

RISK FACTORS FOR A RESILIENT ECONOMIC GROWTH POST COVID-19

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Abstract

Economic growth, as many other economic phenomenon, has been deeply affected by COVID-19, several effects being still unknown or poor scientifically researched due to the complexity of the epidemiological situation. Resilience, defined as the ability to deal with adversity, withstand shocks and continuously adapt and accelerate as disruptions and crises arise, has become a new fundamental dimension of the current world economy, implicitly for economic growth, and it is threatened by a series of risk factors. Our analytical study projects these factors from the scientific researcher perspective and establishes five directions of investigation. Our purpose is to bring to the forefront the main risks that affect a resilient economic growth and to identify how resilience impacts annual GDP growth. To reach the goals of this research, we opted for a qualitative method using a general-to-private approach. Among the main risk factors identified are inflation, labour market, energy price, investment decisions, external demand.

Keywords: resilience, risk, economic growth, inflation, GDP

Introduction

Recent global shocks evidence the multidimensional impact of risks, underlining the need to prepare and strengthen the economic growth capacity to be resilient by a faster response and recovery. New theoretical developments have revealed that the accelerated rate of spread and the large number of infected patients and people who have died as a result of the establishment of the COVID-19 pandemic in 2020 has practically placed workers in economies and markets around the world in a crisis situation. Unexpected effect of this unpredictable health crisis manifested itself through a disruption of global supply chains, a dramatic reduction in commercial activities, a discouragement of demand, reduction of working time,

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blocking of some sectors of activity in national economies leading to the emergence of a strong recessions. Recession caused by health crises/pandemics is not, in itself, new to economic history, examples of such shutdowns of economic activity being recorded from the Middle Ages to modern times (Skidelsky, 2009). The novelty is the manifestation of the respective type of impact recession in the context of a service economy, with a high degree of globalization and penetration of informational - communication technologies in the development of economic and social activities.

The paper proposes a preliminary diagnosis of the risk factors and the changes imposed by their manifestations on the resilience of economic growth under the impact of the crisis caused by the new coronavirus, with the presentation of possible scenarios from an analytical perspective.

We therefore started our research considering that specialized studies carried out by various prestigious institutes with the theme of the evolution of economic growth and the resilience capacity of national economies have failed to present a complete situation since 2020. As far as we know, although they identify and treat in a segmented manner various risk factors that threaten the resilience of economic growth, a broader perspective of the theme is not yet been delivered to those interested. Consequently, in the context in which the severe recession expected by analysts was counterbalanced by the resilience of national economies protecting their economic growth, we considered it appropriate to analyse the risk factors that threaten resilience, as an alternative approach of the topic.

Over time, theorists and practitioners alike sustained an idea highly disputed today, according to which “the well-being of a nation has been given by the level of the gross domestic product (GDP), which represents the gross value of the final production of goods and services produced during a period of time by economic agents operating inside national borders” (Chau et al., 2018). Economic growth, understood as a complex process, it manifests itself as the increase of results of the national economy, calculated based on the combination and use of direct production factors: *labour force*, *fixed capital* and the *consumption of material circulating means*. General acknowledgement reveals that national economies aim to acquire economic growth due to the fact that it determines population to consume a bigger quantity of goods and social services, thereby leading to actual improvement of living standards. Specialized literature in the economic field contains various theories regarding the classification and ordering of economic growth factors, designed based on the possibilities of quantifying the direct and indirect contribution, taking into consideration the action priorities within economic policy and their role in the economic dynamics (Rostow, 13).

The modern conception of economic growth began once with the criticism of Mercantilism, especially by the Physiocrats and by the Scottish Enlightenment David Hume (*Essays*, 1741) and Adam Smith (*An inquiry into the nature and causes of the wealth of nations*, 1776), one of their key arguments was that economic development encourages creativity and ideas, thereby increasing productivity.

Based on his research, Thomas Malthus (*An essay on the principle of population*, 1798) counters several opinions popular in that period supporting that human society would continue to improve and tilt toward a utopian ideal, arguing that segments of the general population have invariably been poor and miserable, effectively slowing population growth.

Joseph Schumpeter (*The theory of economic development*, 1934), best known for his theories on business cycles and the development of capitalist economies, became a game changer by introducing the concept of entrepreneurship. For Schumpeter, the entrepreneur was the cornerstone of capitalism, source of innovation, which is the vital force driving a capitalist economy. The Schumpeterian growth model is based on three main ideas: long-run growth results from innovations; innovations result from entrepreneurial investments that are themselves motivated by the prospects of monopoly rents; and new innovations replace old technologies.

