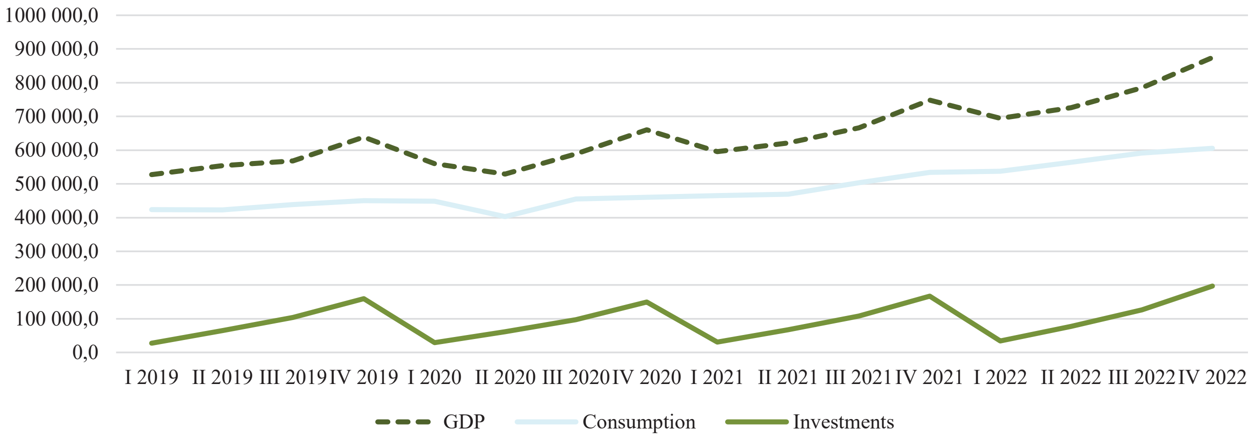


Source: Dynamic Consumption Index (DCI).

In Q1 2023, the DIK index reached 47.71 points, the lowest since Q2 2020, when consumption was dictated by restrictions related to the COVID-19 pandemic. The index shows that Poles save largely on goods purchased regularly and durable goods. A downward trend is also forecast for the second quarter of 2023, which is expected to be fueled by an increase in the number of Ukrainian families returning to the country. The decline in consumption is projected to be the main cause of the recession in the Polish economy[66].

66 Dynamic Consumption Index, http://www.indekskonsumpcji.pl/.

Chart 29. GDP, consumption, investments (PLN million, YOY)



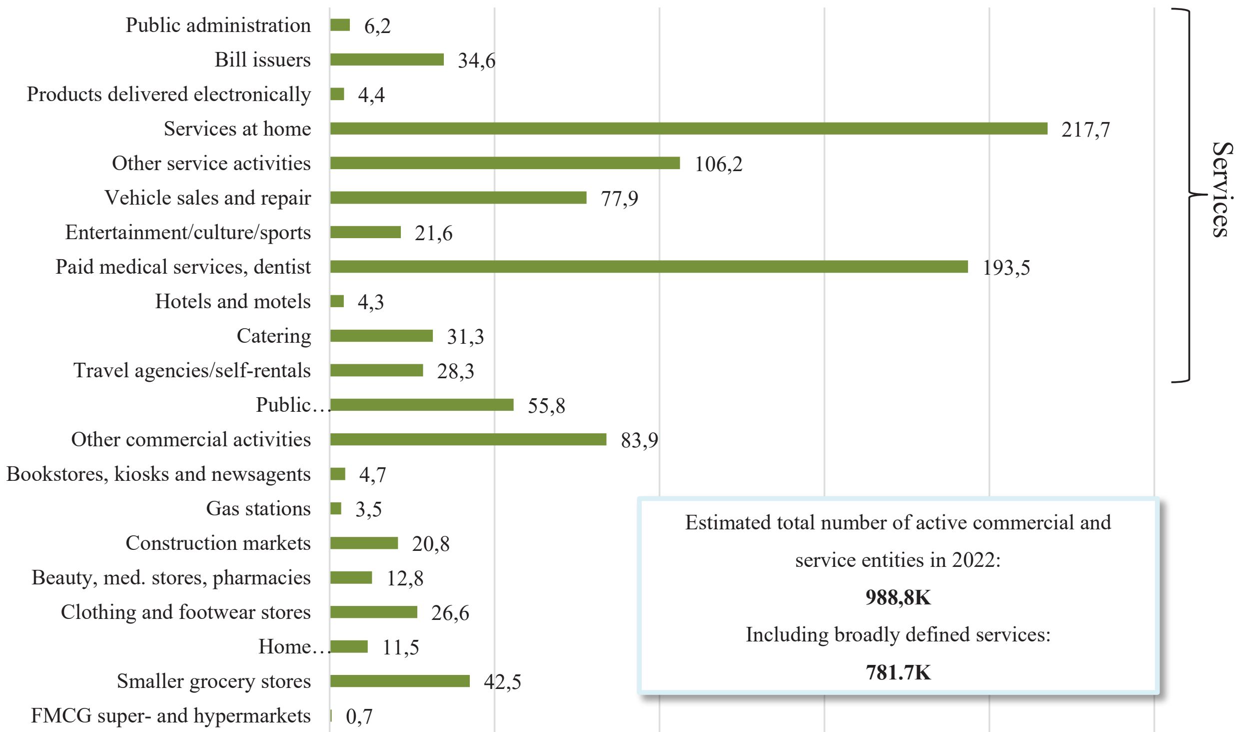
Source: Poland in global supply chains. Global Opportunities vs. Local Risks, Report by ING Bank of Poland and the European Economic Congress, April 2023.

According to data from a report prepared by the ING Bank of Poland and the European Economic Congress in April 2023, the war in Ukraine has had far less impact on private consumption and investment than the COVID-19 pandemic. Nonetheless, a decline in GDP and private consumption was recorded with respect to the previous year.

Fiscal policy will be further expanded to support households and businesses from the effects of the war in 2023 and will be tightened in 2024. Existing support measures, such as the Anti-Inflation Shield, including reductions in VAT and excise taxes on energy and food, have been extended until the end of the year, and it is assumed that support will continue into 2023. Heating subsidies have been introduced, and electricity prices will remain capped. National defence spending is set to increase from 2.2% of GDP in 2022 to 3% by 2023, and healthcare spending is set to increase by 0.25% of GDP, adding to demand pressures. The government is also raising public sector wages by 7.8% and increasing spending on social welfare programs. Given the ever-increasing inflation, the main interest rate was raised from 1.25% in November 2021 to 6.75% in September 2022 and has remained unchanged. Interest rates are expected to continue rising until mid-2023 and reach 8%.

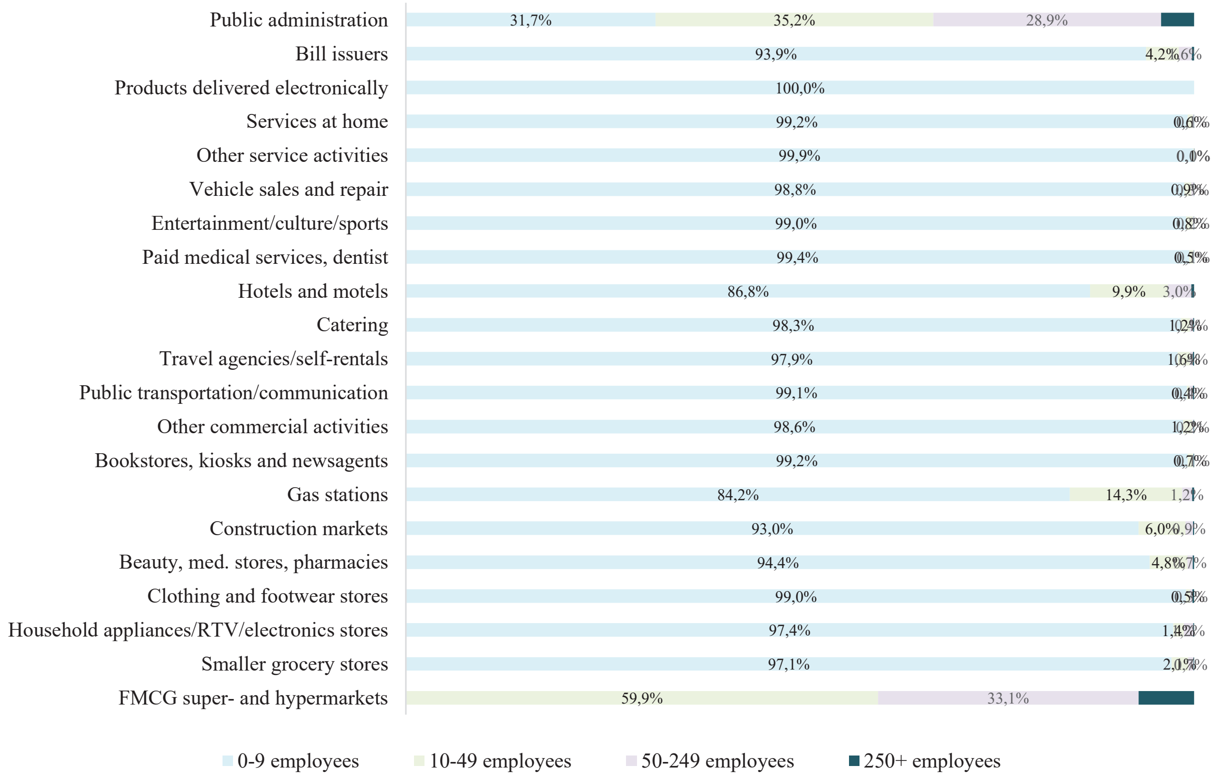
Trade and service entities operating in Poland:

Chart 30. Number of active commercial and service entities, by industry [in thousands]



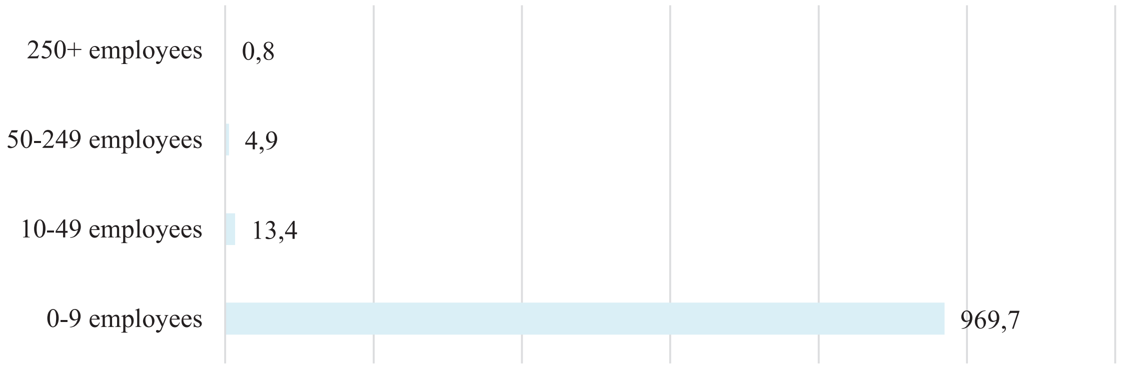
Source: POLASIK Research and CGiFC UMK estimates for 2022, taking into account data from the Central Statistical Office and KANTAR TNS interviews.

Chart 31. Entities by industry and employment size [in %]



Source: POLASIK Research and CGiFC UMK estimates for 2022, taking into account data from the Central Statistical Office and KANTAR TNS interviews.

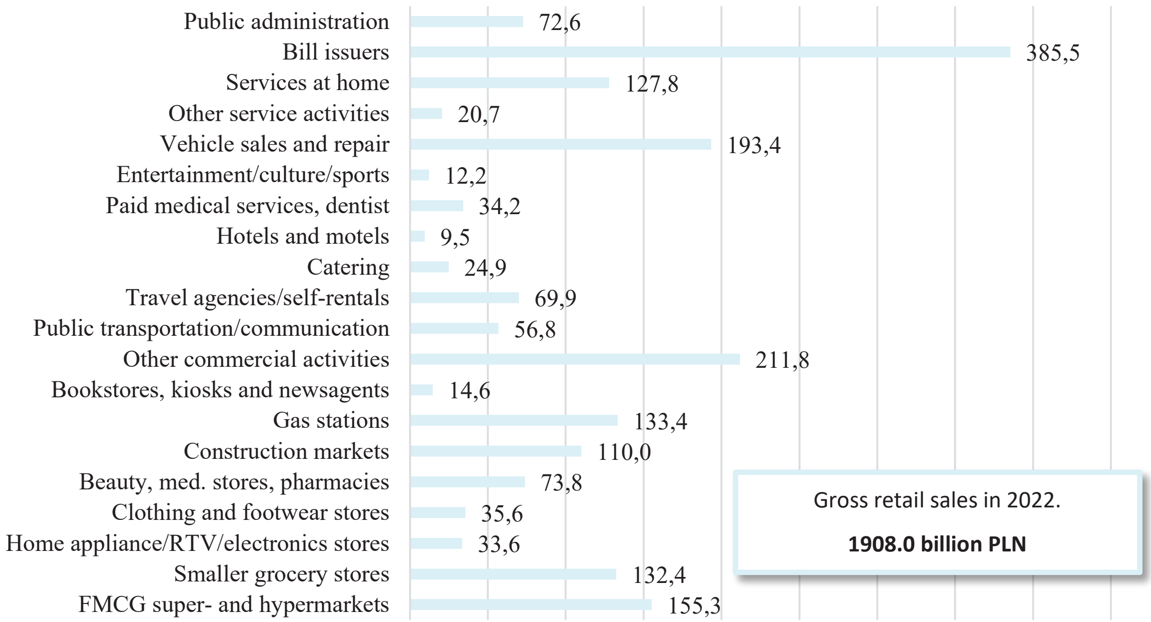
Chart 32. Number of active commercial and service entities, by employment size [in thousands]



Source: POLASIK Research and CGiFC UMK estimates for 2022, taking into account data from the Central Statistical Office and KANTAR TNS interviews.

