

# Economic Crisis, Changing Paradigms and Organizational Complexity

Pablo Guerrero Sánchez<sup>1</sup>, Irene Sánchez Guevara<sup>2</sup>, Augusto Renato Pérez Mayo<sup>1\*</sup>

<sup>1</sup>Autonomous University of the State of Morelos, Cuernavaca, Mexico

<sup>2</sup>Metropolitan Autonomous University, Mexico City, Mexico

Email: \*renatomayo@hotmail.com

**How to cite this paper:** Sánchez, P. G., Guevara, I. S., & Mayo, A. R. P. (2022). Economic Crisis, Changing Paradigms and Organizational Complexity. *Journal of Human Resource and Sustainability Studies*, 10, 737-752.

<https://doi.org/10.4236/jhrss.2022.104043>

**Received:** September 17, 2022

**Accepted:** November 21, 2022

**Published:** November 24, 2022

Copyright © 2022 by author(s) and Scientific Research Publishing Inc.

This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

## Abstract

The purpose of this article is to describe the basic elements between the imminent economic recession and its structural variables, the method used was the documentary quantitative analysis of financial reports, and the results shown are the correlation between the variables, and the explanation given. phenomenon, as a compulsion we can find the variability in the dollar, in the relationships between political and economic elements, the complex variables that affect both inflation and consumers worldwide and that can produce short-term social problems, so this article aims to show the world the economic situation and its dangers if the course of economic policies and peace agreements in the world is not changed. The economic model in Russia is presented and the factors that have affected the economic system are discussed. In addition, it also introduces the possible recession that is coming. The world is facing a series of structural changes, which are producing an interaction between various organizational elements worldwide, which are interconnected, and which affect supply chains, inflation, global production, new business models, new economic realities, interest rates, loop-like behavior in markets, strategies of retailers, SMEs, large companies and the value chain, are causing scarcity, affecting salary based on psychological and social values subjective as the great renunciation at the world level; in Canada alone, they have a report of 1,000,000 unfilled jobs. Because of the war, there are also problems with the supply of raw materials; metals, fertilizers, food and oil are changing market strategies. The interconnection of free trade has been broken, which is affecting the world in terms of price. Consumers are, on the one hand, unable to cope with increases in the prices of the basic basket and the cost of living, such as the price of housing worldwide, this is generating a complex loop under a turbulent system. This research was documentary.

## Keywords

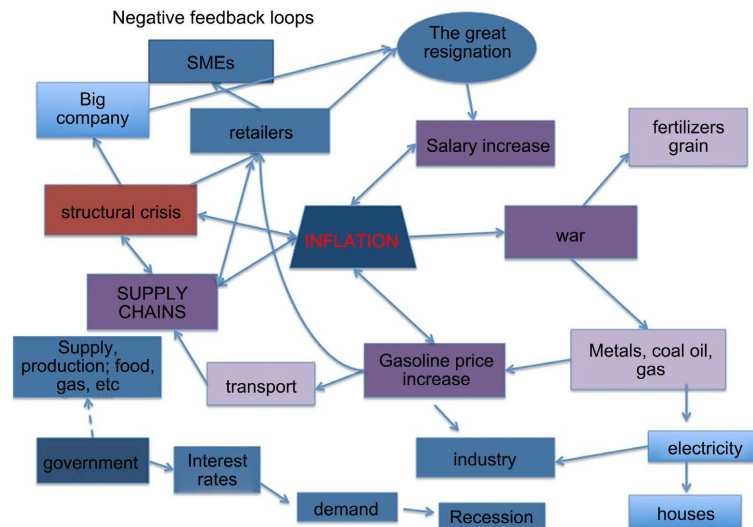
Crisis, Inflation, Supply Chains, Organizational Complexity

## 1. Introduction to the Systemic Problem

The current economic system is based on the interdependence of value chains (Dubois, 2004), economies of scale (Davis, 2017), and supply chains, which operated under relatively stable conditions until before the pandemic (Shen & Sun, 2021), so they do not make sense under a turbulent scheme (Tang, 2021), with dissipative structures (Yuan, 2022). There is a chaotic system where alterations in the system due to interconnection produce another chaotic state. There are a series of factors that could not be determined due to the complexity of the system (Arthur, 2021), such as psychosocial ones (Orviz, 2021), the speed of the return to an open economy that put pressure on the chains that had supply problems after of the pandemic, the complexity of building supply chains based on chips, which affect all technology companies and the automobile industry, but at the same time we have a series of problems in the primary sector since the war with respect to the elements necessary for the manufacture of fertilizers; in particular, Phosphate (Saleem, 2021), which since before the war, and during the pandemic, increased its price. On the other hand, we have the great resignation (Sull, 2022) worldwide that has been putting pressure on new working conditions and causing crisis and inflation, in addition to the lack of carriers (Kauffmann, 2022), for various reasons, in the United Kingdom for example due to the Brexit, while in other countries due to other variables; a negative loop is being generated in the system which produces complex effect. Inflation is a structural problem (Diegel, 2021) that affects retailers, SMEs and large companies, due to the global crisis in the supply chain (Harland, 2021), the lack of chips, but at the same time, due to the great resignation (Sull, 2022) in large companies and SMEs, where employees seek improvements in their working conditions (better wages, flexible hours, contracts, even unions as in the case of Starbucks, and the ability to work in a hybrid way) but above all a less toxic work environment as a result of psychopathic employers that they only seek profit by sacrificing their employees, which indicates psychological reasons as an explanation for the phenomenon. The response of employers as a form of external motivation to mitigate the phenomenon of resignation is to raise wages, without understanding that they are the problem, however, this is another factor that generates inflation, so the cost of living of workers is not enough to raise wages, so more wages are needed, which produces more inflation; as a loop, until the world economy crashes (Jabeur, 2021).