Important for the theoretical base of our research is also the Solow Growth Model, an exogenous model of economic growth that analyses changes in the level of output in an economy over time as a result of changes in the population growth rate, the savings rate, and the rate of technological progress, developed by Robert Solow (*A contribution to the theory of economic growth*, 1956), being the first neoclassical growth model.

On the other hand, Simon Kuznets dismantles some of Thomas Malthus ideas and demonstrates that high rates of population growth did not undermine the growth of per capita income, launching the following definition: “A country’s economic growth may be defined as a long-term rise in capacity to supply increasingly diverse economic goods to its population, this growing capacity based on advancing technology and the institutional and ideological adjustments that it demands.” (Kuznets, 1973).

The theory of economic growth advanced again through the theories of economist Paul Romer (*Increasing returns and long-run growth*, 1986, *The origins of endogenous growth*, 1994) in the 80s and early 90s. Even if, Adam Smith’s assertion that wealth is produced most rapidly when the economic role of government is limited is probably “the most influential and durable argument ever made by an economist” (Lotterman, 1995), we are attempting to show that many other contemporary economists, including some with Nobel prizes, have further explored the roots of economic growth, and another turning point is made by Francis Fukuyama (*Trust: the social virtues and the creation of prosperity*, 1995) who argues that while the efforts of these economists have been fruitful, most since Smith have ignored a crucial growth variable: culture. Other important theorists on our topic are Robert E. Lucas and Robert J. Barro (Yueh, 2018).

Daron Acemoglu (*Introduction to modern economic growth*, 2008) gives a modern perspectives on the fundamental causes of economic growth and the wealth of nations, his work presenting the complex are of growth theory, including models

of human capital, endogenous technological change, technology transfer, international trade, economic development, and political economy.

In consequence, traditional research shows that the theory of economic growth is nothing but a vision of economic life in a dynamic conception that takes into account the modification of parameters, of variables that compete in the development of economic and social life. However, a whole range of different approaches to the problem are available and, today, economic growth is no longer analysed only as extensive, intermediate or intensive, all attention focusing on its capacity for resilience.

The resilience of economies, defined as “the ability to deal with adversity, withstand shocks and continuously adapt and accelerate as disruptions and crises arise” (Brende et al., 2022), is a very topical element, a fundamental element in predicting the evolution of the economic aspects of society. The ability of economic growth, classically measured by GDP values, to withstand shocks and to recover shortly after their assimilation has led to the avoidance of a severe, large-scale recession. Economists are talking about a mild and short-lived global recession thanks to a set of economic measures that have seen a swing between a tight monetary policy that reduces both inflation and the economy, and an expansionary fiscal policy aimed at supporting the economy and mitigating the effects of current crises, especially of the energy crisis.

In the last three years, present-day analysis, conducted for research purpose, question definitions and attempt to give empirical proof to sustain the necessity to rethink economic models that connect economic growth to present crisis. Traditional theories like “economic growth as measured solely in terms of annual increases in per-capita income or gross national product, regardless of its distribution and the degree of people’s participation in effective growth” are argued since “classification of countries themselves, based on gross national income per capita, for the World Bank or on the status of markets, for the International Monetary Fund, is dividing the world” and no longer re-legitimate past views (Alenda-Demoutiez, 2021).

On the other hand, the dynamics of economic phenomena in the current geopolitical context determine that the analyses are partial, the conclusions are indicative and with a high degree of estimation. At the same time, the available statistical data are partial, and the published studies and analyses highlight partial aspects, the impact of the COVID-19 crisis in the economic and social sphere, not having the scientific rigor of representativeness and one consistent database. In addition, in the drafting of this analysis, the perspective of economists was taken into account, stating that the economic impact of the pandemic is probably much more complex and varied than what has been observed so far, with amplified effects in the medium and long term in the business environment, the segment of small companies, faced with layoffs since the first months of the crisis.