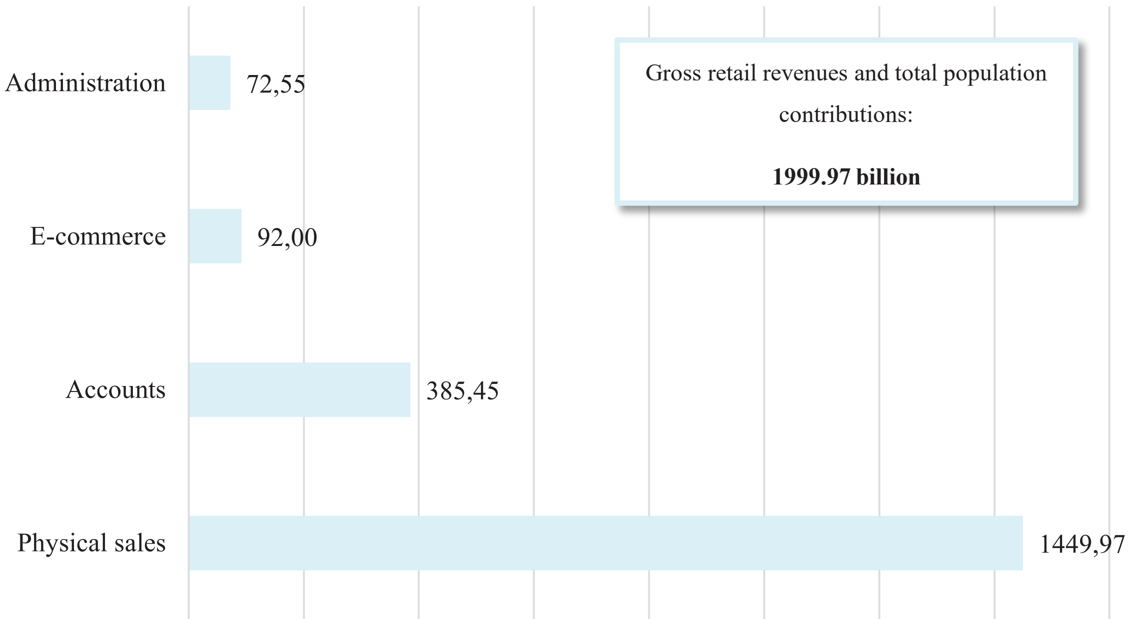
Retail transactions in the Polish market:

Chart 33. Gross retail sales revenue in Poland, by industry [in PLN billion]



Source: POLASIK Research and CGiFC UMK estimates for 2022, taking into account data from the Central Statistical Office and KANTAR TNS interviews.

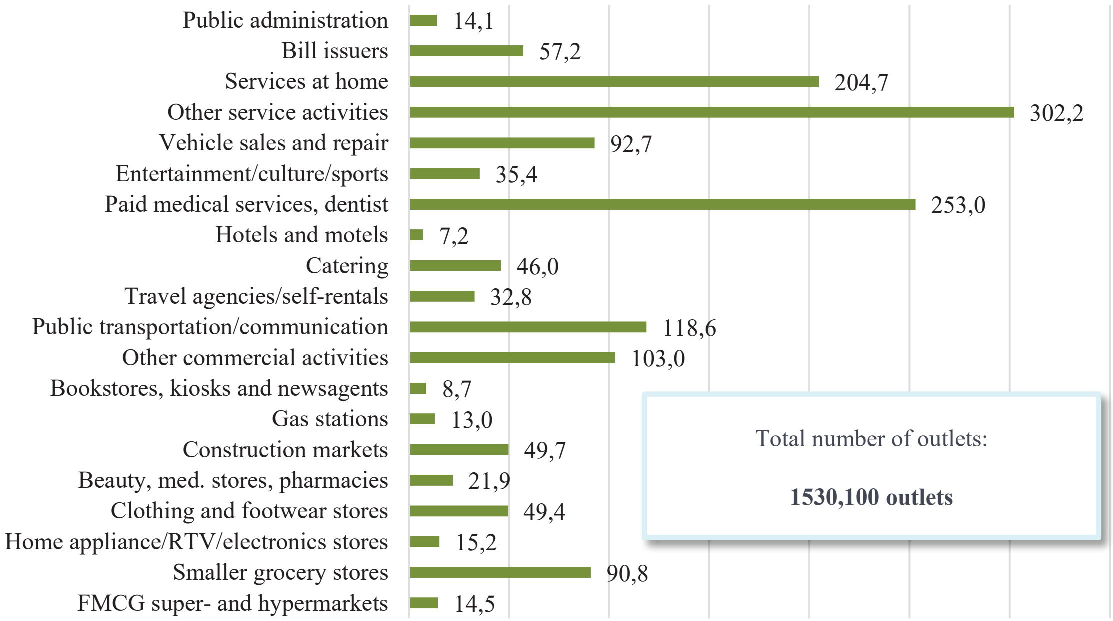
Chart 34. Gross retail revenue and contributions to public administration in 2022 [in PLN billion]



Source: POLASIK Research and CGiFC UMK estimates for 2022, taking into account data from the Central Statistical Office and KANTAR TNS interviews.

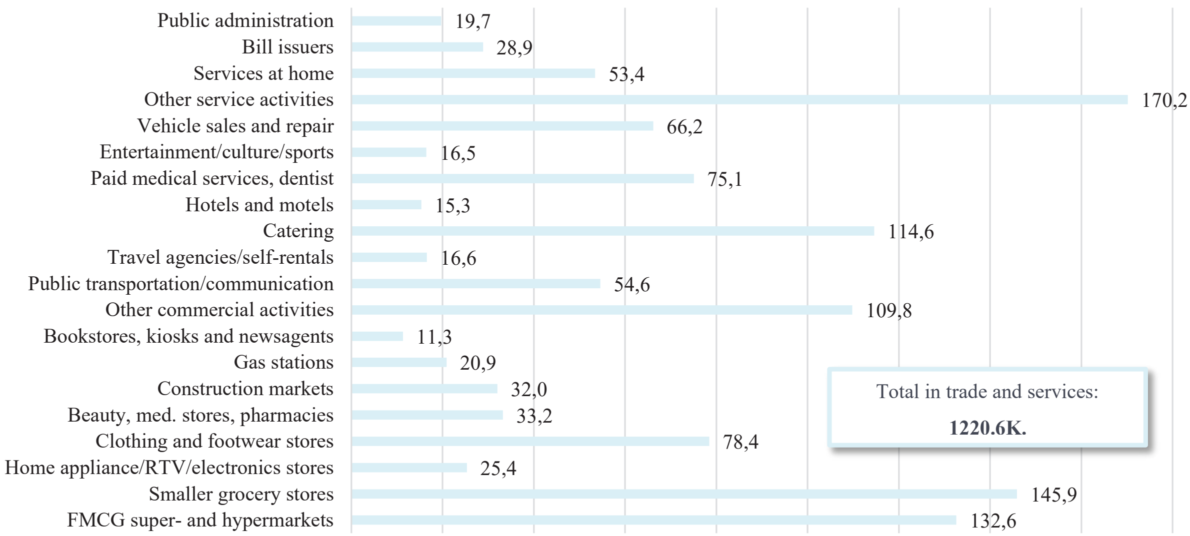
Point-of-sale payment processing infrastructure:

Chart 35. Number of physical retail and service establishments by industry [in thousands]



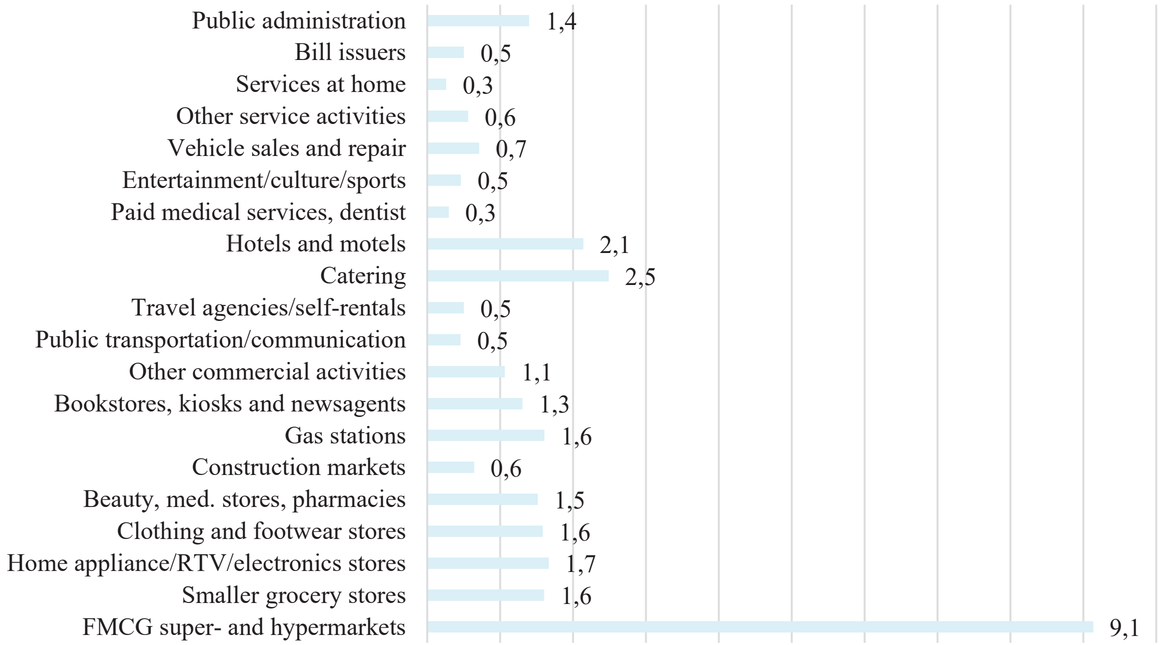
Source: POLASIK Research and CGiFC UMK estimates for 2022, taking into account data from the Central Statistical Office and KANTAR TNS interviews.

Chart 36. Number of EFT-POS payment terminals, by industry [in thousands]



Source: POLASIK Research and CGiFC UMK estimates for 2022, taking into account data from the Central Statistical Office and KANTAR TNS interviews

Chart 37. Number of terminals per point of sale by industry



Source: POLASIK Research and CGiFC UMK estimates for 2022, taking into account data from the Central Statistical Office and KANTAR TNS interviews.

2.3. Agriculture

Agriculture is one of the main sectors of the economy, along with industry and services. In 2022, it accounted for about 2.5% of Poland's GDP but is on a downward trend. This proportion is mainly due to other economic sectors' faster growth and not the agricultural sector weakening[67].

The number of farmers in Poland is relatively large at 2140.8 thousand people, equivalent to 14% of the total workforce. Agriculture's share of employment, as a low-productivity, low-innovation sector, has fallen from more than 25% in 1991[68].

Poland ranks third in Europe in terms of the share of agricultural land in the country's total area. France and Spain are ahead of Poland in this ranking. Eighteen thousand six hundred eight thousand hectares, or 56% of the country's total area, is agricultural land. Such a large area allows for less intensive land use; it facilitates using environmentally friendly production methods.

Polish agriculture is characterised by high fragmentation. The average area of agricultural land (AL) per farm is increasing. In 2002 it was 5.8 hectares, in 2011 – 9.1 hectares; and in 2018 – 11.3 hectares of agricultural land. Despite the accelerating rate of land concentration, slightly over half of Poland's farms (51.9%) use no more than 5 hectares of AL. These farms take up 12.8% of agricultural land. Almost 3/4 of the farms (74.9%) use less than 10 hectares of AL, and their total share of agricultural land is 28.3%[69].

Over half (53.3%) of the surveyed farmers additionally use agricultural land based on a lease (31.7%), lending (14.1%) or other title (7.5%). Three out of four farmers (77.0%) declared they do not lend or lease their land. Most farmers (70.5%) say they can make a living solely from farming.

It should be stressed that in the case of agriculture, there are many barriers to farm development. The obstacles most frequently cited by Polish farmers include inadequate technical equipment (53%), low profitability of production (45.8%) and underdeveloped farm infrastructure in terms of buildings (44.6%). Nearly half of the farmers say investing in new agricultural

67 Presentation of the Report „Polish Countryside 2022. State of the Countryside Report," press release, https://www.fdpa.org.pl/prezentacja-raportu-polska-wies-2022-raport-o-stanie-wsi-notatka-prasowa.

68 *Are the golden years passing? Challenges for the Polish economy in the coming years*, https://obserwatorgospodarczy.pl/2022/03/30/czy-zlote-lata-mijaja-wyzwania-dla-polskiej-gospodarki-na-najblizsze-lata-raport-og/.

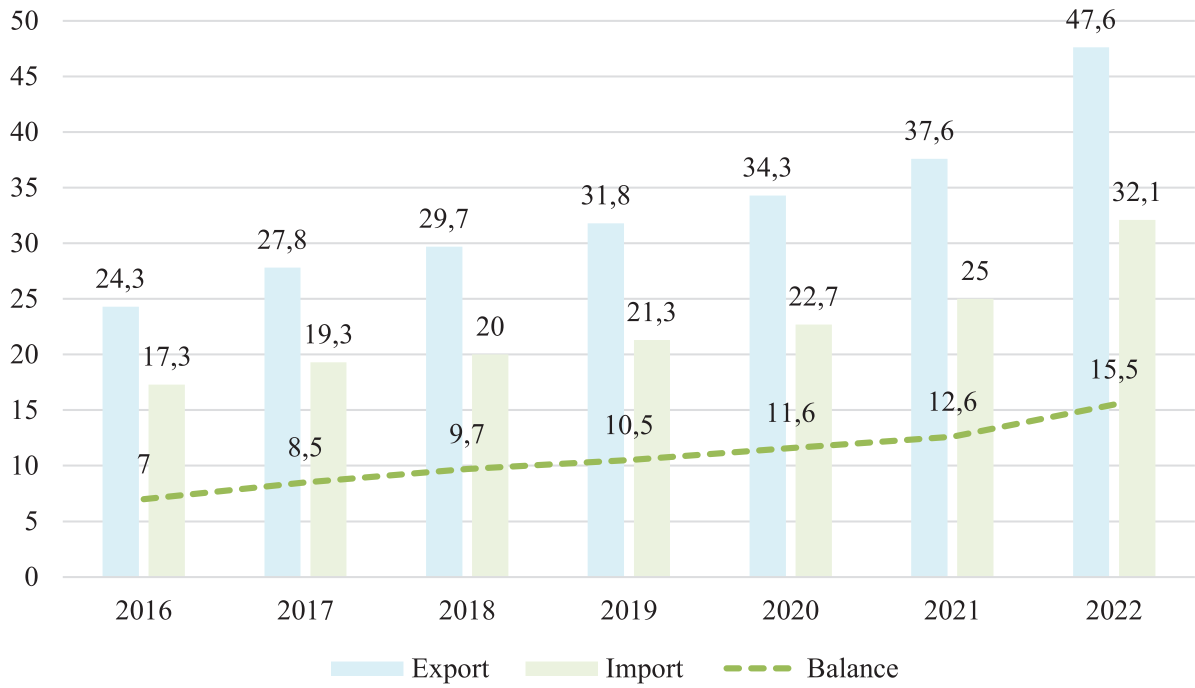
69 Agriculture and the Food Economy in Poland, Ministry of Agriculture and Rural Development, 2019.

machinery in the next 5 years will be necessary, while less than 40% see the need to renovate their agricultural machinery and build farm buildings[70].