## 2. The Complexity of the Elements of the System

Each of the variables that are causing inflation worldwide (Papava, 2022) has become loops that alter the behavior of the complex-open system in the market and in supply chains. There are variables that we cannot control, such as war; a heuristic model is presented to explain the complex interdependent relationship between the variables that produce the behavior (Figure 1).



**Figure 1.** The interdependence of the complex elements of current reality.  
Source: Self elaboration.

Inflation is a structural problem that affects retailers, SMEs and large companies, due to the global crisis in the supply chain, and the lack of chips, but at the same time, due to the great resignation in large companies and SMEs, where employees seek improvements in their working conditions (better wages, flexible hours, contracts, even unions as in the case of Starbucks, and the ability to work in a hybrid way) but above all a less toxic work environment as a result of psychopathic employers that they only seek profit by sacrificing their employees, which indicates psychological reasons as an explanation for the phenomenon. The response of employers as a form of external motivation to mitigate the phenomenon of resignation is to raise wages, without understanding that they are the problem, however, this is another factor that generates inflation, so the cost of living of workers is not enough to raise wages, so more wages are needed, which produces more inflation; as a loop, until the world economy crashes.

Another effect on business and inflation around the world was the cost of the war; which basically has an impact: in metals, gold, oil and the gas necessary for production in Germany, by having sanctions on Russian industries there is a worldwide shortage which has caused the price of a barrel of oil to reach the 130 dollars per barrel, which prompted the US to ask the Arab countries to increase their production but also Venezuela, although due to political sanctions they have not used Iranian oil, but their strategic reserves, the second side of the war is related with the production of grains, a third of the production of wheat and corn is produced in the region between Ukraine and Russia (Kholoshyn, 2021) this has caused shortages and an increase in food prices worldwide, but not only that, also because Russia produces the necessary fertilizer to plant in other countries such as Mexico. The increase in fuel prices increases the price of transporting products, which produces inflation in final products and affects the supply chains that produce inflation as another loop in the interconnection of the parts.

Another element was the return of the vaccine-based economies to an open model in which demand increased, but due to the crisis in the supply chains, supply did not, generating more scarcity and inflation.

The response by the central banks so far has been to raise interest rates (Turvey, 2022) as a measure to curb inflation to curb demand, however, it is causing stagflation, that is, zero growth but with inflation, wages are not going up with the speed of inflation and the cost of living, it's getting more and more complicated. The production of small organizations cannot support the overdue portfolio, and it is that by raising interest rates, only demand is affected, not the cause of inflation, which in this case is the shortage in supply (due to supply chains, war, and the great resignation), so medicine is not about disease, and could cause a recession.

The war also has a series of unforeseen consequences that cannot be controlled by central banks, such as the production and scarcity of food and fertilizers:

For the production of fertilizers, three types of components or elements of nature are used, for example it is estimated that 50% of the nitrogen that we have in the body reaches us through fertilizers, however since 2010 scientists realized of something worrying that the fertilizer could run out, because it needs nitrogen, phosphate and potassium, two of which we cannot create, phosphate and potassium, which are more or less controlled by only 4 countries; Canada with 1/3 Russia and Belarus and China produce 10% and 20% each, all the other combined countries produce 19%, although we still have enough of this product for the next 100 years, but not phosphate, since 2010 The scientific community has begun to ask when this necessary element will run out, assuming that the population no longer grows at all, because we have already seen cuts, and its prices have increased by 80% since 2020, China prohibited the export of phosphate to produce its own food, however Morocco has 70% of the world's phosphate, so in the coming years the world population will depend on who Morocco chooses to trade, this is a possible world conflict (Guerrero-Sánchez & Pérez-Mayo, 2021: p. 8).

The problem is related to the amount of phosphate used in fertilizers for food and its relation to war, to the amount of lithium for batteries in alternative power generation systems, the development of research and development of the perovskite and sodium to improve the efficiency of solar panels, and on the other hand the interconnection of the elements of the system that produces a complex organizational system with the following characteristics.

- 1) Complex systems have a large number of elements.
- 2) Elements interact dynamically.
- 3) The interactions are rich; any element in the system can influence or be influenced by anyone else.
- 4) The interactions are not linear.
- 5) Interactions are typically short-range.

- 6) There are positive and negative feedback loops of interactions.
- 7) They are open systems.
- 8) They operate under unbalanced conditions.
- 9) They have stories.

10) Individual elements usually ignore the behavior of the whole system where they are (Maguire, 2006 in Guerrero et al., 2021).