After examining several previous work, we propose to illuminate this partially charted area, through an analytical study that projects a set of risk factors from the

perspective of the scientific researcher and establishes five lines of investigation: *inflation and measures to protect financial stability; the price of energy in the context of increased demand for natural gas post-COVID 19; China's reopening to foreign trade and investment dynamics; transformations in the labour market; the climate crisis.*

Methodology

The present analysis aims to become a more extensive study on the economic growth resilience post-COVID 19 being at this point a descriptive scientific research segment that can become a useful theoretical base for tackling economic resilience. The chosen topic came from the need to bring together multiple partial analysis of risks that influence the resilience of economic growth and also to validate it as a new concept.

Our investigation creates a literature review which offers an overview of the research area over time. In a qualitative approach, using the technique of analysing and interpreting different known sets of data or opinions, within our study, five research topics are formulated:

1. Inflation and measures to protect financial stability;
2. The price of energy in the context of increased demand for natural gas post-COVID-19;
3. China's reopening to foreign trade and investment dynamics;
4. Transformations in the labour market;
5. The climate crisis.

We chose an inductive research strategy based on: studies and statistical interpretations conducted by bodies recognized for this activity as International Monetary Fund, European Commission, Organisation for Economic Co-operation and Development, opinions of economists with concerns in the sphere of macroeconomics from important and prestigious think-thanks, taking into account that this kind of research offers partial conclusions with a relative character, due to the fact that it operates with various premises investigated.

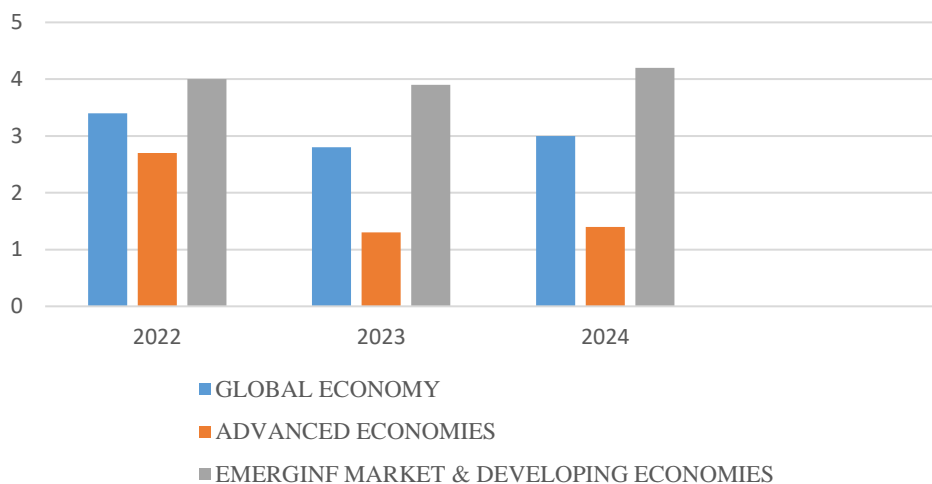
The methodology used for this investigation included several stages of research: documentation and information (consultation of representative and specialized works in the field), synthesis and systematization, and finally, a personal approach on the complexity of the tackled subject.

1. Inflation and measures to protect financial stability

In the post-COVID 19 era, heavily affected by the impact of the armed conflict on the territory of Ukraine, the main impact, from a financial perspective, is the change in the monetary regime from one that supports global markets to one that focuses on measures to contain inflation.

“Europe avoided a full-blown recession this winter and showed resilience - but it faces a triple challenge: fighting inflation, supporting the recovery and protecting financial stability”¹, according to Alfred Kammer (2023), director of the European Department of the International Monetary Fund (IMF). IMF studies explain that the inflation rate remains at a high level and exceeds 10% in most countries in emerging Europe and in some advanced economies. But it is precisely the resilience of economies that combats the effects of inflation and counteracts an easing of inflation by decreasing energy prices and improving the situation in supply chains.

Figure 1. Growth projections (real GDP growth, percent)



Source: authors' representation based on data collected from the International Monetary Fund

Any macroeconomic problem has both a positive, balancing side and a negative, unbalancing side. Regarding inflation as a negative side of the monetary economy, it interferes with all the negative sides of the contemporary economy: recessionary crises, unemployment, budget deficits, external deficits (trade and payments) (Abiad et al., 2015).