In Poland, we currently see modernisation and the specialisation of agricultural production. Modern agriculture, often using industrial production methods, brings much greater economic benefits than traditional agriculture. On the other hand, however, there are various threats. As a result, the European Union's new agricultural policy stipulates the development of so-called sustainable agriculture, aimed at using the land's resources without destroying their natural sources but allowing them to meet the basic needs of future generations of producers and consumers. Ensuring food self-sufficiency is one of the strategic goals of agriculture in the national economy.

In 2022, the value of total exports of agri-food goods from Poland amounted to 47.6 billion euros (PLN 223 billion) – 26.7% higher than in 2021. 74% of the value of Polish agricultural exports is attributable to European Union countries, and Germany remains the main recipient – EUR 11.9 billion. Last year saw a 25% increase in the value of exports to this country.

Chart 38. Polish foreign trade in agri-food products (billion EUR)



Source: Compiled by the Office of Analysis and Strategy of the NEB based on data from the Ministry of Finance, 2022.

70 Polish Countryside and Agriculture 2022, Ministry of Agriculture and Rural Development.

The Netherlands are next in line to receive our products with €3.1 billion – an increase of 37%. France saw a similar increase in export value, up 35%, to €2.9 billion.

Agri-food products worth €12.3 billion (PLN 58 billion) were exported to non-EU countries – a 20% increase in export value. The main exports from Poland to non-EU countries included dairy products – €1.0 billion, poultry meat – €990 million, wheat – €776 million, chocolate and chocolate products – €733 million, bread and baked goods – €731 million. As in previous years, important customers of agri-food goods in third countries primarily included the following: United Kingdom – EUR 3.7 billion, up 25%, Ukraine – EUR 945 million, up 16%, United States – EUR 770 million, up 26%[71].

Table 8. Commodity structure of Polish agri-food exports in 2022

Product	Sales price (% of food exports)	% change (y/y)
Meat, meat preparations and livestock	9,6 mld EURO (20%)	+37%
Cereal grains and preparations	6,6 mld EURO (14%)	+40%
Tobacco and tobacco products	4,3 mld EURO (9%)	+4%
Dairy products	3,6 mld EURO (7%)	+37%
Sugar and confectionery products	3,2 mld EURO (7%)	+14%
Fish and preparations	2,8 mld EURO (6%)	+14%
Vegetables (including mushrooms) and preparations	2,3 mld EURO (5%)	+21%
Fruits (including nuts) and preparations	1,8 mld EURO (4%)	+6%
Other	13,4 mld EURO (28%)	

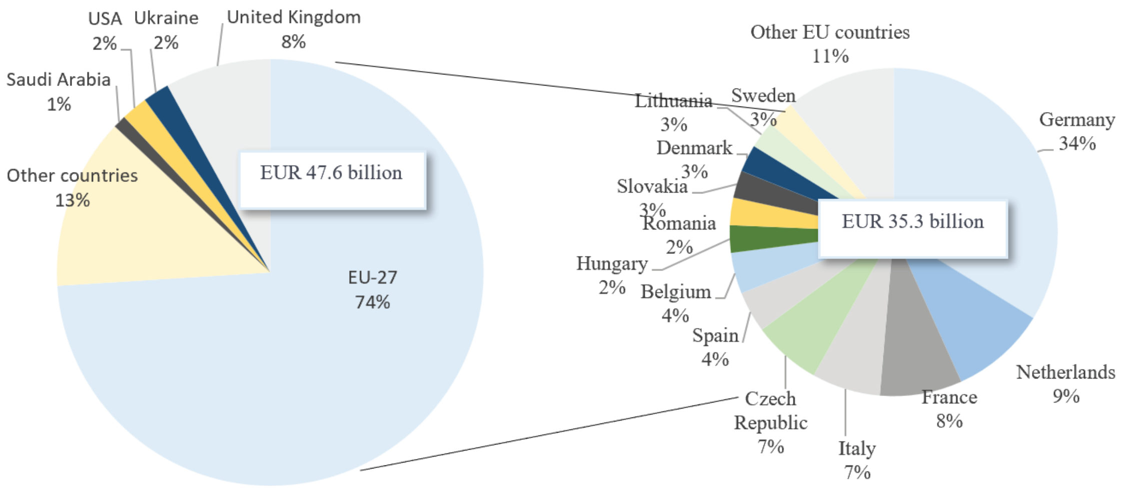
Source: Compiled by the Office of Analysis and Strategy of the NEB based on data from the Ministry of Finance, 2022.

The commodity structure of Poland's agri-food exports in 2022 shows a significant growth in every category. It is likely due to the ongoing war in Ukraine, which has prevented exports from the country commonly called the „granary of Europe."

Polish exports are by far dominated by sales of meat, meat products and livestock (20%), cereal grains and products (14%), as well as tobacco and tobacco products (9%). Total revenues from agri-food exports in 2022 reached EURO 47.6 billion, accounting for 13.85% of total Polish exports.

71 agri-food export growth in 2022, https://www.gov.pl/web/rolnictwo/wzrost-eksportu-produktow-rolno-spozywczych-w-2022-roku.

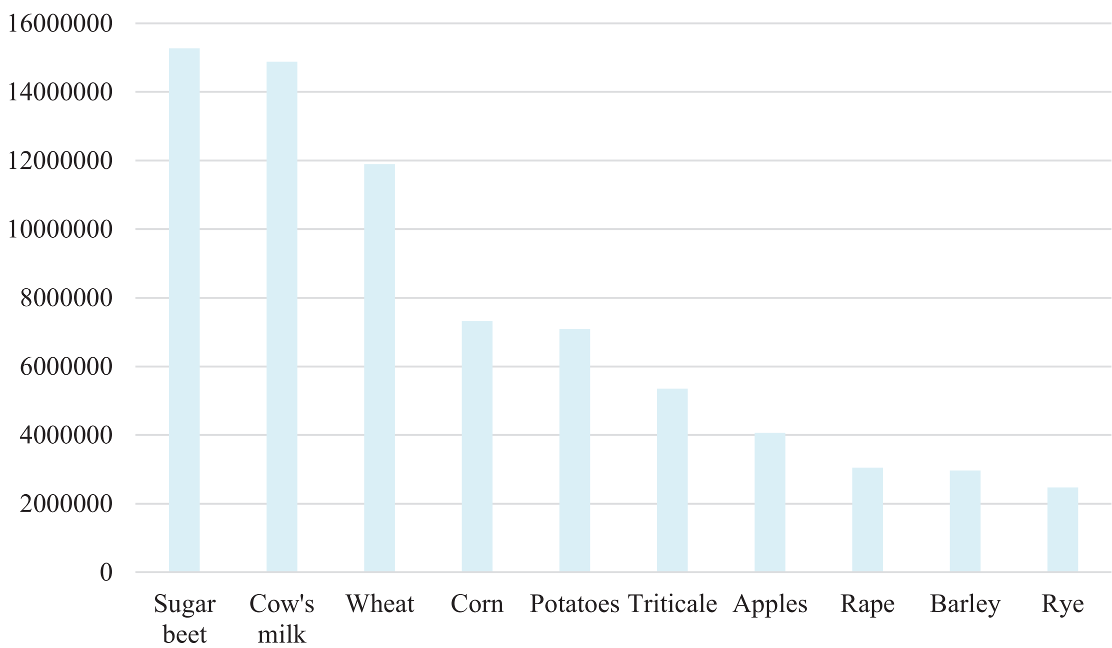
Chart 39. Geographical structure of Polish agri-food exports in 2022



Source: Compiled by the Office of Analysis and Strategy of the NEB based on data from the Ministry of Finance, 2022.

A comparison of the average family farm income per person employed full-time in the family and the average annual net wage in the national economy indicates that the income disparity of those working in agriculture is deepening. This results from a much faster increase in average wages in the national economy compared to the increase in average farm income and the process of reducing farm family labour inputs.

Chart 40. Top 10 agri-food commodities produced in Poland



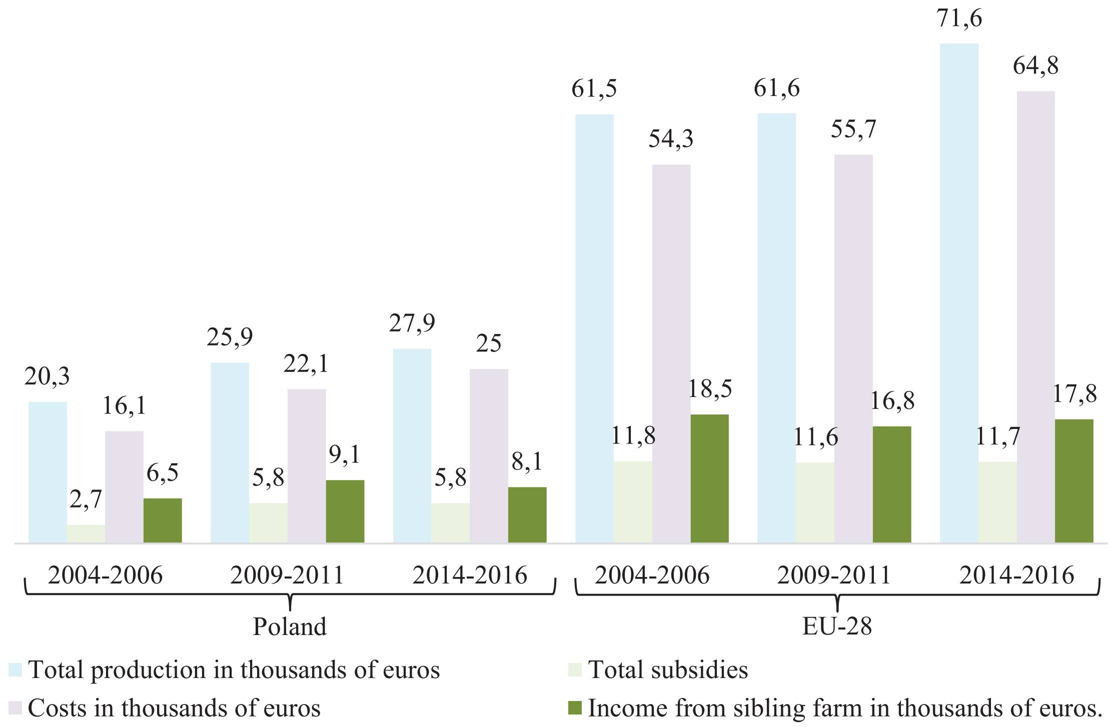
Source: FAO.

The average commodity farm in Poland was characterised by much poorer production performance than the average commodity farm in the EU, especially in the first years after accession. The production value of the average farm in Poland in 2004–2006 was over 3 times lower compared to the average farm in the EU. Between 2014 and 2016, the gap narrowed to 2.6. Similarly, the income gap narrowed from 2.9 to 2.2. In contrast, the spread in the total amount of direct payments decreased much faster. This was mainly related to Poland's gradual progress to the full level of subsidies in the first years after EU accession (according to the timetable set out for the new member states). The performance of commercial farms in Poland varies strongly by production type and economic size[72].

The vast majority of farms in Poland are mixed production farms (45%) and those growing field crops (24%). Farms focused on one type of activity are rare. Most farms are very small (38%), small (42%), or moderately small (13%).

From 2004 to 2018, the economic and financial situation of the food industry was good and stable. The financial result of the sector's enterprises in 2004–2018 was consistently positive and doubled (to PLN 10.4 billion in 2018). At that time, the return on net sales (except for 2008) exceeded 3%, and the return on equity was over 10%. The sector was competitive with other manufacturing divisions, as indicated by the high rate of profit on invested equity.

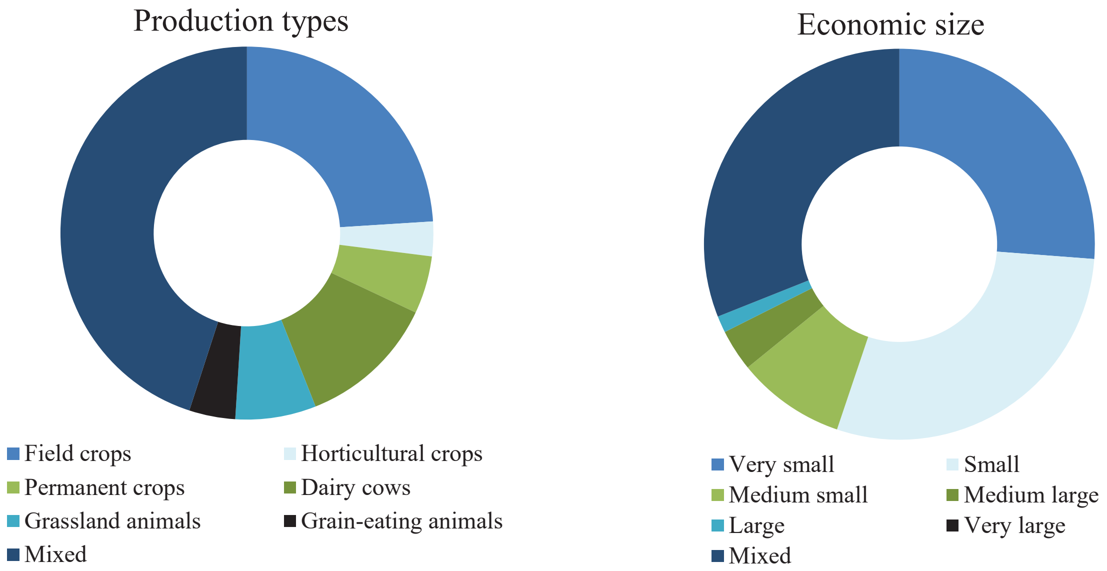
Chart 41. Performance of the average farm in Poland and the EU (in thousands of euros)



Source: FADN data, DG AGRI.