From the variables in the list we understand that there are a large number of elements and organizations involved in the phenomenon of inflation; like the great resignation, the war, the crisis in the supply chain and the increase in gasoline, are interacting in a dynamic way, rich in their interactions, and where each element alters, influences and is influenced by the other elements of the supply system in a nonlinear way. Under the financial system, volatility is short-range, there are feedback loops such as the rise in inflation and wages that generate more inflation in a negative way. Being within the open system, the environment is to say that war affects the entire system of free trade, and the balance is poor and highly dynamic-turbulent (and can be explained through systems of equations such as Navier Stokes, and Mandelbrot). There is an economic, political-social and geographical history behind the war, both due to the pandemic in the case of the supply chain crisis, and psychosocial factors within the companies that explain the great resignation. Finally, individual elements such as small organizations do not understand the interdependent framework of the entire model.

The model operates under turbulent conditions, which can be explained from the Lorenz equations for chaos;

$$\frac{dx}{dt} = \sigma(y - x)$$

$$\frac{dy}{dt} = x(p - z)$$

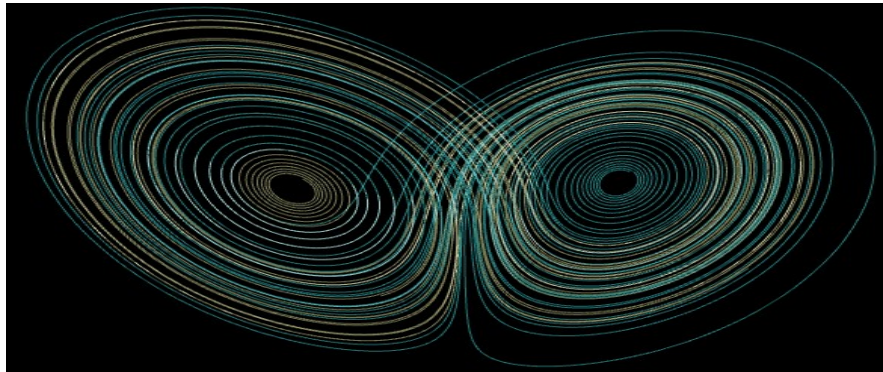
$$\frac{dz}{dt} = xy - \beta z$$

and that can be seen in the Lorenz attractor.

As we can see in **Figure 2** the elements in nonlinear dynamical systems, these are very sensitive to variations in the initial conditions; in turn, the behavior of the great resignation is a synchronization model of the elements in a complex way but at the same time interconnected within the world system and can be explained through Kuramoto's equations:

$$\dot{\theta}_i = \omega_i + \frac{K}{N} \sum_{j=1}^N \sin(\theta_j - \theta_i)$$

It is understood that in a complex system such as the human, the parts are interconnected and tend to influence each other unconsciously. As mentioned, unlike physical systems, human systems have histories: political, economic and social, this can explain the behavior of the system from the development of the Russian economic model.



**Figure 2.** The complex behavior of a system.

### 2.1. Economic Model in Russia

You have to understand what has happened to the economy in Russia since the Soviet Union to understand what has happened. So far it has been the most sanctioned nation during the war in economic terms, its ability to access the free market removed, its banks targeted, luxury targets, even vodka. But the problem is that the Russian economy has nothing to do with any of that, as you can see in the first graph it has to do with oil, natural gas and minerals, as well as grains and fertilizers. The problem is that sanctioning these items implies a sanction for the entire productive system of Germany, which is the economic engine of Europe, interconnected by free trade with America. On the other hand, food shortages affect the whole world and produce inflationary pressure worldwide. In other words, it is not a diversified economy like the Western ones, but rather it is an economy of resources, like the Latin American ones and Saudi Arabia.

The problem is at the beginning of the economy originally based on the Soviet history of the country; how were the companies before the collapse? Back in 1992, it was a company in the shoe sector (all too specialized typical of the government bureaucratic system), where outside the building on the other side of the garden there was a pile of partitions, and the general manager mentioned those are all my savings; because people need partitions so I can pay them with partitions, at that time inflation was so high that tangible partitions were more valuable than Rubles. When the USSR collapsed, so did its currency to levels that reached 205%. Another company that produced industrial furnaces made of bronze and exported them to Germany; that melted them down and only sold the bronze in this sense it was a metal export industry.

In general, the companies that were successful are the ones that continue to be because they sell natural gas, oil, metals and grains, as well as fertilizers, since the value added to the industries could not compete with Western products, in reality, they did not there was no added value, and the problem is that there was no cash flow to be paid between the companies since when the USSR existed, prices were actually controlled by the state when it ended; inflation skyrocketed, for example, if you had a Ruble and you could buy a dozen eggs, a short time later you could buy 1 egg with that Ruble, so if you wanted to buy a ladder instead of

using Rubles you wore shoes. Money is supposed to have value, an accounting unit that you can assign value to and have records with, and it should provide an easy way of exchange, which is a problem if you want to exchange a wall for a certain amount of cows for example.

