

The Impact of the COVID-19 Pandemic on Global Food Prices: An Analytical Review Based on FAO Reports (2020–2021)

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Abstract:

The COVID-19 pandemic has significantly reshaped the global economic and social landscape, with over 3.5 million confirmed cases. The world entered a state of lockdown, halting substantial portions of economic activity and revealing severe forms of recession, such as job losses, bankruptcies, and disruptions to education. This article aims to explore the broad economic and social repercussions of this unprecedented crisis. Additionally, it examines the impact of the pandemic on global food prices by analyzing key reports from the Food and Agriculture Organization of the United Nations. Findings indicate that while food prices declined during certain periods due to reduced demand, they remained relatively stable overall.

Keywords: Corona crises-19, International prices food, economic ramifications, social consequences.

Jel Classification Codes: E2, I15, T1.

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1. Introduction:

Since December 2019, the world has lived under the specter of the COVID-19 pandemic, this situation is exceptional in various aspects and inevitably constitutes a major turning point in the history of all humanity, not only it is dangerous to human health, but it has serious effects on the economic, social and political levels as well, as it is known, the dangers of epidemics and diseases have raised many questions and problems throughout the ages, this is precisely what the COVID-19 pandemic has reignited on a global scale.

which has directly affected international human, commercial and political transactions, food and access to it have played a clear role in imagining the extent of the impact of the Corona crisis on our societies, especially with images of empty supermarket shelves appearing in the mainstream media, and in light of the uncertainty of the end of the outbreak of this epidemic that will continue to threaten the global food supply chain, this poses a major threat to food security and nutrition around the world, especially those who were already suffering from famine and malnutrition, and given that there is currently no evidence of transmission of the Corona virus through food and food packaging, in light of the limited discussion of this issue and its possible future effects and scenarios, we decided in this study to address part of this issue, which relates to food supply chains, by addressing the following problem:

How has the Corona virus crisis affected food prices in the world?

1-1-Research Hypotheses:

- The COVID-19 has been a health crisis with global economic and social impacts.
- The COVID-19 crisis has greatly affected food prices in the world.

1-2 Objectives of the Study:

- To define the COVID-19 pandemic as one of the most dangerous events in modern human history.
- To identify how the crisis has impacted several sectors in both the economic and social fields.

- To assess the extent of the impact of the COVID-19 pandemic on global food costs.

1.3 Methodology:

The study utilized a descriptive approach to examine the diverse economic and social repercussions of the COVID-19 pandemic, and to analyze how international organizations responded to it as a global health emergency. Additionally, an inductive approach was employed to derive key findings from reports issued by these organizations, particularly those from the Food and Agriculture Organization of the United Nations (FAO).

This analysis **focuses** on the following themes:

- **Theme 1:** Economic repercussions of the COVID-19 crisis.
- **Theme 2:** Social impacts of the COVID-19 crisis.
- **Theme 3:** The effect of the COVID-19 pandemic on global food costs.

1.4 Previous studies:

Through our review of previous studies, we find a wide range of academic research that focused on the COVID-19 pandemic in general. Most of these studies incorporated the crisis of the novel COVID-19 pandemic within the context of the economy, including the following:

- **Study for (El Yomin Saada,2021) entitled: Repercussions of the emerging corona virus pandemic on the global economy: Effects on the most important economic sectors and ways to confront:**

This study aims to identify the repercussions of the Covid-19 pandemic on the global economy. To achieve this objective, we relied on the descriptive analytical approach in presenting and analyzing the reality of some basic economic sectors at the global economy level before and after the outbreak of the Corona pandemic. The study concluded that the Covid-19 pandemic led to an unprecedented recession in the global economy since World War II; the tourism sector as well as the labor market sector was among the most affected economic sectors. Furthermore, the study showed that there are many economic sectors that have known Great recovery, led by the manufacturing sector, because of easing the closure procedures and

some other measures taken by many governments and international economic organizations to limit the economic effects of the pandemic.

- **Study for (Miloud Benkhaira,Tayeb Saida 2020) entitled:The Impact of the COVID-19 Pandemic on the Global Economy:**

The world is experiencing the consequences of the spread of the Corona virus, which affected various sectors, causing a major shock to the global economy, which may indeed lead to a sharp turn in global growth rates for 2020. This is not the first supply shock in the world. Oil shocks of the 1970s, the tsunami of Thailand, the earth quake in Japan in 2011 and others, but all of these shocks and crises had a specific geographical scope without physical expansion, as well as a time frame during which it peaked and then ceased; however, the Corona virus proved to be uncontrollable, as it spreads throughout the world and has an impact on most economies. There is also no clear time frame during which this epidemic, like other crises in the world, where we have shown in this research paper the effects of the Covid-19 virus on the global economy; this is by virtue of the fact that it has caused panic and volatility in the economies of the countries.