72 Agriculture and the Food Economy in Poland, Ministry of Agriculture and Rural Development, 2019.

Chart 42. Structure of farms in Poland in 2018



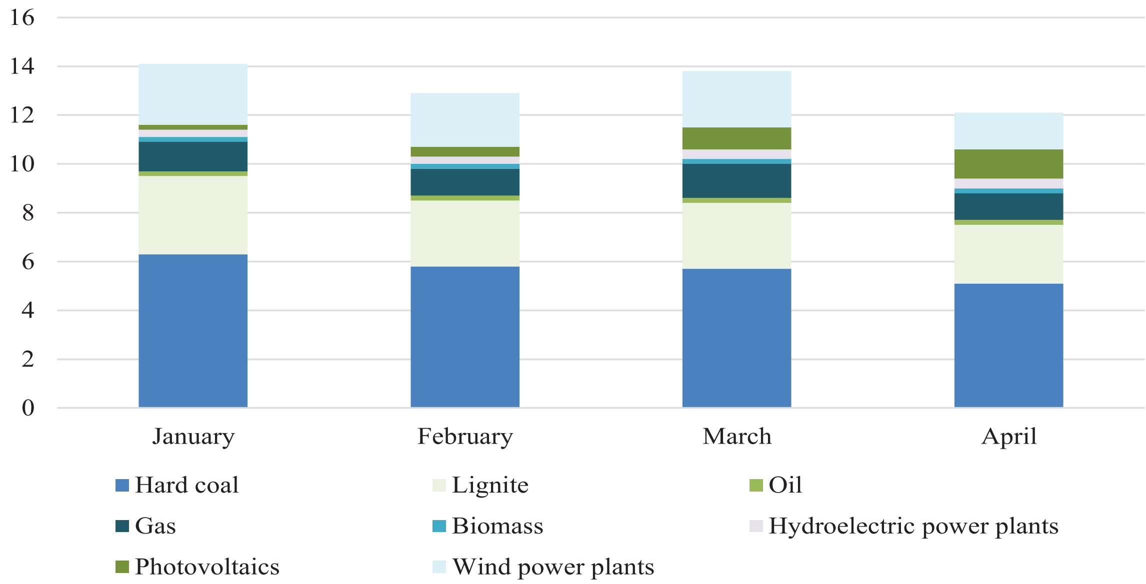
Source: Agriculture and food economy in Poland, Ministry of Agriculture and Rural Development, 2019.

2.4. The economics of the green deal

Thanks to low electricity demand and a high share of Renewable Energy Sources, emissions from the electricity sector in April 2023 are estimated at 7.8 million tons of CO_2. This value is at a historic low.

Electricity production from RES accounted for 26.8% of the generation mix, a share that increased by 4.0 p.p. from the previous year. Fossil fuels accounted for the remaining 73.2% of electricity: hard coal 42.4% (5.1 TWh), lignite 19.8% (2.4 TWh), natural gas 9.0% (1.1 TWh), and other fossil fuels 2.1% (0.3 TWh). Among renewable sources, wind farms produced 12.2% of electricity (1.5 TWh – 45.6% of RES production), photovoltaics were responsible for 10.1% (1.2 TWh – 37.7% of RES), 1.9% came from hydropower (0.2 TWh – 7.0% of RES), and 2.6% from other renewable sources (0.3 TWh – 9.7% of RES). Emissions from the electricity sector were estimated at 7.8 million tons of CO_2, down 20% from the previous year.

Chart 43. Structure of electricity production in Poland in 2023



Source: ENTSO-E Transparency Platform, https://transparency.entsoe.eu/dashboard/show.

Coal prices for the power sector rose 3.4% during the month, to PLN 33.0/GJ (approx. PLN 708/t), i.e. the index value was about 144% higher YOY (2022 vs 2023). Coal for district heating plants costs 41.7 PLN/GJ (about 1,000 PLN/t; 146% more than a year ago), down 6.8% from the previous month. The weighted average price of natural gas delivered in the described month fell 36.2% against March to PLN 365.32/MWh.

The weighted average price of CO_2 emission allowances (EUAs) on the primary market was EUR 89.63/tCO_2, only 14 cents more than a month earlier. In April, Poland's budget received EUR 474 million from the sale of CO_2 emission allowances on the primary market (EEX exchange). Since the beginning of the year, the amount has been EUR 1.89 billion and EUR 20.5 billion since 2013. Knowledge of the structure of electricity generation allows for calculating carbon emissions from the electric power industry. CO_2 emissions are calculated based on reference fuel benchmarks adopted by the Energy Forum (lignite: 1065 kg/MWh, hard coal: 900 kg/MWh, natural gas 450 kg/MWh)[73].

Today, the Middle East's largest oil and gas exporters already provide about 17% of the world's oil exports and 12% of the world's gas exports. EIA predicted that the MENA region would continue increasing its global production share. Russian oil production is also expected to grow more moderately, while U.S. and Canadian production is expected to grow only to a limited extent or begin to decline in the future. Contributing to the growth is the combination of resources available in the region and the proximity of the Middle East to the non-OECD developing economies in Asia. By 2050, Russia's production will approach levels similar to those in the United States. Production in the U.S. will begin to decline after 2030, followed by Canada's numbers after 2040. North American production is levelling off as oil production shifts to less productive areas and the productivity of oil wells declines. The relatively high transportation costs associated with moving oil from North America to Asia also contribute to production levelling off[74].

Rising CO_2 emissions have made it necessary to take action in many countries. The Green Deal program is the European Union's response to the ongoing climate crisis. The program's main goal is to limit global warming to less than 1.5 °C and significantly reduce greenhouse gas emissions. Europe is set to become a climate-neutral continent by 2050. The following steps are necessary to achieve the goal:

- Revision of the Emissions Trading System (EU ETS) to include polluting sectors such as buildings and road transport from 2027 (in ETS II) and maritime transport. The reforms are expected to phase out free aviation allowances by 2026 and will promote the use of sustainable aviation fuels.
- Review of the Market Stability Reserve to address the structural imbalance between supply and demand for EU ETS allowances.
- Implementing an instrument to combat carbon leakage, setting a greenhouse gas fee on imported goods to counter the relocation of operations to countries with less ambitious climate targets.
- A concerted effort to reduce emissions between EU countries, increasing national emission reduction targets – in non-ETS sectors, particularly transport, agriculture, construction and waste management – from 29% to 40% by 2030.

73 Energy Forum Foundation, Monthly: Energy Data, https://www.forum-energii.eu/pl/dane-o-energetyce/miesiecznik.

74 A.H. Cordesman, P. Cormarie, *Creating a New Energy Strategy for a Post Ukraine War World*, CSIS, August 2022.

- Strengthening regulations to increase carbon sequestration in the land use and forestry (LULUCF) sector.
- A project to ensure that new cars and vans in the EU generate zero net emissions in 2035.
- Changes to aviation allowances to include all aircraft departing from the European Economic Area and a potential solution for flights outside the EU (known as CORSIA)[75].

The food sector is one of the main drivers of climate change. Even though EU agriculture is the only major agricultural sector in the world that has reduced greenhouse gas emissions (by 20% since 1990), it still accounts for about 10% of emissions (and animals are responsible for 70%).

However, most CO_2 is emitted by domestic transportation, which is also characterised by seasonal increases in emissions. Residential and municipal energy supply and industry are on a downward trend.

Considering the costs, the European Commission proposed more than 1 trillion euros, of which 25% was allocated for climate goals. A new budget item has been designed to support coal regions – the Just Transition Fund.

The pandemic and the ensuing economic recession prompted the proposal for additional funds – 750 billion euros – in the Next Generation EU (MFF) financial package alongside the MFF. The formulated conclusion confirms that climate action, in line with the Union's commitments to the Paris Agreement and the UN Sustainable Development Goals, has been reflected in the EU budget and additional resources:

- At least 30% of the total amount (which is more than the Commission proposed) is to support climate goals; a methodology for monitoring this spending and its impact will be established so that already the entire next EU budget will contribute to the implementation of the Paris Agreement; in the case of agricultural policy, this share is to be even higher – 40%;
- EU spending should be in line with the goals of the Paris Agreement and the so-called *„No harm principle"* of the European Green Deal;
- Addressing the social and economic consequences of the goal of achieving climate neutrality by 2050 and the Union's new 2030 climate target, a Fair Transition Mechanism, including a Fair Transition Fund, will be established.

At the same time, Poland will be one of the largest beneficiaries of the EU budget, including funds for shifting the economy to zero-carbon (more on this further in the analysis). Investment financing mechanisms are designed to mobilise funds within months. The rigid and short time-frame (2020–2023) for planning and mobilising the additional financial injection distinguishes it from the regular Union budget planned for 2021–2027[76].

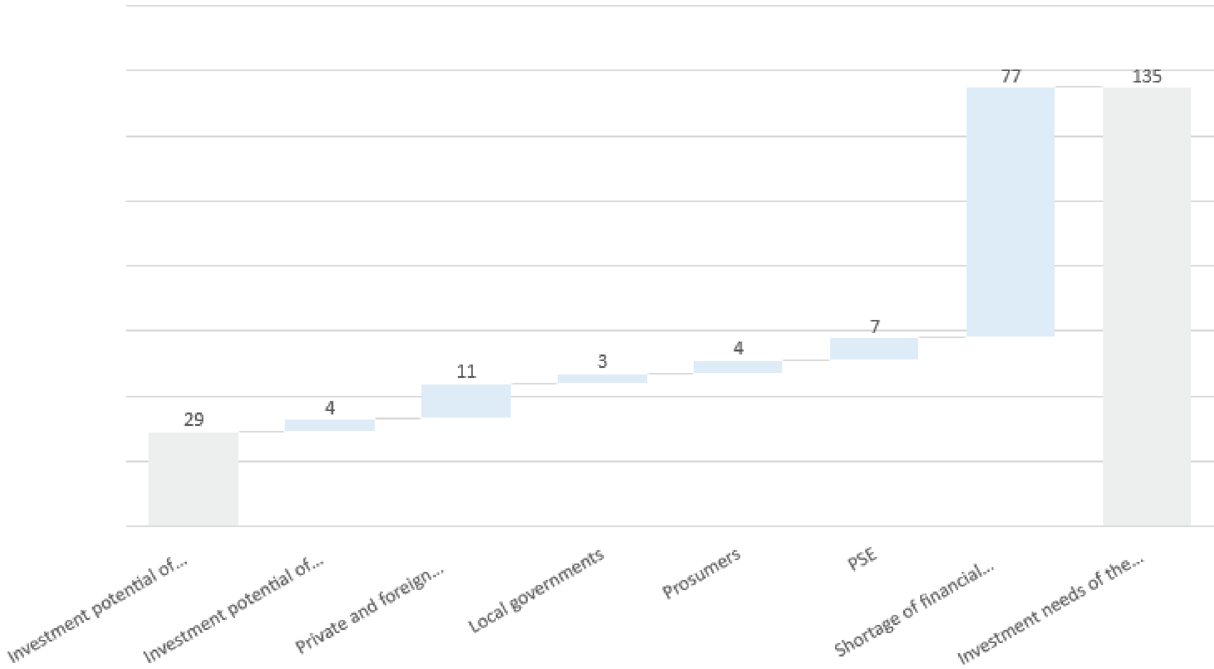
Energy transformation requires significant investment, the scale of which (according to Climate Ministry sources) could reach about PLN 1,600 billion in 2021–2040. Investments in the fuel and energy sectors will involve funds of about PLN 867–890 billion. The projected outlays in the

75 european Parliament, *Green Deal: Key to a Climate Neutral and Sustainable EU*, https://www.europarl.europa.eu/news/pl/headlines/society/20200618STO81513/zielony-lad-klucz-do-neutralnej-klimatycznie-i-zrownowazonej-u-e?&at_campaign=20234-Green&at_medium=Google_Ads&at_platform=Search&at_creation=RSA&at_goal=TR_G&at_audience=zielony%20%C5%82ad&at_topic=Green_Deal&at_location=PO&gclid=CjwKCAjw9pGjBhB-EiwA-a5jl3E4ByOJa4cxCy99Ni24CUOXj26jW3lrWOZv5SAcX2Z1ITkgrYyifXxoC4QAQAvD_BwE.

76 Poland in the Green Deal – Benefits, Opportunities and SWOT Assessment, Senate Office, Office of Analysis, Documentation and Correspondence.

electricity generation sector will reach approximately PLN 320–342 billion, of which about 80% will be allocated to emission-free capacity, i.e. RES and nuclear power[77].

Chart 44. Investment gap estimate for energy transition in 2021–2030 (in EUR billion)



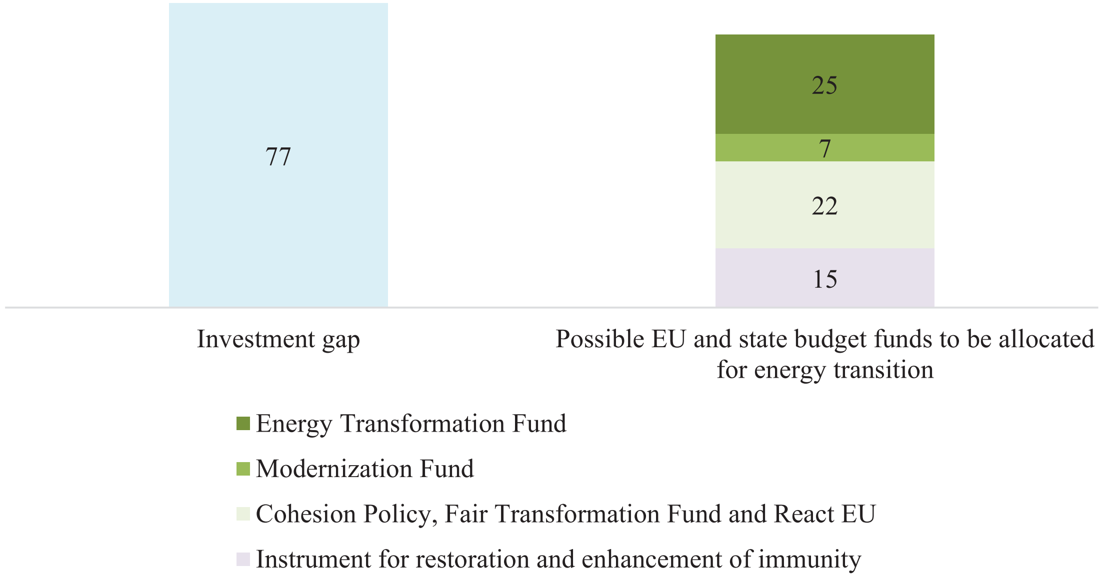
Source: PKEE: PLN 600 billion in 7 years – Poland's energy transition requires gigantic outlays, PAP Local Government Service.

The accumulation of capital expenditures will occur between 2023 and 2030 and, as a result, may significantly affect the financial condition of Polish energy companies. Planning for further development of the energy sector requires further support with funds to continue the energy transition in the long term. In the long term, the scale of investments and challenges of the Polish energy sector striving to achieve zero carbon in 2050 could be as much as EUR 200 billion, or over PLN 900 billion[78].

77 *The „Green Deal" and the energy transition – what scenario for Poland*, Regional Chamber of Commerce in Katowice.

78 The Polish Electricity Association: PLN 600 billion in 7 years – Poland's energy transition requires gigantic outlays, PAP Local Government Service, https://samorzad.pap.pl/kategoria/materialy-partnerskie/pkee-600-miliardow-zlotych-w-7-lat-transformacja-energetyczna-w-latach-2021-40-moze-kosztowac-ok-1,6-bln-zl-pep2040.