An economics professor in Moscow named Vladislav Navenskiv mentions that sometimes companies paid workers with things, towels, vodka, etc. And then they had to find a way to sell those towels, it was a very inefficient economy. Russia became over time a gas station with a powerful army (Gazprom), which could compete as a company on a global level, and on which Europe became dependent. Then IOUs were developed which were pieces of paper as an alternative to Rubles, which were used by companies, since everyone needed gas, then other companies began to make their own IOUs, and by hand people put I transfer this to the company X, and so from one company to another, it could reach up to 40 times, which in the end were promised in exchange for something valuable. The problem is that it was only used in the industrial sector, finally when Russia stabilized, so did the Ruble over time, until the time of the war when it lost value again at the beginning, however, Russia began to accumulate gold, which is a global situation of turbulence, became a refuge, and increased its value, which to pay its debt, with the US sanctions on the 600 billion dollars that are in foreign banks could not have access. Given this situation, Russia decided to pay JP. Morgan in Rubles under the promise that they were supported by their gold, which makes sense in a resource-based economy, so the economic sanctions are poorly focused, and they affect more the countries that are applying them because they depend on those resources, gas, oil, grains, fertilizers, and metals.

Before the generalized inflation as an effect of the opening to the Russian market, the strategy that caused the loss of the value of the Ruble was price control, however, we know that in the face of such measures, what is caused over time is shortage.

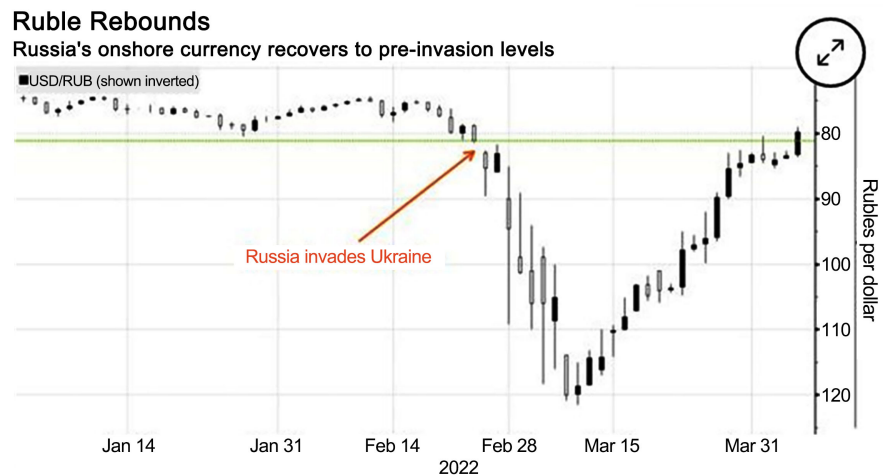
However, the Ruble as of April 7, 2022 has returned to its pre-war value due to the fact that Russia's client countries for imports are accepting the tacit conditions of Russian sale. From the investment point of view, since there is a release during March 2022 of trading again in the Russian Ruble currency market, investors have bet on a long-term period where one of the main currencies linked to oil in addition to the Dollar is the ruble.

The Ruble has had good behavior in the month of March;

As can be seen in **Figure 3**, on the day of the invasion of Ukraine, the Ruble lost its value; however it has had a recovery, according to the data offered below during the period of time described in the graph.

The 5 reasons are:

- 1) The financial position of Russia, for exporting energy products of 321 billion dollars so far in 2022 alone, so it has a surplus. and is paid in dollars and euros.



**Figure 3.** The complex behavior of the Ruble in the first moments of the war. Source: Micex, Bloomberg.

2) The threats that the West pays for gas in Rubles, for which the West is buying Rubles.

3) The sharp rise in interest rates of the Russian bank, if the Russians do not sell their Rubles they do not lose money, that is, the capital control imposed by the Russian central bank drives the demand for Rubles.

4) Link the modern Ruble to gold, given that the Russian central bank has agreed to buy gold at 5000 Rubles per gram, which means that any country can buy it at 4500 and sell it to the Russian bank at 5000, which favors the purchase of Rubles.

5) Speculation, thinking that the Ruble is down but that it will rise.

## 2.2. Other Factors that Have Affected the System

We find that the economic stimuli of people who did not work during the pandemic but who received money from their governments have affected the savings rate, which triggered demand in the open economy, but on the other hand, the increase in the production of banknotes by central banks, caused the devaluation of money, but at the same time due to low production and the crisis in the supply chain, and on the other hand scarcity due to the war.

Perceiving inflation as a macroeconomic problem, central banks began to raise interest rates in order to limit demand. But in doing so, they have made loans more expensive and thus limit supply. Unfortunately, by making such an unjustified decision, the central banks showed some confusion (Roach, 2022).

The solution to the current problem of supply chain inflation depends entirely on well-functioning global supply chains that must be built on the basis of a renewed context of globalization in the post-pandemic period (Rogoff, 2021).

The problem beyond the supply chains is in the just-in-time model that, in order to reduce costs, tries not to have inventory, where if any part of the system fails, this affects the whole as a whole and stops the entire supply chain, which it is what is happening with all the elements involved in a complex and interde-



pendent way.