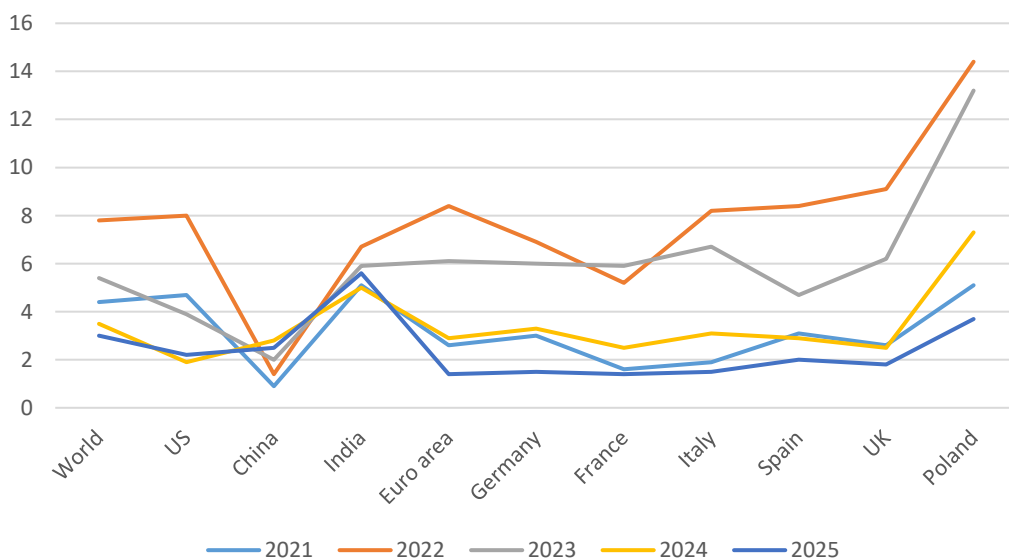
The correlation between inflation and economic growth proves, empirically, to be inversely proportional. Namely, high inflation rates are usually accompanied by negative economic growth rates and vice versa. Unhealthy growth causes, due to its structural deficiencies, inflationary pressures have violent effects in the economy and the fight against inflation was accompanied, over time, by an important decrease in the gross domestic product.

¹ IMF-World Bank Spring Meetings, April 2023.

For this study, it was of interest to investigate that currently we are dealing with a certain increase in the gross domestic product, the economic growth accompanied by high inflation rates being an unhealthy growth, which goes to non-performing sectors, with wage distortions and low efficiency. Such economic growth, in which inflation affects the increased capacity for resilience, can constitute a serious danger for the economy.

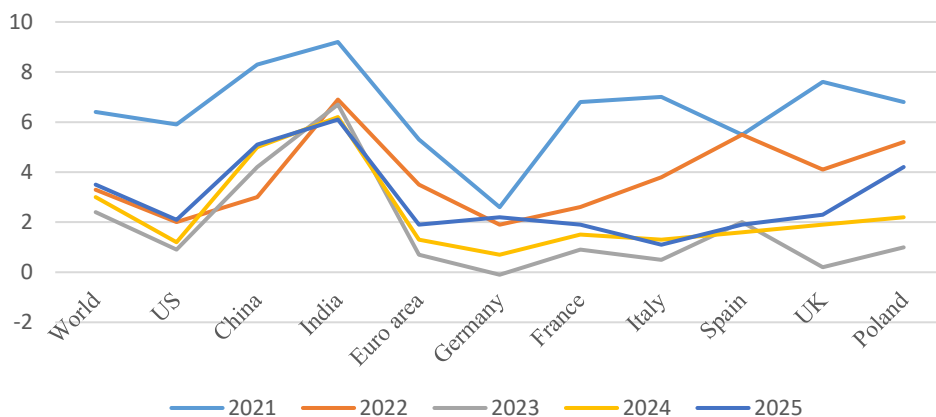
The economic growth of the euro zone which surprised with positive values, against the background of GDP stagnation in the fourth quarter (Q4) of 2022 and a modest increase in the first quarter (Q1) of 2023, refuted forecasts for an imminent recession. Inflation passed its peak (10.6% in October 2022) and started to slow down, driven by lower energy prices and its effects. In the coming quarters, the decrease in inflation will reduce the pressure on consumers. Real wage growth, which hit a low of -4.9% in Q3 2022, is accelerating and is expected to turn positive in Q4 2023. Despite the banking tensions that affected financial markets in March 2023, recent data suggests that financial tensions have so far had little influence on consumers and companies, according to a study by EY European Economic Outlook².