- **Study for (Assia Atil, Bouchra Mahfoud 2021) entitled:Forecasting WTI Crude Oil Futures Prices during the COVID-19Pandemic: Application of GARCH Model:**

This study attempts to focus on forecasting West Texas Intermediate (WTI) crude oil futures price changes under the effect of external shocks, namely the COVID-19 pandemic; whose quick and widespread spread has affected global demand, by utilizing time series data. This paper used the Generalized Autoregressive Conditional Heteroscedasticity (GARCH) model to measure the volatility and the asymmetric effects of these shocks. The analysis found that the optimum model for forecasting WTI crude oil futures prices is the TGARCH (1.1) with student distribution. The findings of the out-of-sample forecast revealed that Crude Oil Futures prices are steady with tiny deviations; however, the variance forecast series showed important variations during the out of the sample period.

- **Study for (HADJAR Assia, NEMER Rabiha 2022)entitled:COVID-19 AND THE DEVELOPMENT OF E-MARKETING, THE CASE OF SOCIAL NETWORKS:**

study is based on the influence of covid-19 on E-marketing and social networks, including Facebook.

To determine the impact of the pandemic, the study was divided into five areas: Internet and marketing, E-marketing, electronic marketing mix,social networks and finally the use of Facebook during containment.

2. Economic Repercussions of the COVID-19 Crisis:

An analytical study conducted by the United Nations Conference on Trade and Development (UNCTAD) concluded that the shock caused by the COVID-19 pandemic would result in economic recession in certain countries, reducing global annual growth to below 2.5% for the year. In the worst-case scenario, the global economy may experience an income deficit amounting to \$2 trillion (United Nations, 2020).Below, we outline the effects of the COVID-19 pandemic on key economic variables and sectors:

2-1. The Impact of the COVID-19 Pandemic on Oil Prices:

Oil prices have suffered a sharp decline since the beginning of the quarantine and closure measures, due to several factors (Al Jazeera, 2020).

First factor: The state of panic gripping the world due to the renewed COVID-19 pandemic. As we observe a decline in export volumes from China, reduced global industrial activity, widespread quarantines, and thousands of people being isolated, all of this has led to a significant portion of the population being unable to go to work, resulting in decreased economic activity.

Second factor: The nature of the global financial market, which does not tolerate fear and uncertainty, and operates on the logic of “sell now, ask questions later.” We are currently facing an exceptional situation that emerged from outside the financial markets, and people are unable to assess it accurately, as we still do not know the extent of the losses that will be caused by the COVID-19 pandemic, nor the number of people who will be affected by it.

The third factor: It is what is happening in the oil market and the decline in its prices, which we would have viewed as a positive thing for the

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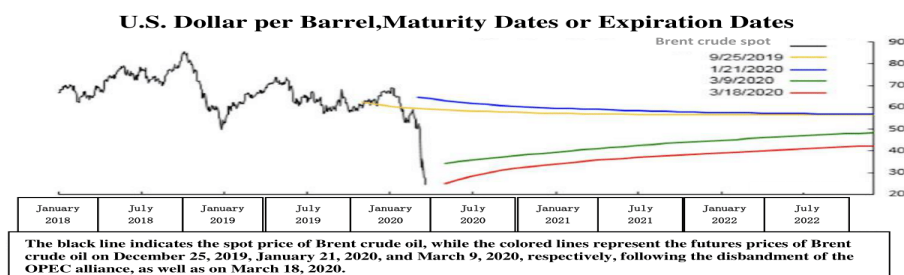
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consumer.

But now the situation is different, because there is a decline in demand for oil due to the cessation of travel, and industrial companies will decline in their activities, and thus the volume of need for oil will decrease. This means that lower prices will not play a stimulating role in increasing oil demand, and therefore a decline in oil prices in these particular circumstances will shake confidence in the financial and energy markets.

When the Kingdom of Saudi Arabia enters into a price war with Russia, and the price of a barrel of oil falls below thirty dollars, this means that American shale production companies will produce at a loss. These companies have a large size in the local market, and they are now on the list of oil exporters more than Saudi Arabia, but they have huge debts. That is why people will ask: if these companies sell at a loss, will they be able to repay their debts? This will lead to a crisis in the bond market, especially in the American energy sector. What we know is that such crises have a contagion effect on other economic sectors, especially if investors begin to withdraw their money from the bond market. (Al Jazeera, 2020).

Figure 01: Stages of development of the price of a barrel of oil for the second semester of 2020.