Chart 45. Possibility of covering the investment gap using EU and state budget funds (in EUR billion)



Source: PKEE: PLN 600 billion in 7 years – Poland's energy transition requires gigantic outlays, PAP Local Government Service.

2.5. What economic system?

Conducting modern monetary policy is based on understanding inflation expectations. Households cannot accurately forecast inflation, so they cannot be sure how far the money will go in the future when it comes to buying goods. It has been shown that to be forewarned is to be forearmed and that a known change in the price level in advance can be factored into the interest rate to neutralise its ill effects.

Expected inflation is modelled as a weighted average of current and past inflation, reasoning that „price changes do not exhaust their effects in one year, but manifest their impact with decreasing intensity." Inflation must be higher than expected to reduce unemployment below the natural rate. Interest rates contain information useful in predicting inflation.

As measured by the consumer price index, inflation fell in the first few months of the pandemic and then rebounded slightly in the later months of 2020. By mid-2021, as the COVID-19 pandemic continued, aggregate demand returned to normal, but supply remained constrained, and both inflation expectations and inflation itself began to rise. First, the pandemic may have changed consumption patterns, leading consumers to experience price pressure that differed from the basket of goods underlying the consumer price index.

For the first year of the COVID-19 pandemic, CPI inflation was higher than the official Consumer Price Index inflation. Thus, consumers experienced inflation at a higher rate than the official CPI, and it has been shown that consumers rely heavily on experienced price changes to form their expectations.

Consumer inflation expectations may be less responsive to the release of official macroeconomic news than the expectations of professional forecasters and market participants. Inflation expectations, especially over longer horizons, tended to rise gradually along with inflation itself. Consumer discontent with inflation has also increased and remains elevated. Given the recent rise in expectations and realised inflation, policy authorities must consider the risk of jolting inflation expectations if inflation remains high for an extended period[79].

Maintaining low interest rates for longer than is warranted by future economic conditions will cause inflation in the future, so inflation expectations should be raised at a desirable time,

79 C. Binder, R. Kamdar, „ *Expected and Realized Inflation in Historical Perspective*, „ The Journal of Economic Perspectives, Summer 2022, Vol. 36, No. 3, pp. 131–156.

despite the difficulty of demonstrating what is meant by desirable time from the perspective of households, businesses and, ultimately, public debt in the public finance system and economic policy.

For central banks, inflation expectations have become key in shaping monetary policy. Central banks that want to manage inflation expectations as a policy tool must be cautious, as raising inflation expectations can actually have the opposite effect.

Current monetary policy messages often fail to reach ordinary households and businesses and require more innovative communication tools[80].

Beliefs about the monetary system affect aggregate demand by influencing the expected nominal interest rate in the period following. In particular, when current inflation is below the central bank's target, monetary policy is assumed to be active (passive)[81].

Monetary policy can ensure lower inflation now, but at the expense of higher inflation in the future – a form of „unpleasant arithmetic." Postponing inflation may still be useful. Lower but longer-lasting inflation is desirable in many economic models because it reduces the destructive effects of high inflation[82].

Most European countries have responded to the recession triggered by the COVID-19 pandemic by introducing various programs of fixed-term leave, reduced working hours and wage compensation to maintain ties between workers and their employers. The potential disparity between richer countries, such as Germany and France, which can bail out their domestic industries, and more financially strapped EU member states, such as Italy and Spain, which may not have similar resources to subsidise their own companies, threatened to undermine efforts at European solidarity[83].

The fiscal policy appears to be an appropriate tool to offset the severe demand and supply shock that was the COVID crisis. First, it can ensure adequate public health spending to combat the effects of a pandemic. In addition, it can offset the negative demand shock and the decline in private investment and consumption by increasing public consumption and spending targeted at households and businesses particularly affected by the health crisis.

The COVID crisis required an unprecedentedly large fiscal response in all countries to support health systems and vulnerable households, companies and business sectors: additional spending or temporary tax cuts to compensate for lost revenues, loans, guarantees and capital injections from the public sector.

The exit of healthy companies affected by the temporary blockade would be detrimental to the subsequent recovery, as it would lead to an inefficient loss of capital necessary for the production function, especially firm-specific intangible and human capital.

In all countries, public deficits and debts have risen to unprecedented levels. The International Monetary Fund estimates that an increase in public investment of 1% of GDP in developed

80 M. Weber, F. D'Acunto, Y. Gorodnichenko, O. Coibion, *The Subjective Inflation Expectations of Households and Firms: Measurement, Determinants, and Implications* "The Journal of Economic Perspectives", Summer 2022, Vol. 36, No. 3, pp. 157–184.

81 P. Garcia, *Annals of Economics and Statistics*, March 2022, no. 145, pp. 5–28.

82 J.H. Cochrane, *Fiscal Histories*, „The Journal of Economic Perspectives „2022, Vol. 36, No. 4, pp. 125–146.

83 John R. Deni, Chris Alden, Erik Brattberg, Roger Cliff, Mark Duckenfield, R. Evan Ellis, Nicholas Nelson, Lauren Speranza, China, Europe, and Pandemic Recession: Beijing's Investments and Transatlantic Security, US Army War College Press, 2022.

economies and emerging markets could increase GDP by 2.7% and private investment by 10%, mainly to create 20 to 33 million jobs. Indeed, fiscal measures can have two purposes:

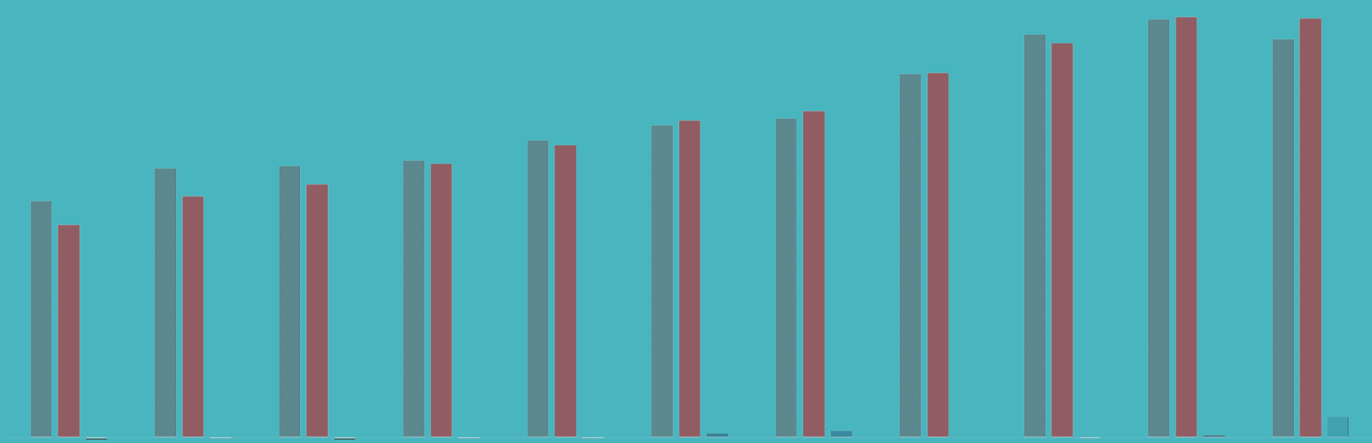
1. limiting the short-term decline in aggregate demand and economic activity;
2. on the supply side, sustaining production capacity and avoiding the loss of o employment capacity due to a long period of unemployment or bankruptcy of companies with cash flow issues or order problems[84].

First, the stylised facts show that in the event of a large demand-supply shock, economic stabilisation is always more difficult in countries without fiscal room for manoeuvre, where budget deficits and public debt are already very high. In contrast, in countries where the fiscal situation is initially healthy, where the budget deficit is small and public debt is moderate, limiting the extent of the economic crisis is much easier. In 2020, countries with an increase in the relative share of indirect taxes in government revenues appeared to be less affected by the COVID crisis than countries with an increase in the relative share of direct taxes[85].

84 S. Menguy, „ *Fiscal Stimulus in the European Union to Stabilize the COVID Shock*," Journal of Economic Integration, December 2022, Vol. 37, No. 4, pp. 559–588.

85 Ibidem.

3. Poland's macroeconomic stability



3.1. The importance of macroeconomic stability for building sustainable economic growth

Macroeconomic stability is one of the most widely discussed issues in contemporary economic literature, both Polish[86]and foreign[87]. It is an ambiguous concept and difficult to define precisely, yet it is a fundamental challenge in building sustainable growth for individual economies and the European Union. This challenge is recognised by the bodies that carry out various state policies, such as governments and central banks[88].

Most generally, macroeconomic stability is equated with a favourable combination of internal conditions, including the economic situation, in conjunction with a country's political, social

86 It is necessary to point out, first of all: H. Ćwikliński, *Wyzwania dla polityki makroekonomicznej na początku XXI wieku*, UG Publishing House, Gdańsk 2012; *Poland's Path to 2025. Assumptions of long-term strategy in the light of KP PAN studies*, Polish Academy of Sciences. ProjectionsCommittee"Poland 2000 plus", Warsaw 2005; J. Kaja, *Polityka gospodarcza. Wstęp do teorii*, SGH Publishing House, Warsaw 2014; G.W. Kołodko, *Kwadratura pięciokąta. Od załamania gospodarczego do trwałego wzrostu*, Poltext, Warsaw 1993; P. Kozlowski, M. Wojtysiak-Kotlarski, *Grzegorz W. Kolodko i ćwierćwiecze transformacji*, Wydawnictwo Naukowe Scholar, Warsaw 2014; *Koniunktura gospodarcza świata i Polski w latach 2015–2018*, Reports, IBR, KiK, Warsaw 2017; J. Misala, *Stabilizacja makroekonomiczna w Polsce w okresie transformacji ze szczególnym uwzględnienie deficytów bliźnia*, Politechnika Radomska, Radom 2007; *Annual Report 2021*, NBP, Warsaw 2022; *Strategy for responsible development until 2020 (with an outlook to 2030)* Council of Ministers, National Bank of Poland. Warsaw 2017 *Sytuacja makroekonomiczna w Polsce na tle procesów w gospodarce światowej w 2020 r.*, NBP, Warsaw 2021; *Wizja przyszłości Polski. Studia i analizy*, Vol. 1: *Społeczeństwo, państwo*, PAN, Warsaw 2011; M. Szałański, T. Zalega, W. Zborowska, *Makroekonomiczna polityka stabilizacyjna. Ujęcie krótkookresowe. Symulacje komputerowe*, Wydawnictwo Naukowe Wydziału Zarządzania UW, Warsaw 2019.

87 Noteworthy works include: B. Ames, W. Brown, S. Devarajans, A. Izquuierdo, *Macroeconomic Policy and Poverty Reduction.* International Monetary Fund and the World Bank, 2001; Giok In Liem, *Interdependent Economy: From Political Economy to Spiritual Economy*, Legaia Books LLC, 2020; I.B.J. Pine, J.H. Gilmore, *The Experience Economy*, „Harvard Business Review Press", 2011; J.E.T. Rogers, *Social Economy*, Hansebooks, 2017; P. Krugman, R. Wells, *Makroekonomia*, PWN, Warsaw 2020; P.A. Samuelson, W.D. Nordhaus, *Ekonomia*, WN PWN, Warsaw 2020; J.E. Stiglitz, *Ekonomia sektora publicznego*, WN PWN, Warsaw 2015; L.Walras, *Elements of Theoretical Economics*, Kindle Edition, Cambridge 2014.

88 The issue of macroeconomic stability plays a key role in the discussion of the way forward for building further economic and monetary integration within the Economic and Monetary Union – *Completing the European Economic and Monetary Union*, Report prepared by Jean-Claude Juncker in cooperation with Donald Tusk, Jeroen Dijsselbloem, Mario Draghi and Martin Schulz, European Commission, 2015, and is also included in ECB reports: G. Koester, D. Sondermann, *A euro area macroeconomic stabilization function: assessing options in view of their redistribution and stabilization properties*, No. 216, European Central Bank 2018.

or demographic situation. The country's situation in the international arena is also important, especially in the sphere of trade with foreign countries. The benefits of macroeconomic stability are undeniable[89]. Macroeconomic stability removes uncertainty in economic activity, increases the investment attractiveness of a country, improves the likelihood of an increase in economic activity in the future, and provides the basis for building the conditions for sustainable and balanced economic growth [90]. Given the role and essence of stability for growth, it is possible to consider this favourable condition as a kind of public good and, thus, its absence as a potentially high social cost[91]. There are two main sources of economic instability:

- exogenous shocks,
- wrong policy.

Exogenous shocks (e.g., terms-of-trade shocks, natural disasters, reversal of capital flows, etc.) can put the economy into a state of disequilibrium and require compensatory measures. For example, many low-income countries have a narrow export base, often focused on one or two key commodities. Shocks to global prices for these commodities can, therefore, strongly impact the country's income. However, even diversified economies are routinely exposed to exogenous shocks, although, reflecting their greater diversification, shocks usually have to be particularly large or prolonged to destabilise such an economy. Alternatively, imbalances can be self-induced through macroeconomic mismanagement. For example, excessively loose fiscal policy can increase aggregate demand for goods and services, which puts pressure on the country's external balance of payments and the domestic price level. Sometimes economic crises are the result of both external shocks and mismanagement[92]. Regardless of the source of instability, policy coherence for building conditions for stable, countercyclical economic growth is important. Economic stabilisation policy, therefore, means restoring the economy to a state of internal and external equilibrium.

89 H. Ćwikliński, *Challenges for macroeconomic policy at the beginning of the 21st century*, UG Publishing House, Gdańsk 2012.

90 J. Janecki, *Measurement and evaluation of macroeconomic stability in Poland*, „Folia Oeconomica, Acta Universitas Lodzensis" 2(328) 2017, p. 124.

91 Por. A. Alińska, K. Wasiak, *Czy stabilność systemu finansowego można uznać za dobro publiczne?*, „Studia Ekonomiczne. Uniwersytet Ekonomiczny w Katowicach" no 198, part 1, Katowice 2014, p. 14 et seq.

92 B. Ames, W. Brown, S. Deverajan, A. Izquierdo, *Macroeconomic Policy and Poverty Reduction…*, s. 8.

3.2. Factors for measuring the state of macroeconomic stability

Considering the available methods of measuring the degree of financial stability, we can mention two basic ones. These are, first, the country-specific recommendations proposed in The Alert Mechanism Report (AMR) to the European Commission. The second method is based on the macroeconomic stabilisation pentagon model (SPM).