Another factor that affects inflation, especially in the field of markets, is the turbulence of the system, which produces uncertainty and a movement out of fear, associated with two human conditions, the amygdala, and group dynamics, where man tends to move collectively in the face of a threat in the environment.

There are many interpretations about the origin and causes of inflation, one of which explains inflation as a monetary phenomenon that occurs as a result of a violation of the circulation of money; the second—as a disproportion between different sectors of the economy (supply and demand, income and spending of the state, the money supply and the needs of the economy in funds). Inflation occurs when the general level of prices rises and money depreciates... If we briefly form the main causes of inflation in the country, among them we can highlight the following:

- Excessive issuance of paper money;
- Monopolization of production;
- State budget deficit;
- Increase in internal and external public debt;
- Foreign economic factors;
- Imperfect fiscal policy;
- Disparities in social production;
- Low employment rate and relatively high unemployment rate;
- Crisis phenomena in the financial and credit system (Жовта, 2021).

As we can see, the excessive issuance of paper money during the time of the pandemic to promote and stimulate money in circulation and try to prevent companies from going bankrupt had a negative impact in the long run, the monopolization of production, in a single country, China, which caused part of the production that was only there, to go to three countries; Vietnam, India, and Mexico; to try to shorten overland supply chains. Public debt has increased in almost all countries, especially Western ones. The advantage of the US is that they can pay their debt in the currency they themselves produce; this was an advantage, until Russia, together with China, proposed selling oil and buying it without the use of the dollar. External factors are key, both in the production of energy by Spain, to try to meet part of the demand from Germany, but the crisis with Ukraine and Russia and the dependence on China, as well as the sale of energy from Latin America, and the inability to produce alternative technologies that replace silicon in solar panels, with a maximum efficiency of 30%, with the inability to produce fertilizers dependent on Russia, and Morocco for Phosphate in Mexico and Brazil. With a high unemployment rate (voluntary) with the great resignation, and with the financial system's strategy of increasing interest rates by central banks.

### 3. The Dollar Problem

As the hegemonic currency of transactions worldwide for the purchase of gold, it could be losing its position, because, until recently, you could borrow at low in-

terest rates in the financial world of economic growth. The problem is the alternative that the Ruble is representing for the purchase of oil. The growing US account deficit is one of the biggest threats, because the US government has been running massive deficits for a long time, which in principle should cause a lot of inflation and should reduce the value of the dollar and its role as international currency. Imports of goods and services exceed the value of exports, for example in 2021 the deficit was \$821.6 billion, in countries that do not save, such as the US, they borrow the surplus of savings to balance, but it generates a balance deficit of payment deficit, the Dollar has been the reference currency since the gold standard was abandoned, however at this time, the gold standard seems to be returning mainly due to the capitalization of the Ruble. During the last quarter of 2020, the Dollar has shared a 25-year drop in the global foreign exchange reserve, among other things due to the introduction of the Euro, including the Japanese yen, the pound, and now the Ruble, and obviously the cryptocurrencies that do not depend on central banks. The fact that the dollar is weakening is also an advantage for its exports in the global market, but it tends to have higher inflation which can discourage foreign investment. If the dollar weakens too much, it could generate great inflation, then interest rates are raised, which for companies and consumers will cause more expensive things, which would affect consumption, investments and economic growth, but it would also affect other world economies that depend on the dollar.

The Fed in the US maintained that the first increase in inflation was due to the increase in demand from the opening of the economy after the pandemic, and that therefore it would be a temporary phenomenon, in the same way said appreciation was shared by the governments of Europe, however they did not realize the problem based on supply chains, nor the effect of the great resignation and increase in wages, as well as the unforeseen element of the Russia-Ukraine war, such as adverse effect. The measure to lower inflation has been the use of rate hikes; however, this does not affect the supply linked as much with the supply chains; the bottleneck that involves production in only one country; China, and the war that in the short term could be representing a possible recession.

As a consequence, to have an impact on prices from the supply variable, both the US and other countries decided to release their strategic oil reserves at 240,000 barrels (International Energy Agency), and diversify energy supply chains using Argentina, Brazil, Africa and Venezuela. Part of the diversification strategy towards German industry is to do it through Spain and Portugal, especially based on the gas necessary for the generation of electricity, however a pipeline was built that would cross France but it was never finished, it is 200 kilometers away. So it cannot be transported to Germany, because at the time the French nuclear energy lobby stopped its construction. On the other hand, the Left government of Spain tried to promote sustainable energies through the investment of individuals in solar cells, however, the government itself eliminated the subsidy as well as the guarantee price, which caused those who had invested in the cells will

go bankrupt.

It could be considered that a Keynesian model could have an effect on economic activation; however this would imply investment in infrastructure. China's largest real estate company Evergrande has entered a phase of technical bankruptcy with defaults to banks, and they also have a debt of 900 billion for high-speed trains.