Figure 2. Inflation in 2021 - 2025 (%)



Source: authors' representation based on data collected from Oxford Economics, EY EAT forecast

² Ernst & Young Global Limited is a multinational professional services network which provides assurance, financial audit, tax, consulting and advisory services to its clients.

Figure 3. GDP growth in 2021 - 2025 (%)

Source: authors' representation based on data collected from Oxford Economics, EY EAT forecast

Although inflation in Europe is forecast to decrease relatively quickly during 2023, in annual average terms, it remains high. In the euro area, inflation will reach 6.1%, and some countries in Central and Eastern Europe, especially Hungary, the Czech Republic, Poland and Slovakia will continue to register double-digit inflation in 2023. All projections show a decrease of inflation for all countries for the next two years. Consequently, in theory, the economies in our chart will register economic growth.

According to the European Central Bank's (ECB) target, within the euro area, inflation should reach 2% in the second half of 2024, but core inflation could remain higher until the second half of 2025. For several countries from the European community, price growth will remain above the ECB targets until 2025, or even longer for some. The ECB will maintain a data-driven approach and, due to increased uncertainty as a result of financial sector turmoil over credit conditions, is reluctant to provide interest rate guidance, which we believe it could have been helpful to economic resilience.

All in all, data within our chart interpretation advocates the correlation between inflation and economic growth, supporting our direction of investigation regarding inflation being a significant risk factor that threatens a resilient economic growth.

Several new approaches to inflation analyses and its correlation to a resilient economic growth bring to the foreground new analytical models. Girdzijauskas, S. et al. (2022) present the new analytical model of aggregate inflation. In this theoretical analysis "the formation of an economic bubble is provided based on saturation phenomena and its micro and macroeconomic implications are discussed." (Girdzijauskas, S. et al., 2022) The main findings in this recent research

is the creation of an extended inflation model representing the main drivers of inflation and therefore contributes to the concept of controlled economic growth, which is necessary to ensure resilience of economic growth for national economies.

2. The price of energy in the context of increased demand for natural gas post-COVID 19

Energy is considered an indispensable resource for performing current activities, both for the population and for economic operators. Therefore, the significant increase in its prices observed over the past several years at the European level is expected to have an impact on the dynamics of consumer pricing sooner or later. The broad rise in inflation rates at the community level may also be an indication that such adjustments are about to take place. Also, questions about the potential medium- and long-term repercussions of these shocks, with the possibility of lowering economic agents' expectations for inflation and, accordingly, of a slower-than-expected recovery of economic activity, started to rise. In this context, the present research aims to identify the factors (structural or temporary) that led to such increases in the natural gas and electricity markets as well as to quantify the effects that these increases will have on future economic growth dynamics and resilience.

Our research revealed that there has been a dramatic rise in the demand for natural gas, both for the production of power and for industrial uses, since the global economy has fully recovered and constraints imposed by the epidemic have been eased. This situation was made worse during the summer season by the high demand for electricity production against the backdrop of heat waves, along with the reduction of output from rival sources (hydro and wind), and the manifestation of some supply constraints brought on by extreme weather events or protracted maintenance work (given that some of the latter were delayed during the acute phases of the pandemic). On the European market, an important factor of the rapid rise of natural gas quotations (to historical maximum values, unlike developments in other regions) was one of a cyclical nature, represented by the reduced level of stocks (around 77% in October 2021, compared to almost 95% in the corresponding month of the previous year), caused by a prolonged cold season with temperatures below expectations taking into account past average values. The effect was amplified by the difficulty of restocking supplies during the summer, against a backdrop of limited natural gas deliveries by the major players, either due to structural factors - the natural decline in production, the tendency to abandon coal-fired power plants, the restriction of investments in fossil fuels in the context of the decarbonisation process, or the beginning of closure procedures of the largest gas field in the Netherlands, the main producer in the EU, increased competition for liquefied natural gas from Asian economies as a result of the plan to reduce carbon emissions -, or due to geopolitical reasons: dependence on Russian gas imports and associated supply problems. The

structure of the European market, which gives contracts with prices set according to the ratio between natural gas supply and demand (to the detriment of contracts indexed to the price of oil) the dominant share (80% in 2020), also contributed to the rise in quotations. This characteristic favours the quicker transmission of specific market pressures.