The methods above present different approaches to diagnosing and describing the state of macroeconomic stability. It should be noted that an additional challenge for building conditions for macroeconomic stability in the future is predictive ability in the context of macroeconomic developments. Of course, all kinds of predictions and anticipations of future events are subject to a greater or lesser risk of failure, although there are no other tools for mitigating potential risks in the future. An additional challenge is a situation where, as a result of the COVID-19 pandemic and later the war in Ukraine, there have been rapid and fundamental changes in the economy, altering the foundations of functioning, overdriving the previously existing mechanisms, changing the balances and dependencies that have functioned so far. Under such conditions, diagnosis of these changes is necessary to conduct analyses related to creating scenarios for future development.

The following six categories of macroeconomic stability were proposed to measure macroeconomic stability in the model under construction:

- GDP growth rate,
- unemployment rate,
- inflation rate,
- the ratio of the budget deficit to gross domestic product,
- the ratio of the current account balance of the balance of payments to gross domestic product,
- energy security/the general level of energy prices.

While the first five mentioned factors are commonly used in stability analyses, the authors believe that under the current macroeconomic situation, one of the key factors determining the operation of business entities has become the price of energy. Thus, this factor was considered important for building a model of macroeconomic stability.

3.3. A model of post-crisis macroeconomic stability

The following technologies were used to build a predictive model based on the proposed six macroeconomic stability factors:

- *Data Mining* – analysing large data sets and extracting knowledge by selecting data relevant to the phenomena and processes being analysed. The selected data is the basis for creating predictive models.
- *Machine learning (neural networks*) – build and optimise structural parameters of predictive models.

The following steps were used to create a predictive macroeconomic stability model for the economy in Poland:

- A cluster analysis was conducted to classify the state of stability according to four statistical classes (low stability, medium stability, high stability, and very high stability) for 2003–2021;
- A model was created using the logistic regression method, which estimates the probability of each class given the six factors of macroeconomic stability (inputs, Chart 1);
- Factors were selected to predict the various categories of macroeconomic stability (20 factors, Table 1);
- creating a predictive model in the form of a neural network – blackbox,
- whose structural parameters are optimised using a machine learning method;
- application of forecasts of individual factors to the optimised macroeconomic stability model – obtaining predictions of macroeconomic stability in the period up to March 2024 (Chart 2).

Large datasets were analysed to examine the strength and nature of relationships between variables and to select variables related to the macroeconomic stability factors analysed to select predictive indicators for stability factors. Since the models are predictive in nature, the selection process focuses on selecting data that is predictive of the macro indicator for which the predictive model will be built and optimised. The goal of this stage was to find information that could provide a basis for drawing conclusions about the future behaviour of macroeconomic indicators used to assess macroeconomic stability.

The selection included over 100 million time series collected on the ExMetrix platform. Its result is a set of twenty (Table 1) time series showing an advance relative to the macro indicator for which the predictive model will be built. This set is used in the next stage to build and optimise a model forecasting macroeconomic indicators.

Table 9. List of time series indices that allow prediction of macroeconomic stability factors

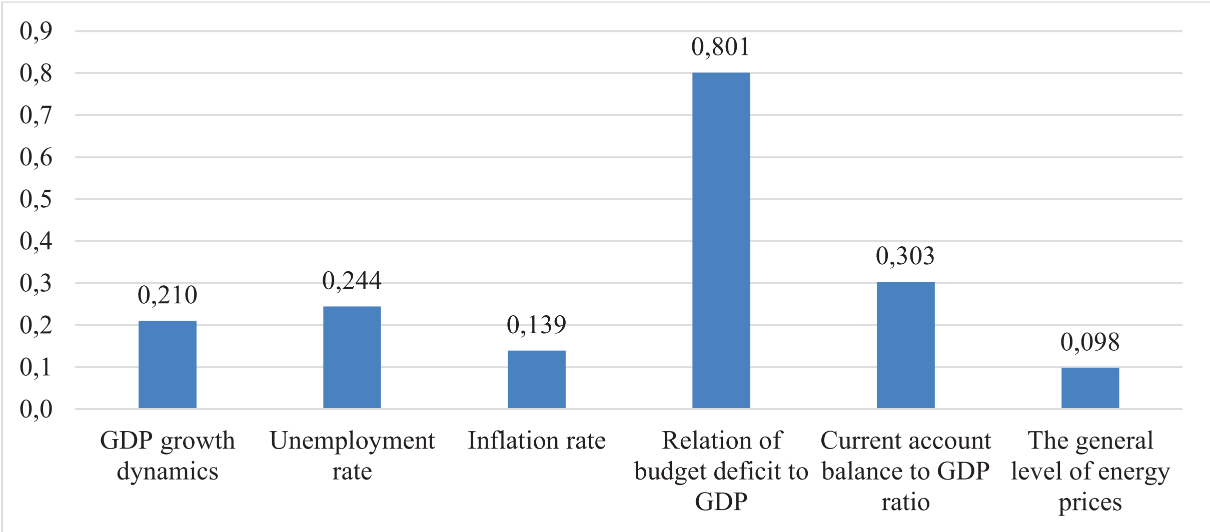
No.	Name of the time series
1	Result (balance) of the state budget (from the beginning of the year to the end of the period), PLN million
2	Total foreign trade goods balance, in PLN million
3	Gross domestic product (constant prices), same period last year=100
4	Gross domestic product (current prices), in PLN million
5	Long-Term Government Bond Yields: 10-year: Main (Including Benchmark) for Poland
6	Total registered unemployment rate (as at year-end), %
7	Staging Cube, Poland, Harmonised unemployment rate (HUR), Total, % of the labour force, Monthly
8	Consumer price indices, same period last year=100
9	Staging Cube, Poland, Inflation (CPI), Total, Annual growth rate (%), Monthly
10	Government deficit/surplus, in PLN million
11	Government deficit/surplus, % of GDP
12	budget deficit since 1991 % of GDP
13	budget deficit since 1991
14	Result (balance) of the state budget (year-to-date)/Gross domestic product (current prices) [%]
15	Total foreign trade goods balance/Gross Domestic Product (current prices) [%]
16	TGEgasDA usw rate [PLN/MWh]
17	POLAND HARD COAL PSCMI 1/T usw [PLN/T]
18	MIX POLAND OZE All usw [%]
19	TGeBase, usw rate [PLN/MWh]
20	Variable costs of power generation in Poland with current usw mix [PLN/MWh]

Source: Own compilation based on the ExMetrix database.

Referring to the measurement of macroeconomic stability, it is important to note to what extent the proposed methodology takes into account historical data, current data and macroeconomic forecasts. In other words, to what extent it is possible to spot changes that threaten macroeconomic stability or possibly emerging signs of improvement. Identifying how macroeconomic stability has changed over time and what it might look like in the futurecan be valuable. In this context, two models were created – one trained on data from 03.2003–01.2021 and another trained on data from 02.2005–02.2023. The purpose of such an exercise was to see if data from the past two years would significantly impact the role of individual criteria in achieving macroeconomic stability.

The following result of weights was obtained for the six categories of macroeconomic stability in the model taught on data from 03.2003–01.2021.

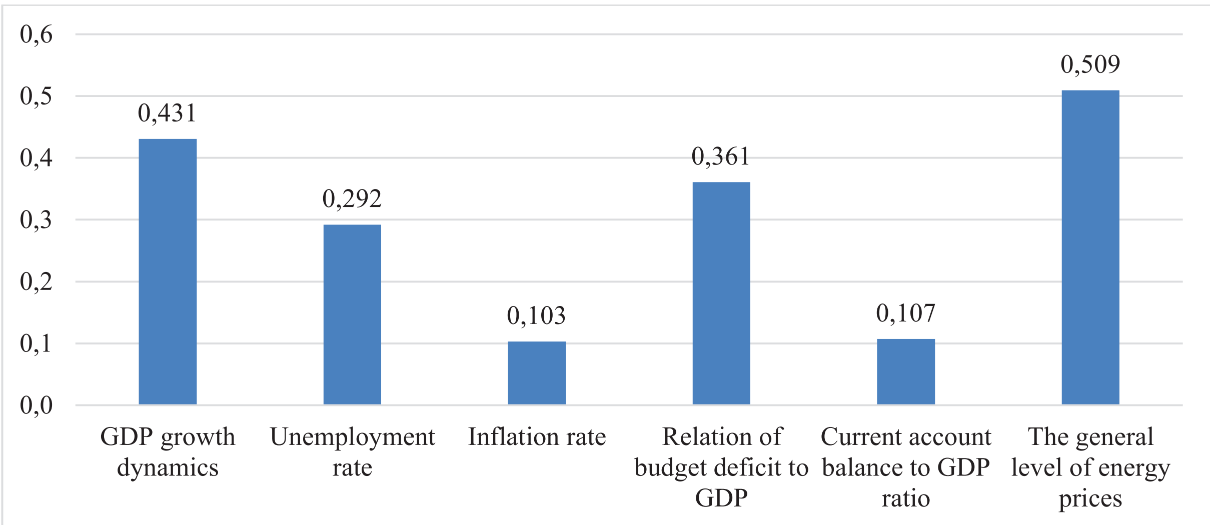
Chart 46. The quantitative role of individual criteria in achieving macroeconomic stability trained on data until 2021



Source: Own compilation based on the ExMetrix database.

Next, a predictive model for macroeconomic stability built using the logistic regression method was made. Predictions of macroeconomic indicators used to assess macroeconomic stability for the period up to 03.2024 were used to obtain forecasts. The model was trained on data from 02.2005–02.2023.

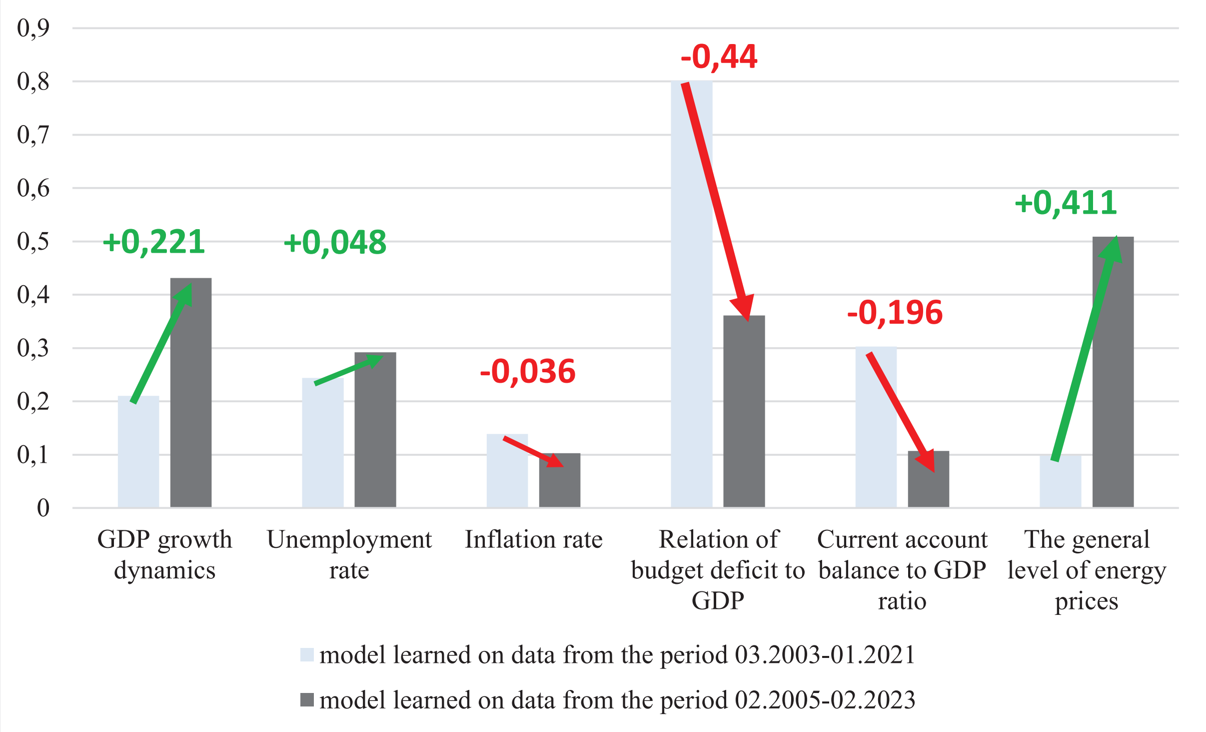
Chart 47. The quantitative role of each criterion in achieving macroeconomic stability trained with consideration of data after 2021



Source: Own compilation based on ExMetrix data.

Comparing the values obtained after considering the data from the pandemic crisis and the war in Ukraine, the weights for each category of macroeconomic stability have changed significantly. First of all, according to estimates, the most significant category for macroeconomic stability until 2021 was the budget deficit-to-GDP ratio (0.801). Other categories include the current account balance to GDP ratio (0.303), unemployment rate (0.244), GDP growth rate (0.21), inflation rate (0.139) and general energy price level (0.098). The occurrence of the pandemic has triggered many fundamental changes of a systemic nature affecting the functioning of the economy, which is also reflected in the characteristics of the data-learning model after 2021. The updated version of the model shows the following relevance: overall energy price level (0.509), GDP growth rate (0.431), budget deficit-to-GDP ratio (0.361), unemployment rate (0.292), current account balance-to-GDP ratio (0.107) and inflation rate (0.139).

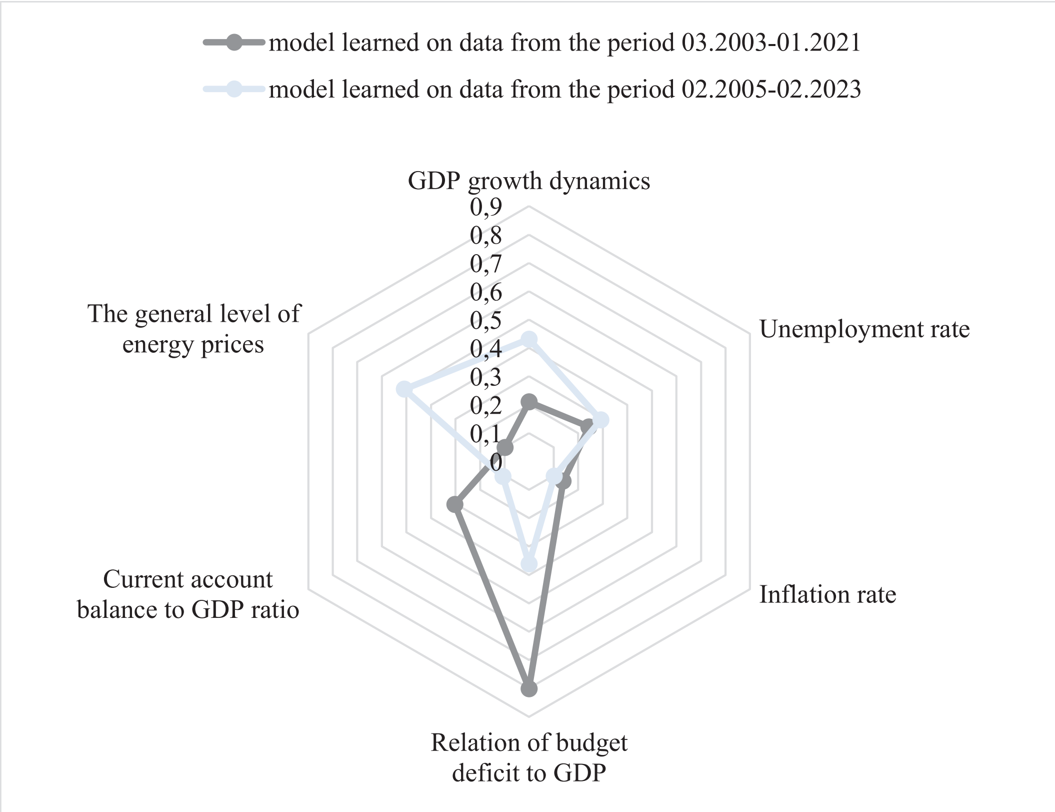
Chart 48. Summary of the dynamics of changes in the significance levels of macroeconomic stability factors in learning models on different periods of data



Source: Own analysis.