### 3.1. Financial Elements

For Germany, ending dependence on Russian gas would imply a recession throughout the European Union, hundreds of thousands of jobs would be lost, on the other hand, economic strategies are not having the desired effect, but they are affecting the world population, and in particular the Russian population (in sugar, hygiene products, antidepressants and medicines), if the US strategy is to think that strangling the Russian social base will create an imbalance that would have to force Putin to resign, it is not understanding the culture Russian, since in the various demonstrations thousands of demonstrators have been taken to jail; while in other countries like Peru, for example, the increase in gasoline prices has caused a curfew that has left their government reeling, but this does not work in authoritarian regimes like Russia and China, and they are generating greater union between their economies. Dependence on Germany means that in 2020 alone, 34% of crude oil, 45% of coal and 55% of natural gas were bought from Russia, Germany accounts for the purchase of 24% of all Russian gas, 54% of rest of Europe, 11% independent states and 11% Asia Pacific<sup>1</sup>; that is to say that a closure of gas and oil exports in Germany would bring problems in the supply chains, and food shortages, where it would have social consequences that could sacrifice the German government:

We can see in **Figure 4** the complex behavior of the GDP in the US, due to its initial conditions. A recession is expected between the last quarter of 2023, where unemployment in the US has a figure higher than 5%, which would be the impact of deglobalization; Regarding the credit impulse, it can be seen that:

As you can see in **Figure 5**, the world economy is going to slow down significantly, in China the GDP of services for April 6 has collapsed, therefore we have a slowing economy and a Federal Reserve raising interest rates, while that Russia cannot borrow abroad, foreign exchange reserves blocked, but can obtain resources from foreign trade surplus:

As can be seen in **Figure 6**, the Russian surplus has a positive slope; this means that the West continues to inject liquidity into the Russian economy, registering record purchases of oil from Russia in the week from March 27 to April 2, 2022, in particular by India and China who are buying cheap oil. There is no effect on the trade balance and the tax rate in Russia is 13%. China, from the covid outbreak of 2022, will have a strategy of increasing public spending, in the same way as in Spain, in the end, little growth or recession would cause social movements like in Africa because the price of food is rising, as well as in Peru,

<sup>1</sup><https://www.reuters.com/business/energy/how-dependent-is-germany-russian-gas-2022-03-08/>.

Spain, and Mexico. Considering the speculative scheme in the graph of the S&P 500, we analyze that:

Passing the Barrier of 4477 (Figure 7), speculators are waiting for the value to fall to buy, causing an increase in the algorithms in a new section, without reaching a process of monetary normalization of rate hikes, where the semiconductor sectors are in an area of positive speculation, and where the real estate sector continues to be a defensive anchored sector.

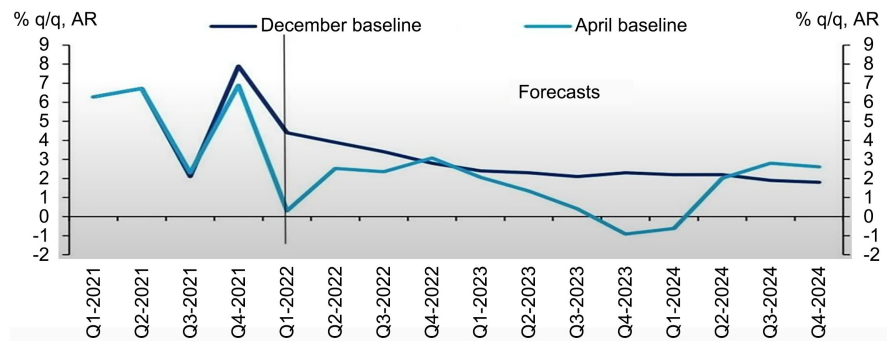


Figure 4. The Gross Domestic Product complex behavior. Source: self elaboration.

### Global Credit Impulse

This is the flow of new credit from the private sector as % of GDP

Global Credit Impulse (18 countries that represent 69.4% of global GDP share) China Credit Impulse Japan Credit Impulse  
 UK Credit Impulse US Credit Impulse Euro Area Credit Impulse

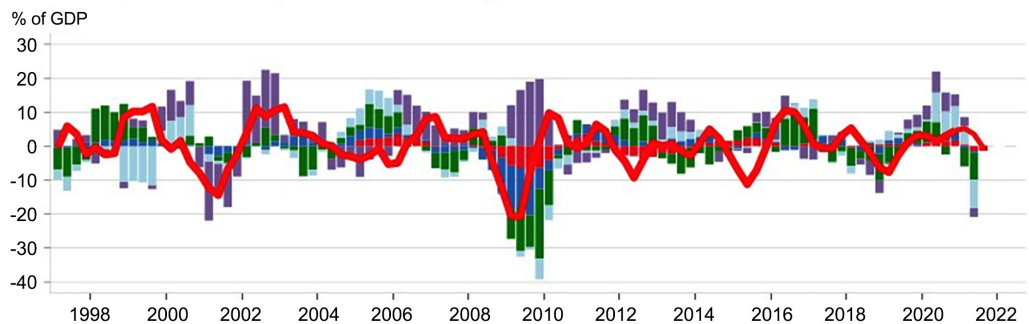


Figure 5. Global Credit Impulse compared among countries. Source: Macroban, Saxo Bank Research & Strategy.