Because the authors know closely the economic situation of Romania and there is a concern for the analysis of the phenomenon that constitutes the subject of the article in this country, we examine also the situation in Romania, where the general framework was relatively similar: the amount of natural gas in deposits being much lower than the level recorded in the previous year (around 74% in October 2021, compared to 95% in 2020); in addition, the domestic market is also characterized by a natural decline in production, a fact that has led to an increase in imports in recent years, thus increasing exposure to external shocks. With regard to the advance of electricity quotations from the second half of 2021 on the European markets and, implicitly, on the Romanian one, the decisive factor was the large increase in production costs for fossil fuel-based plants - in this case, the significant jump of the price of natural gas (up to five times compared to the same period last year) and of coal quotations (about three times). Additional effects include a rise in CO₂ emission certificate prices as a result of European-level decisions to speed up the transition to a green economy, such as a wider reduction in the carbon emission ceiling or a quicker removal of certificates from the market that are no longer in use. Added to these influences was the decrease in the electricity production of hydroelectric plants and wind plants (caused by low precipitation and lack of wind), which had to be compensated by the generation of electricity in thermal plants, already faced with problems on the side of production costs. Finally, the exacerbated increase in electricity quotes also reflects the specific pricing mechanism in this market, in the context of aligning the prices of all electricity production units to the marginal production cost of the last unit entering the system to cover energy demand electric. In anticipation of a reduction in the severe supply and demand mismatch, there was a certain price correction at the European level in 2022 after the cold season. On a longer time horizon, the primary structural element that is accelerating the EU's transition to a green economy as a sign of activating its capacity for resilience may cause European energy prices to stabilize at lower levels. According to the European Commission, the process involves the rapid increase in electricity production from renewable sources (simultaneous with the electrification of the heating system of households) which implies a reduction in the influence of higher production costs from electricity based on fossil fuels.

The dynamics of real GDP are being affected in a contractionary way by the rise in the cost of energy products as well as other raw materials and materials, and it is expected that these impacts will last for at least some time to come. In this matter, it is important to mention important research work conducted by Li R. et al. (2021) that provide an econometric analysis that aims to present the connection among

energy consumption, capital or labour to real GDP. Given that energy inputs are difficult to replace with other factors of production, at least in the long term, short and medium, it is important to highlight those regarding the real disposable income of households and the resources available for investment by companies. This presents a challenge to resilience.

3. China's reopening to foreign trade and investment dynamics

For China, the economic, social and fiscal costs of the zero-Covid policy have led to enormous uncertainty over the economy, with major impacts on consumption and investment. At the same time, the infection rate linked to the lifting of restrictions has put immense pressure on economic activity. In this context, Coface³ forecasts a gradual normalization of economic activity in March 2023, with a firm recovery starting in Q2 2023, with the reopening of China's economy to foreign trade after three years of restrictions. Economists at banking group Goldman Sachs⁴ forecast GDP in the world's second-largest economy to grow 6.5% by the end of the year, boosting global trade.

We believe that the reopening of China will give a welcome boost to global economic growth, offsetting weakness in Europe and a possible future recession in the US. We should also take into consideration that in 2023, the revival of activity in the world's second largest economy could give a boost to inflation just as the major central banks of the world is struggling to bring it back under control. Moreover, representatives of the IMF appreciate that China's abandonment of the zero-Covid policy is probably the single most important factor for the growth of the world economy in 2023, warning about the effect on inflation.

Our direction of investigation is sustained also by specialists from Bloomberg Economics⁵ who expect the Chinese GDP to accelerate from 3% in 2022 to 5.8% in 2023. Given the relationship between China's growth, energy prices and global inflation, consumer prices could rise by almost a percentage point in the last quarter of this year. If China's growth is higher, the boost would be closer to 2%. In the context of the central banks' efforts to bring inflation back to the 2% target, this advance matters a lot.

³ Coface (Compagnie Française d'Assurance pour le Commerce Extérieur) is a company that operates globally, providing companies advisory in domestic and export markets, credit insurance, debt collection, factoring, business intelligence and collateral insurance services.

⁴ The Goldman Sachs Group, Inc., is a global bank holding company, engaged in investment banking, securities, investment management and financial consulting activities.

⁵ Bloomberg L.P. is a financial, software, data, and media company that provides financial software tools and enterprise applications such as analytics and equity trading platform, data services, and news to financial companies and organizations.