The most significant change after learning the model based on data from the pandemic period and beyond is a significant increase in weighting for energy price levels. This is the category most relevant to macroeconomic stability in the new model. Thus, the low level of significance for the inflation rate in this model may indicate that the model classified some of the data that dealt with the inflation rate under the general level of energy prices, which is reasonable, as changes in the price of energy have inflationary or deflationary effects. If one were to juxtapose the two categories in models 1 and 2, the sum of significance for inflation and the general level of energy prices is 0.237 in the former and 0.612 in the latter. The changes are probably due to the role of energy prices on rising price levels beyond 2021. Another important change is the decrease in the materiality of the budget deficit ratio in favour of an increase in the materiality of GDP growth. This change may be due to trade relationship changes and a trend toward an economic slowdown.

Chart 49. Map of significance levels of macroeconomic stability factors in learning models on different data periods



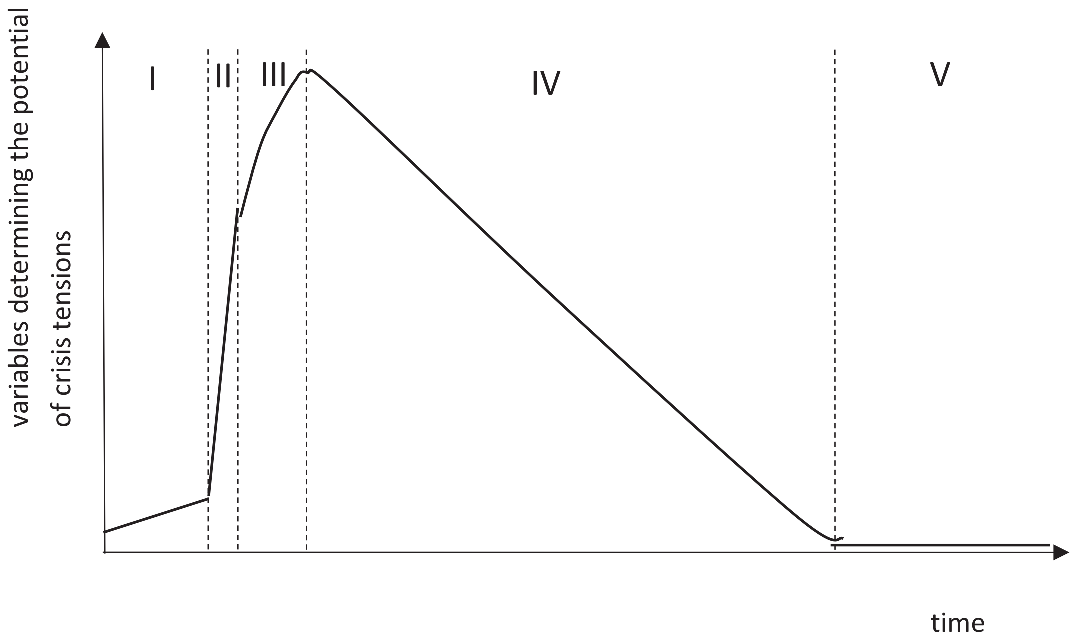
Source: Own analysis.

Treating the significance weights of macroeconomic stability factors as a kind of coefficients defining the paradigm of the functioning of the Polish economy before the cut-off period, i.e., before 2021, and taking into account the data after 2021, it should be noted that all kinds of interpretations of present and future events should be updated to the modernised parameters. The indicated changes fit the life cycle model of the crisis[93], where the accumulation of crisis-inducing phenomena materialised through the outbreak of the COVID-19 pandemic. In addition, the turmoil was exacerbated by Russia's aggression against Ukraine. The result is fundamental changes in the functioning of economies, as well as regulatory changes bringing the world into

93 P. Komorowski, *Przebieg kryzysu gospodarczego w wymiarze cyklu życia*, [w:] *Wiedza i bogactwo narodów, Kapitał ludzki, globalizacja i regulacja w skali światowej*, red. R. Bartkowiak, P. Wachowiak, OW SGH, Warsaw, 2013.

a new post-crisis era, where the realities of doing business are new and different, requiring adjustments to both the strategy of operations, the economic policies pursued, and the analyses made based on updated parameters.

Chart 50. Stages of the crisis life cycle



I – stage of accumulation of crisis phenomena
II – impulse materializing risks
III – contagion of crisis
IV – transmission of crisis
V – new post-crisis reality

Source: Own analysis.

3.4. Results of macroeconomic stability estimation based on the predictive model

The values obtained from the partial prediction models for the received twenty factors having the greatest impact on the economic stability categories were substituted into the obtained model to obtain results estimating future values in the updated macroeconomic stability model. As calculated, Table 2 shows the resulting prediction for macroeconomic stability until the end of 2024.

Table 10. Prediction of macroeconomic stability in the period 03.2023–03.2024 (1- very low, 2 – low, 3 – medium, high)

month	(1–4)	Degree of stability
Mar.23	4	high stability
Apr.23	4	high stability
May.23	4	high stability
Jun.23	4	high stability
Jul.23	4	high stability
Aug.23	4	high stability
Sep.23	2	low stability
Oct.23	2	low stability
Nov.23	2	low stability
Dec.23	4	high stability
Jan.24	4	high stability
Feb.24	4	high stability
Mar.24	4	high stability

Source: Own compilation based on data from ExMetrix.

The resulting prediction indicates high stability in the months of March-August 2023. The next 3 months saw a drop in stability to category 2, or low stability. This result may be primarily due to the prediction of a deterioration in the foreign trade balance in relation to GDP and may also be related to the preparation period for winter. For the period from December to March 2024, the model predicts a fourth category, namely high macroeconomic stability.

Modern technologies, such as *data mining* and *machine learning*, provide previously unavailable opportunities for mining available data to create predictive models and increase the predictions' effectiveness. The presented model was built with a prediction perspective of 12 months. Of course, this perspective can be extended, but at the cost of increasing the risk of failure.

It should be noted that in the context of the proposed 6 factors shaping macroeconomic stability, models learning on data from other periods presented significantly different weights for each factor. This change demonstrates the fundamental changes in the economy's functioning during the COVID-19 pandemic and the war in Ukraine. In particular, it is important to point out here the increased importance of energy prices over other stability factors.

In the context of predictions for the period up to March 2024, the model indicates mostly high macroeconomic stability, except for the months of March-August, when the deterioration of the foreign trade balance in relation to GDP is mainly predicted, as well as related to the preparation period for the winter season.

4. Diplomats on the subject of the Polish economy and trade

4.1. Cyprus (Ambassador of the Republic of Cyprus to Poland H.E. Petros T. Nacouzis)

It is well known that the Polish economy has been growing steadily for the last 20 years, and has not been impacted by any global recession. To this end, Poland has diversified its economy in order to absorb the shocks that occasionally arise from various exogenous factors. Consequently, Poland has, over the years, built a solid economic foundation driven by the growth of its exports, the attraction of foreign direct investment through the establishment of its special economic zones, and private consumption. However, the new global challenges that emerged, such as the war in Ukraine, the disruption of main commercial routes and connections, the increase in energy prices, and the pandemic, inevitably had an impact on the Polish economy.

Opportunities/Strengths

Poland has a vibrant market economy that has proven to be resilient due to its considerable domestic consumption and robust industries, mainly agriculture, manufacturing, and finance. Poland's successful economy has so far been made possible by its strong exports, skilled workforce, significant FDI, and low labor costs. At the same time, Poland should also take supplementary measures, such as increasing its absorption of EU cohesion funds, initiating its entry into the European Monetary Union, attracting new investors, and continuing to utilize large infrastructure projects. Accordingly, these additive actions could significantly safeguard/boost Poland's potential growth rates. In addition, due to the current war in Ukraine, Poland may serve as a safer economic environment for foreign enterprises wishing to relocate.

Threats/Challenges

It should be noted that current high interest rates, increased food and energy prices, regional disparities, and persistently high inflation raise a number of challenges for the Polish economy. According to the economic data, the Polish economy for 2023 is projected to slow amid high uncertainty. It is equally important to state that the escalation of the current war would increase uncertainty, thereby exacerbating inflation.

In conclusion, Poland should focus on attracting more investments, especially in green technology, and should grasp all the opportunities, as stated above, in order to mitigate the impacts of the war in Ukraine.

Ambassador of the Republic of Cyprus to Poland J.E. Petros T. Nacouzis, Warsaw May 11, 2023

4.2. Hungary (Ambassador of Hungary to Poland, H.E. Orsolya Zsuzsanna Kovács)

„The last 30 years of the Polish economy have been a real success story in the Central European region. It has built a well-diversified, flexible economy that is not particularly open, so it is the least exposed to external factors among the V4 countries. It has remained that way until today – Poland's imports and exports average about 52.5% of Polish GDP. In the case of Hungary, the rate is 78.5%.

The Polish economy is expected to grow by just 0.5% this year, and inflation this year is expected to remain at around 13%. Threats of war, the aforementioned high level of inflation and delays in the inflow of EU funds are taking their toll on the already crisis-proof Polish economy. One of the factors influencing the current state is that a higher percentage of Polish companies with domestic capital have survived the years after the regime change than in the case of Hungarian companies. The share of Polish ownership in corporate assets remains high among players in many key market sectors, including retail. This expectation is due to the Polish economy already having proven it's highly resilient to the global crisis, experiencing unprecedented economic growth during that time. A thriving, stable light industry, textile and agri-food industries were built. Poland is also an important centre for the automotive industry, and major arteries of world trade pass through the country, including the Silk Road from China. In addition, value added in manufacturing is growing, and the Polish economy is moving up in the competitiveness ranking.

Poland's booming economy is a significant trading partner for Hungary and Hungarian companies in the Central and Eastern European region. From Hungary's point of view, Poland is a promising market. The country's geographic proximity, large market and robust economy make Poland a predictable partner in economic and trade relations in the region. The country's large domestic market, rapid catching-up, growing middle class and stable business environment provide an excellent basis for developing bilateral economic and trade relations. Our trade relations, operating within the single European internal market framework, are increasingly less burdened by administrative requirements, providing further opportunities to develop relationships increasingly explored by businesses.

Despite the delay in EU funding, Poland's macroeconomic fundamentals are solid. The budget deficit is not excessive, public debt is low enough to allow borrowing when needed, and Poland's debt rating is favourable. The major rating agencies praise Poland for its low public debt and stable economic growth. However, they point out the rather low level of GDP per capita. Last year's current account deficit now has a significant surplus. Poles' sense of security stems from their economy being less open compared to the rest of the region. Thus, they are less exposed to negative externalities. Relative energy independence improves the country's prospects. The company's own coal reserves provide considerable room for manoeuvre, and its seaports allow it to diversify its sources of supply.

As in other Central European countries, the future shape of industrial production, the construction and service sectors is a risk factor. These industries could be severely affected by the energy crisis and possibly by a lack of funds to maintain and survive.

Unless unpredictable factors suddenly appear, the decline in Poland's economic growth will be insignificant and not a permanent trend. Economic forecasts do not predict a deep recession. Polish inflation is not as high as in other countries in our region and will continue to fall. Monetary policy issues offer room for manoeuvre, as the key interest rate has been at 6.5% for months, which the National Bank of Poland forecasts may remain unchanged until the end of the year. It seems that Poland should survive most of the „macroeconomic shocks" associated with the war in Ukraine within two years. This prediction stems from Poland's diversified economic model, a flexible labour market, an educated workforce, Poland's membership in NATO and the EU, and securing energy supplies despite the reduction of imports from Russia."

Ambassador of Hungary to Poland, H.E. Orsolya Zsuzsanna Kovács,
Warsaw May 9, 2023

Bibliography

1. Afzal M., Riedel B., Sachs N., T*he United States, China, And The "New Non-Aligned" Countries, Global China*, Policy Brief, February 2023.
2. *Agriculture in Ukraine*: Overview DLF.
3. Alińska A., Wasiak K., *Czy stabilność systemu finansowego można uznać za dobro publiczne?*, „Studia Ekonomiczne, Uniwersytet Ekonomiczny w Katowicach", nr 198, cz. 1, Katowice 2014.
4. Amanor-Boadu V., *Empirical evidence for the "Great Resignation"*, Empirical evidence for the "Great Resignation": Monthly Labor Review: U.S. Bureau of Labor Statistics (bls.gov) [dostęp: 5.06.2023].
5. Ames B., Brown W., Deverajan S., Izquierdo A., *Macroeconomic Policy and Poverty Reduction*, International Monetary Fund and the World Bank, August 2001.
6. Angrist N., Koujianou Goldberg P.., Jolliffe D., *Why Is Growth in Developing Countries So Hard to Measure?*, "The Journal of Economic Perspectives", Summer 2021, Vol. 35, No. 3.
7. Barklie G., *China's FDI decline: Why are foreign companies decreasing their dependency on Asian giant?*, Investment Monitor, https://www.investmentmonitor.ai/insights/chinas-fdi-decline-foreign-companies-covid-geopolitics/.
8. Binder C., Kamdar R., *Expected and Realized Inflation in Historical Perspective* "The Journal of Economic Perspectives", Summer 2022, Vol. 36, No. 3.
9. Bloomberg, *World Economy Is Headed for a Recession in 2023*, Researcher Says, December 2022, https://www.bloomberg.com/news/articles/2022-12-26/world-economy-is-headed-for-arecession-in-2023-researcher-says.
10. Brands H., Feaver P.D., *What are America's alliances good for?* Reevaluating Diplomati & Military Power, "Parameters" 47(2) 2017.
11. Center for Preventive Action, *Territorial Disputes in the South China Sea*, Council on Foreign Relations Global Conflict Tracker, 2021.
12. CEPR, *Russia's invasion of Ukraine has led to higher inflation expectations of individuals in Germany*, April 2022, https://new.cepr.org/voxeu/columns/russias-invasion-ukraine-has-led-higher-inflationexpectations-individuals-germany.
13. CNBC, *Goldman Sachs says oil prices could be higher for much longer*, October 2021, https://www.cnbc.com/2021/10/14/goldman-sees-sustained-high-prices-for-oil-in-the-coming-year.html.
14. Charap S., Massicot D., Priebe M., Demus A., Reach C., Stalczynski M., Han E., Davis L.E., *Russian Grand Strategy: Rhetoric and Reality*, Santa Monica, Ca: RAND Corporation, RR-4238-A, 2021.
15. Cochrane J.H., *Fiscal Histories* "The Journal of Economic Perspectives" 2022, Vol. 36, No. 4.
16. Cordesman A.H., P. Cormarie, *Creating a New Energy Strategy for a Post Ukraine War World*, CSIS, August 2022.