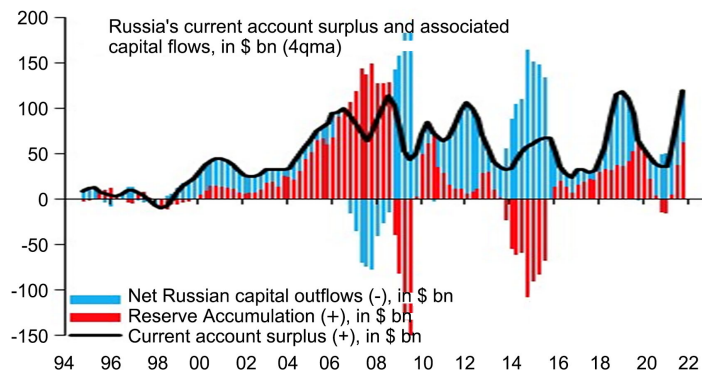


Figure 6. Changing on the surplus in capital flows complex behaviour. Source: Robin Brooks.



Figure 7. S&P 500 complex fluctuation of the market. Source: Trading View.

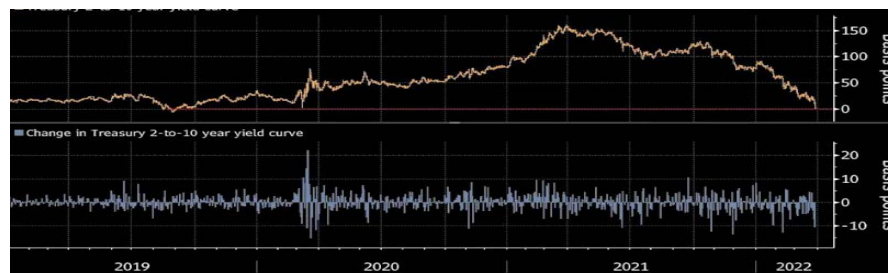


Figure 8. Inversion, 2 and 10-year yields invert, sending recession signal. Source: Bloomberg.

### 3.2. The Possible Recession that Is Coming

According to Bank of America a recession shock is looming:

“Inflation shock” worsening, “rate shock” just beginning, “recession shock” looming, BofA chief investment strategist Michael Hartnett wrote in a note to clients, adding that, in this context, cash, volatility, commodities and cryptocurrencies could outperform bonds and stocks<sup>2</sup>.

Since the yield of the 2 and 10-year bonds has caused an inversion in the curve that puts investors on alert:

As seen in **Figure 8**, when the curve at the end of the investment at 2- and 10-years inverts, this is a sign of recession.

### 4. Conclusion

We are facing a new world order that is affecting the political and social economic zones, in terms of inflation with a series of complex variable elements, such as the great resignation, war, and supply chain replenishments from the pandemic. A trend towards recession is being caused; in terms of raw materials, currencies as reserve currency, where the war is based on the hegemony of the

<sup>2</sup><https://www.forbes.com.mx/se-avicina-un-shock-de-recesion-advier-te-bofa/#:~:text=%E2%80%9CEl%20'shock%20inflacionario'%20empeora,las%20criptomonedas%20podr%C3%ADan%20tener%20un.>

Euro and the Dollar as the world's reference currency, the problem of the paradigm shift is inflation and the loss of the dollar as a reference currency for raw materials, will cause the debt crisis, the printing of currency in the US and Europe, to mean a fall in its value and higher inflation, especially in terms of exchanges greater trade in imports than in exports, and breakdown of globalization, which implies that supply chains cause higher inflation and crises, in particular because there will no longer be the capacity for low production costs in value chains and economies of scale, affecting large companies as well as small organizations and consumers. Finally, there's a complex behavior in the currencies, for example, the Mexican pesos have three factors to earn its current value against the dollar.

1) The peso finds support in the expectation that Banco de México will continue to raise its interest rate, at a rate at least equal to that of the Federal Reserve, keeping its relative monetary stance constant.

2) There is a strong demand for Mexican exports from the United States, to which are added the flows of remittances and FDI to Mexico.

3) There is a lower relative risk perception for Mexico compared to other emerging and advanced economies since the country is geographically far from the conflict in Ukraine and its main trading partner is the United States, unlike most of the relevant economies in America South, whose main trading partner is China.

And there's another strategy of the retailers, that was not contemplated with the supply chain crisis; is that before there was a shortage and therefore inflation; however, with the strategies of raising interest rates that are causing a recession, companies are reducing their inventories, for fear that people will not buy; because they have products that can spoil, they are fashionable in the case of clothes or become obsolete in the case of technologies.

## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

## References

- Arthur, W. B. (2021). Foundations of Complexity Economics. *Nature Reviews Physics*, 3, 136-145. <https://doi.org/10.1038/s42254-020-00273-3>
- Davis, J. M., Guryan, J., Hallberg, K., & Ludwig, J. (2017). *The Economics of Scale-Up*. National Bureau of Economic Research. <https://doi.org/10.3386/w23925>
- Diegel, M., & Nautz, D. (2021). Long-Term Inflation Expectations and the Transmission of Monetary Policy Shocks: Evidence from a SVAR Analysis. *Journal of Economic Dynamics and Control*, 130, Article ID: 104192. <https://doi.org/10.1016/j.jedc.2021.104192>
- Dubois, A., Hulthén, K., & Pedersen, A. C. (2004). Supply Chains and Interdependence: A Theoretical Analysis. *Journal of Purchasing and Supply management*, 10, 3-9. <https://doi.org/10.1016/j.pursup.2003.11.003>
- Guerrero, S. P., & Pérez, M. A. R. (2022). Complexity and Scarcity in Supply Chains as a

- Consequence of the Just-in-Time Model. *Religación*, 7, 1-7.  
<http://doi.org/10.46652/rgn.v7i31.881>  
<https://revista.religacion.com/index.php/religacion/article/view/881/963>
- Guerrero, S. P., Guerrero, G. J., & Pérez, M. A. R. (2021). Las organizaciones como sistemas complejos. *Política y Cultura*, No. 56, 133-151.
- Harland, C. (2021). Discontinuous Wefts: Weaving a More Interconnected Supply Chain Management Tapestry. *Journal of Supply Chain Management*, 57, 27-40.  
<https://doi.org/10.1111/jscm.12249>
- Jabeur, S. B., Khalfaoui, R., & Arfi, W. B. (2021). The Effect of Green Energy, Global Environmental Indexes, and Stock Markets in Predicting Oil Price Crashes: Evidence from Explainable Machine Learning. *Journal of Environmental Management*, 298, Article ID: 13511. <https://doi.org/10.1016/j.jenvman.2021.113511>
- Kauffmann, A. V. C., Fransosi, C. R., Kneip, E. L. T. P., Pilatti, F., Neves, S. T. R., & Penha, M. M. (2022). Saúde Mental de Caminhoneiros Brasileiros No Contexto da Pandemia de COVID-19. *TCC-Psicologia*.
- Kholoshyn, I., Mantulenko, S., Joyce, A. S., Sherick, D., Uvaliev, T., & Vedmitska, V. (2021). Geography of Agricultural Exports from Ukraine. *E3S Web of Conferences*, 280, Article 11009. <https://doi.org/10.31812/123456789/4618>
- Maguire, S., McKelvey, B., Mirabeau, L., & Öztas, N. (2006). Complexity Science and Organization Studies. In: S. R. Clegg, C. Hardy, T. B. Lawrence, & W. R. Nord (Eds.), *The SAGE Handbook of Organization Studies* (pp. 165-214). SAGE Publications.  
<https://doi.org/10.4135/9781848608030.n6>
- Orviz-Martínez, N., Botey-Fullat, M., & Arce-García, S. (2021). Analysis of Burnout and Psychosocial Factors in Grassroot Football Referees. *International Journal of Environmental Research and Public Health*, 18, Article No. 1111.  
<https://doi.org/10.3390/ijerph18031111>
- Papava, V. (2022). The Underproduction Inflation—An Acute Challenge for the Post-Pandemic World. *Eurasia Review*.
- Roach, S. S. (2022). *The Fed Is Playing with Fire*. Project Syndicate.  
<https://www.project-syndicate.org/commentary/federal-reserve-mad-scramble-to-control-inflation-by-stephen-s-roach-2022-01>
- Rogoff, K. (2021). *Are Inflation Fears Justified?* Project Syndicate.  
<https://www.project-syndicate.org/commentary/long-term-inflation-risks-central-banks-globalization-by-kenneth-rogoff-2021-03?barrier=accesspaylog>
- Saleem, I., Maqsood, M. A., ur Rehman, M. Z., Aziz, T., Bhatti, I. A., & Ali, S. (2021). Potassium Ferrite Nanoparticles on DAP to Formulate Slow Release Fertilizer with Auxiliary Nutrients. *Ecotoxicology and Environmental Safety*, 215, Article ID: 112148.  
<https://doi.org/10.1016/j.ecoenv.2021.112148>
- Shen, Z. M., & Sun, Y. (2021). Strengthening Supply Chain Resilience during COVID-19: A Case Study of JD.com. *Journal of Operations Management*.  
<https://doi.org/10.1002/joom.1161>
- Sull, D., Sull, C., & Zweig, B. (2022). Toxic Culture Is Driving the Great Resignation. *MIT Sloan Management Review*.
- Tang, Q., Tong, Z., & Yang, Y. (2021). Large Portfolio Losses in a Turbulent Market. *European Journal of Operational Research*, 292, 755-769.  
<https://doi.org/10.1016/j.ejor.2020.10.043>
- Turvey, R. (2022). *Interest Rates and Asset Prices*. Routledge.  
<https://doi.org/10.4324/9781003283317>

Yuan, H., Wang, Z., Shi, Y., & Hao, J. (2022). A Dissipative Structure Theory-Based Investigation of a Construction and Demolition Waste Minimization System in China. *Journal of Environmental Planning and Management*, 65, 514-535.

<https://doi.org/10.1080/09640568.2021.1889484>

Жовта, Н. А., & Тішечкіна, К. В. (2021). *Inflation: Essence, Causes and Consequences*. Редакційна колегія.

<http://dspace.mnau.edu.ua/jspui/bitstream/123456789/9988/1/64-67.pdf>