China's reopening to foreign trade will also boost the investment market. A recent perception survey conducted by the IFO Institute⁶, by consulting around 1000 experts from 110 countries, mentions the reduction of investments as the main problem with a strong impact on national economies. Beyond the situation in China, investment will continue to influence the resilience of economic growth especially through movements in real estate. While the real estate sector is expected to stabilize gradually given increasing political support, growth in infrastructure investment could be weaker. Given the weakened global outlook, export-oriented firms are unlikely to invest in facilities.

Investment was an important driver of growth last year, particularly in the second half of the year, as consumption slowed amid deteriorating purchasing power due to headwinds in inflation.

Gross fixed capital formation contributed 2.2 percentage points to the GDP advance in 2022, compared to just 0.4 percentage points in 2021, for example. It is the best result since 2019, when the investment contribution to economic growth was 2.7 percentage points from 4.2%.

The declining investment trajectory, which despite the pandemic showed remarkable resilience, results in less capital accumulation and less effective utilization of production inputs, which has an effect on the dynamics of potential GDP. The latter would additionally be affected by the economy's reduced ability to create new jobs. A decline in activity in a number of important economic sectors, such as industrial output, may follow the impact on investment, especially as a result of rising production costs brought on by rising energy commodity prices. In turn, it is anticipated that the exports of goods and services, already impacted by the persistence of syncope in the supply chains, will reflect the challenges faced by exporting companies due to the rise in production costs (which will have an effect on the competitiveness of their prices in the external market) and the decline in investment resources (which will have a negative impact on productivity). The dynamics of imports of goods and services are also designed to respond to shocks to the domestic demand for goods and services and to shocks to exports of goods and services, respectively.

However, in some product categories where domestic producers would be more impacted by rising energy prices than foreign rivals (who had access to more energy-efficient technologies), imports might win market share.

⁶ The Ifo Institute for Economic Research is a Munich is one of Germany's largest economic think-tanks, that analyses economic policy and is known for its monthly Ifo Business Climate Index for Germany.

4. Transformations in the labour market

The paradigmatic transformation undergone by the economy and society in the last half of the 20th century and at the beginning of the 21st century, began to raise more and more questions, as technological progress, the appearance of more and more digitized, robotic systems that advanced to the exploitation of artificial intelligence have turned into real challenges and pressures for the labour force under increasing pressures and frictions.

The COVID-19 pandemic crisis, which was triggered on by a sudden, almost universal worsening of the macroeconomic environment and the business climate, had a significant impact on the labour market's delicate equilibrium because it occurred at the intersection of demand and supply factors that determine employment opportunities. The post-COVID economic recovery in developed countries, from a labour market perspective, means measures to reduce unemployment, decrease income inequality and in-work poverty, increase the purchasing power of income and manage the postponement of household consumption. Measures adopted by developed countries to combat the effects of the pandemic recession included increasing the duration and level of social assistance, as well as active labour market policy measures such as short-term employment, easy and quick vocational retraining, the opportunity to work in extraordinary conditions. The labour market has undergone the most transformations, and political decision-makers, the academic environment and the business environment are faced with new questions, hypotheses and challenges regarding its issues.

Disruption of global value chains, complete or partial closure of international trade flow lanes, as well as border closures, temporary prohibitions on economic activity in the majority of sectors, hygienic and social segregation laws, restrictions on the right to leave the house, with the exception of well-defined situations, bans on leaving towns and, in some cases, their quarantine, the timely opening of some air and land transport routes for seasonal, etc. are only some of the factors with significant influences.

From a macroeconomic perspective, underemployment contributes to both frictional and structural unemployment and affects labour productivity. A nation's capacity for economic growth and its gross domestic product (GDP) per capita (as measured by aggregate demand and GDP) are consequently impacted by this.

Consumer spending is the factor that has the most influence on the GDP and economic expansion. Businesses do not invest in labour or capital, nor do they try to expand to satisfy customer demand, if consumers do not spend money on goods and services (Potters et al., 2021). This results in a slowdown in the economy and an increase in unemployment, which pave the way for an economic recession that, as we previously stated, was restrained by the resilience of economies.

For a country's workforce and societal well-being, employability is essential. The COVID-19 crisis has shown us how important it is to safeguard not only the

most important economic sectors but also our resources, technology, and infrastructure. Above all, we must safeguard our workforce and jobs.