17. *Czy złote lata mijają? Wyzwania dla polskiej gospodarki na najbliższe lata*, https://obserwatorgospodarczy.pl/2022/03/30/czy-zlote-lata-mijaja-wyzwania-dla-polskiej-gospodarki-na-najblizsze-lata-raport-og/.
18. Ćwikliński H., *Wyzwania dla polityki makroekonomicznej na początku XXI wieku*, Wydawnictwo UG, Gdańsk 2012.
19. Das K.N., Devjyot Ghoshal, *Ukraine war but business as usual with Russia*, Reuters, September 28.
20. Deni J.R, Alden Ch., Brattberg E., Cliff R., Duckenfield M., R. Ellis R.E, Nelson N., Speranza L., China, Europe, and Pandemic Recession: Beijing's Investments and Transatlantic Security, US Army War College Press, 2022.
21. Denmark A.M., *Trends of the Times: Foundations of Beijing's View on Competition with the United States*, [w:] *US Versus China: Promoting "Constructive Competition" to Avoid "Destructive Competition"*, eds. R. Elder, N. Peterson, B. Bragg, Washington, D.C., Strategic Multilayer Assessment, U.S. Department of Defense, May 2021.
22. Diehl P., Goertz G., *War and Peace in International Rivalry*, Ann Arbor: University of Michigan Press, 2000.
23. Dynamiczny Indeks Konsumpcji, http://www.indekskonsumpcji.pl/.
24. *Europejczycy porażeni galopującymi cenami energii*, https://energia.rp.pl/ceny-energii/art36763851-europejczycy-porazeni-galopujacymi-cenami-energii.
25. Fundacja Forum Energii, Miesięcznik: Dane o energetyce, https://www.forum-energii.eu/pl/dane-o-energetyce/miesiecznik.
26. Garcia P., "Annals of Economics and Statistic", March 2022, No. 145, pp. 5–28.
27. Gilpin R., *War and Change in World Politics*,: Cambridge University Press, New York 1983.
28. Glaser Ch.L., *Rational Theory of International Politics: The Logic of Competition and Cooperation*, Princeton, N.J.: Princeton University Press, 2010.
29. *Global Economic Outlook*, The Conference Board, https://www.conference-board.org/topics/global-economic-outlook.
30. *Global Low-Carbon Energy Technology Investment Surges Past $1 Trillion for the First Time*, Bloomberg NEF, January 26, 2023, https://about.bnef.com/blog/global-low-carbon-energy-technology-investment-surges-past-1-trillion-for-the-first-time/.
31. Goldin I., *The World after Coronavirus*, "Horizons: Journal of International Relations and Sustainable Development", SUMMER 2021, No. 19: *Building Forward Better: After the Rain*, pp. 46–63.
32. Ha L., *Labour market tightness likely to continue, despite potential increase in unemployment*, Economies in 2023: Key Trends to Watch, Euromonitor International, 01.05.2023.
33. Heath T.R., The "Holistic Security Concept": The Securitization of Policy and Increasing Risk of Militarized Crisis, RAND Corporation, June 27, 2015.
34. Henig D., Knight D. M., *Polycrisis: Prompts for an emerging worldview*, "Anthropology Today", 1 April 2023, Vol. 39, nr 2, https://doi.org/10.1111/1467-8322.1279.
35. Hirsch R., *W polskich sklepach tego nie widać, ale żywność na świecie potaniała w ciągu ostatniego roku o ponad 20%*, https://businessinsider.com.pl/gospodarka/wielkie-zmiany-w-e-receptach-i-teleporadach-ciebie-takze-dotkna/pk959qj.
36. Hofer M., *A new economic reality shaped by geopolitical tensions, high inflation and rising interest rates,* Economies in 2023: Key Trends to Watch, Euroomonitor International, 01.05.2023.
37. Homer-Dixon, T. et al., *A call for an international research program on the risk of a global polycrisis*. Technical paper 2022–2, version number 2.0. Cascade Institute, https://cascadeinstitute.org/wp-content/uploads/2022/03/Acall-for-an-international-research-program-on-the-risk-of-a-global-polycrisis-v2.0.pdf.
38. International Monetary Fund, World Economic Outlook, October 2022, https://www.imf.org/en/Publications/WEO/Issues/2022/10/11/world-economic-outlook-october-2022.
39. Janecki J., *Pomiar i ocena stabilności makroekonomicznej w Polsce*, Folia Oeconomica, Acta Universitas Lodzensis, 2(328) 2017.
40. Jervis R., *Cooperation Under the Security Dilemma*, World Politics, Vol. 30, No. 2, 1978;
41. Komorowski P., *Przebieg kryzysu gospodarczego w wymiarze cyklu życia*, [w:] *Wiedza i bogactwo narodów, Kapitał ludzki, globalizacja i regulacja w skali światowej*, red. R. Bartkowiak, P. Wachowiak, OW SGH, Warszawa 2013.

42. Komunikat Prezesa Głównego Urzędu Statystycznego z dnia 13 stycznia 2023 r. w sprawie średniorocznego wskaźnika cen konsumpcyjnych nośników energii w 2022 r.
43. Krajowa Izba Gospodarcza, Wyniki przemysłu w styczniu 2023, https://kig.pl/wyniki-przemyslu-w-styczniu-2023-nizsze-od-prognoz-kig-i-oczekiwan-rynkowych/.
44. Lague D., *Special Report: China's Military Hawks Take the Offensive*, Reuters, January 16, 2013.
45. Libman A., *A New Economic Cold War?*, "Horizons: Journal of International Relations and Sustainable Development", SUMMER 2022, No. 21.
46. Lungu A., *The U.S.-China Clash Is About Ideology After All*, "Foreign Policy", April 6, 2021.
47. Mazarr M.J., *Understanding Competition Great Power Rivalry in a Changing International Order—Concepts and Theories*, RAND Corporation (2022).
48. Mazarr M J., *The Essence of the Strategic Competition with China*, PRISM, Vol. 9, No. 1, October 2020a.
49. Mazarr M.J., Blake J., Casey A., McDonald T., Pezard S., Spirtas M., *Understanding the Emerging Era of International Competition: Theoretical and Historical Perspectives*, Santa Monica, CA: RAND Corporation, RR-2726-AF, 2018.
50. Mearsheimer J., *The Causes and Consequences of the Ukraine War*, "Horizons: Journal of International Relations and Sustainable Development," SUMMER 2022, No. 21.
51. Menguy S., *Fiscal Stimulus in the Euroopean Union to Stabilize the COVID Shock*, "Journal of Economic Integration", December 2022, Vol. 37, No. 4.
52. Munich Re's Economic Outlook 2023: High inflation and geopolitics to shape the global economy in 2023, https://www.munichre.com/landingpage/en/economic-outlook-2023.html.
53. Narodowy Bank Polski, Projekcja inflacji i PKB – marzec 2023, https://nbp.pl/projekcja-inflacji-i-pkb-marzec-2023/.
54. Neely C.J., *Inflation and the Real Value of Debt: A Double-edged Sword*, Federal Reserve Bank of St. Louis, August 1, 2022.
55. O'Connor T., Donovan S., *With World's Eyes on Beijing, Here's How China Ranks Relations Across Globe*, "Newsweek", 2/16/2022, https://www.newsweek.com/worlds-eyes-beijing-heres-how-china-ranks-relations-across-globe-1679183.
56. OECD Economic Outlook, Vol. 2022, Issue 2: Preliminary Version © OECD 2022.
57. OECD, *The supply of critical raw materials endangered by Russia's war on Ukraine*, August 2022, https://www.oecd.org/ukraine-hub/policy-responses/the-supply-of-critical-raw-materials-endangered-byrussia-s-war-on-ukraine-e01ac7be/.
58. Oksińska B., *Wydobycie z polskich kopalń mocno spadło. Czy powtórzy się kryzys węglowy?*, https://businessinsider.com.pl/gospodarka/czy-zabraknie-wegla-w-tym-roku-jakie-beda-ceny-wegla-branza-wyjasnia/xmdbqtt.
59. Overholt W.H., PRISM, 2021, Vol. 9, No. 2 (2021).
60. Parlament Euroopejski, *Zielony Ład: klucz do neutralnej klimatycznie i zrównoważonej UE*, https://www.europarl.europa.eu/news/pl/headlines/society/20200618STO81513/zielony-lad-klucz-do-neutralnej-klimatycznie-i-zrownowazonej-ue?&at_campaign=20234-Green&at_medium=Google_Ads&at_platform=Search&at_creation=RSA&at_goal=TR_G&at_audience=zielony%20%C5%82ad&at_topic=Green_Deal&at_location=PO&gclid=CjwKCAjw9pGjBhB-EiwAa5jl3E4ByOJa4cxCy99Ni24CUOXj26jW3lrWOZv5SAcX2Z1ITkgrYyifXxoC4QAQAvD_BwE.
61. PKEE: *600 miliardów złotych w 7 lat – transformacja energetyczna w Polsce wymaga gigantycznych nakładów*, Serwis Samorządowy PAP, https://samorzad.pap.pl/kategoria/materialy-partnerskie/pkee-600-miliardow-zlotych-w-7-lat-transformacja-energetyczna-w.
62. Polska Wieś i Rolnictwo 2022, Ministerstwo Rolnictwa i Rozwoju Wsi.
63. *Polska w potrzasku zakładnikiem energii węglowej? Wyjątkowo wysoki import energii elektrycznej*, https://globenergia.pl/polska-w-potrzasku-zakladnikiem-energetyki-weglowej-wyjatkowo-wysoki-import-energii/.
64. *Polska w światowych łańcuchach dostaw. Szanse globalne a ryzyka lokalne*, Raport ING Banku Polskiego i Euroopejskiego Kongresu Gospodarczego, kwiecień 2023.
65. *Polska w Zielonym Ładzie – korzyści, możliwości i ocena SWOT*, Kancelaria Senatu, Biuro analiz, dokumentacji i korespondencji.

66. Prezentacja Raportu „Polska wieś 2022. Raport o stanie wsi", notatka prasowa, https://www.fdpa.org.pl/prezentacja-raportu-polska-wies-2022-raport-o-stanie-wsi-notatka-prasowa.
67. Razvadauskas F., *Urban consumer spending to be curbed by inflation and cost of living crisis*, Economies in 2023: Key Trends to Watch, Euroomonitor International, 1.05.2023.
68. Remote work statistics – 2023, https://truelist.co/blog/remote-work-statistics/
69. *Rolnictwo i gospodarka żywnościowa w Polsce*, Ministerstwo Rolnictwa i Rozwoju Wsi, 2019.
70. Rudke M., *Wzrost cen żywności w Polsce nie chce hamować. Odwrotnie niż na świecie. Kiedy nadejdzie ulga?*, https://businessinsider.com.pl/gospodarka/ceny-zywnosci-w-polsce-szybuja-odwrotnie-niz-na-swiecie-kiedy-nadejdzie-ulga/d916jce.
71. Schuman M., *China Is Watching Ukraine with a Lot of Interest*, "The Atlantic", January 13, 2022.
72. Scissors D., *An outstanding recent survey of evidence on this point is Derek Scissors, China's Growth Spurt Ends: What's Next?*, Washington, D.C.: American Enterprise Institute, 2021.
73. Sinek S., *Do You Know the Game You're Playing?* webpage, undated.
74. Sinek S., *The Infinite Game*, New York: Portfolio Press, 2019.
75. State of World Population Report, 2023.
76. *Struktura produkcji elektrycznej – marzec 2023*, https://www.rynekelektryczny.pl/produkcja-energii-elektrycznej-w-polsce/.
77. The Economist, *Who are Russia's supporters?*, https://www.economist.com/graphic-detail/2023/03/31/who-are-russias-supporters.
78. *The Global Risks Report 2023*, World Economic Forum, Davos, January 2023.
79. Transformacja energetyczna w latach 2021–40 może kosztować ok. 1,6 bln zł – PEP2040 (w): https://www.cire.pl/artykuly/serwis-informacyjny-cire-24/181881-transformacja-energetyczna-w-latach-2021–40-moze-kosztowac-ok-1,6-bln-zl-pep2040.
80. Tsoulfidis L., Tsaliki P., *The long recession and economic consequences of the COVID-19 pandemic*, "Investigación Económica", JULIO-SEPTIEMBRE DE 2022, Vol. 81, No. 321.
81. Tvn24.pl, *Tak było w czasach komunizmu. Wszyscy na tym stracą*, https://tvn24.pl/biznes/z-kraju/inflacja-i-stopy-procentowe-glowna-ekonomistka-ebor-u-beata-javorcik-do-tak-niskich-stop-jak-przed-2022-rokiem-juz-nie-wrocimy-7055169.
82. Waldkirch A., *Firms around the World during the COVID-19 Pandemic* "Journal of Economic Integration", March 2021, Vol. 36, No. 1.
83. Weber M., D'Acunto F., Gorodnichenko Y., Coibion O., *The Subjective Inflation Expectations of Households and Firms: Measurement, Determinants, and Implications*, "The Journal of Economic Perspectives", Summer 2022, Vol. 36, No. 3.
84. *Wzrost eksportu produktów rolno-spożywczych w 2022 roku*, https://www.gov.pl/web/rolnictwo/wzrost-eksportu-produktow-rolno-spozywczych-w-2022-roku.
85. *„Zielony Ład" i transformacja energetyczna – jaki scenariusz dla Polski?*, Regionalna Izba Gospodarcza w Katowicach.

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