5. The climate crisis

Increased energy use and resource consumption often go hand in hand with higher levels of economic activity. “Energy consumption and greenhouse gas emissions, and thus climate forcing, continue to be strongly correlated because fossil fuels still make up 80% of the world’s energy mix”.(Ritchie et al., 2022) This study investigates the relationship between decarbonisation and economic growth resilience, as well as whether the suite of climate change mitigation policies enhances resiliency. The literature provides radically different explanations for this subject, with academics making arguments along a spectrum that runs from the most idealistic “green growth” ideas to pessimistic “decline” views.

While globally, CO₂ emissions per unit of GDP are falling, the rate of decoupling from 1995 to 2018 was only -1.8% annually. To reach net zero by 2050, the rate would have to accelerate to -8.7%, assuming population and GDP growth projections are given, or by a factor of nearly five. In order to keep GDP and population growth at their projections, and thus reject the tapering proposal, decoupling would have to accelerate massively. Two ways are crucial: reducing the energy intensity of production and/or the intensity of energy emissions (Lenaerts et al., 2021).

“The biggest impact of climate change is that it could wipe out up to 18% of the world economy’s GDP by 2050 if global temperatures rise by 3.2°C”, warns the Swiss Re Institute⁷. Therefore, this major risk factor that could disrupt economic growth is combated by a series of measures that demonstrate its resilience:

- allocating incentives from the state budget to make green technologies cheaper (for example, photovoltaic panels or electric vehicles);
- providing incentives for investment in “green” financial products and services;
- allowing more space for pedestrians and cyclists, at the expense of motor vehicles;
- banning petrol and diesel vehicles from central city areas to create vehicle-free zones;
- requiring all food retailers to offer vegan alternatives or increasing taxes on red meat and dairy.
- increasing taxes on means of transport that are more harmful to the environment (eg airplanes, diesel vehicles);

⁷ Swiss Reinsurance Company Ltd, known as Swiss Re, is a reinsurance company based in Zürich, Switzerland, being one of the world’s largest reinsurers, operating through offices in more than 25 countries.

If fossil fuels are severely outpriced by low-carbon energy, GDP emissions intensity may drop to the point that emissions and economic production are completely unrelated. The availability of negative emission strategies may also be important in this case, especially in industries where emissions are hard to reduce, like agriculture and aviation, provided that these methods support rather than supplant overall efforts at attenuation. Absolute decoupling of emissions from economic activity would be difficult and require significant investments in low-carbon energy, but it is not impossible given the substantial price drops in renewable energy technologies already observed.

Conclusion

Taking into account that this paper proposes a preliminary diagnosis of the risk factors and the changes imposed by their manifestations on the resilience of economic growth under the impact of the crisis caused by the new coronavirus, with the presentation of possible scenarios from an analytical perspective, we feel the need to embrace also an empirical approach using data collected for a more accurate analysis.

Our analysis leads to a number of useful conclusions for further research:

- The extension of the period of high oil costs, inflation, and tightening monetary policy will continue to have an impact on consumer spending and economic expansion. In a simplified scenario, which takes into account the calming of the recent turbulences in the financial sector, GDP growth in the euro area would decrease from 3.5% in 2022, to 0.7% this year and then reach 1.3% in 2024 and to 1.9% in 2025. Therefore, slower growth than the 1.9% average recorded in the period 2014-2019, before the pandemic, is expected. The evolution of the European economies will remain far below the pre-Covid19 trends, influenced both by the long-term negative effects of the pandemic and those of the war in Ukraine.
- Despite the drop in energy prices, high inflation may prove persistent.
- The downward trend in inflation could be counterbalanced by a strong and sustained increase in wages, which accelerated in the euro area. The economic slowdown has caused some easing of labour demand, but labour markets remain much tighter than before the pandemic.
- Geopolitical uncertainty, the gradual decoupling of large economies from globalized supply networks and the risk of an economic downturn have in turn a direct shock on consumer spending, especially on population consumption, and it is households that prove to be the least resilient in the event a hard landing of the economy.
- Overall, strong arguments exist to sustain that promoting economic growth and halting climate change are not mutually exclusive desired results. The recession following the global economic crisis caused emissions to fall, which was

accompanied with a decline in economic activity. It is questionable, though, if the encouraging indicators shown this far in some nations will continue to be a pattern.

All in all, the subject proposed in this paper creates, in our opinion, a broader perspective regarding the economic growth capacity of resilience and makes an analysis of the risk factors that influence it, being a useful tool for economists or students in the field, when trying to clarify current macroeconomic events.

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