Source: Rabah Arezki, Ha Nguyen, 2020, Dealing with a Double Shock: The Corona Pandemic and Low Oil Prices, World Bank, Retrieved from

The dual shocks of the outbreak of the epidemic and the collapse of oil prices overlap, but one is different from the other. On the one hand, the demand component of the oil shock is linked to the sharp decline in oil

consumption as a result of precautionary measures to stop the spread of the virus, including the closure of cities, which has brought economic activity to a halt around the world.

According to Norwegian research company Rystad Energy, the 10% drop in oil consumption from 2019, or about 10 million barrels per day, is the result of reduced air and road travel.

While the depth and duration of the pandemic shock are uncertain, it is expected to be short-lived. Indeed, the severity of the shock sparked unprecedented local measures in developed and developing countries, and it is hoped that the inevitable global coordination to eliminate the virus will prevail. (Ha and Rabah, 2020)

2-2 Tourism Sector: The COVID-19 pandemic significantly affected the aviation sector, which is one of the vital industries with considerable economic importance. Most countries around the world closed their borders to limit its spread, resulting in substantial economic losses that led to the bankruptcy of many airlines (Fouzia Laxi,202).International tourism has faced significant challenges in the past, such as in 2003 during the outbreak of Severe Acute Respiratory Syndrome (SARS), the Iraq War, and in 2009 amidst the global economic and financial crisis. However, the sector demonstrated resilience, quickly recovering in subsequent years.

In contrast, the tourism industry has emerged as one of the hardest-hit sectors during the COVID-19 pandemic. The impacts have been evident on both the supply and demand for travel, particularly in China, the world's leading export market in terms of spending, and in other major Asian and European destinations, such as Italy.

Travel restrictions, flight cancellations, and reduced flight frequencies have led to a sharp contraction in the supply of travel services, both domestic and international, while the demand for travel has also declined significantly. To curb the spread of the virus and manage the rising number of infections and fatalities, governments implemented measures such as closing transportation networks, halting air, land, and sea traffic, and shutting down border crossings. These actions resulted in a complete disruption of tourism activities. The stagnation in the tourism sector, deemed the most affected by the COVID-19 crisis, had a cascading effect on related industries, including

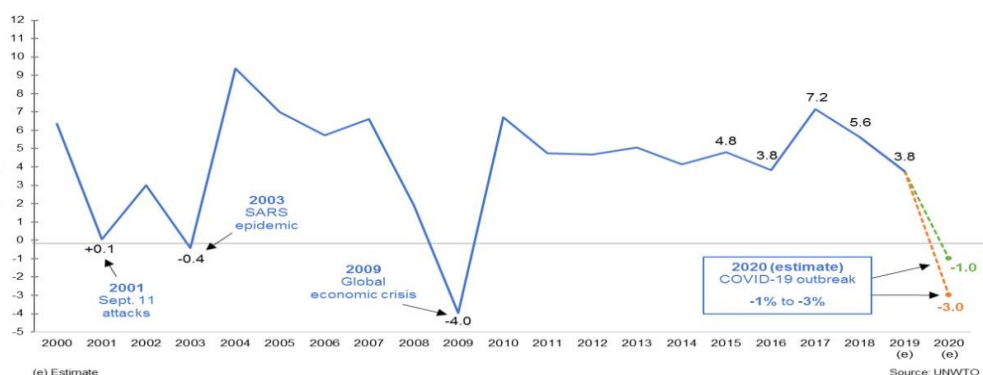
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restaurants, service companies, and hospitality institutions. As a critical source of revenue through taxes and fees, the decline in tourism significantly impacted national economies. Additionally, the sector's role in bolstering countries' foreign currency reserves was severely diminished.

A study by the World Tourism Organization highlighted that the number of international tourists may decline in 2020 at the global level due to the COVID-19 pandemic, by a rate ranging between 1% and 3%, instead of a growth ranging between 3% and 4%, as was expected in early January. This would lead to a loss of between 30 and 50 billion dollars, and the following figure shows this: (World Tourism Organization, 2020).

Figure 02: Forecast for International Tourism Arrivals (Percentage Change)



Source: UNWTO, Assessing the impact of the COVID-19 outbreak on international tourism, 5 March 2020

2-3. The Impact of the COVID-19 crisis on the growth of global gross domestic product:

Estimates for global growth in 2020 vary significantly, ranging from a decline of 8.8% (WTO) to a slight increase of 1% (UNESCAP), as illustrated in Figure 04. Among these projections, the International Monetary Fund (IMF) is considered a key reference for evaluating the economic impact of the COVID-19 crisis. According to the IMF, global economic growth is expected to shrink by 4.2%, marking a 7% difference compared to pre-pandemic forecasts.. (Nicola Cantore, 2020).

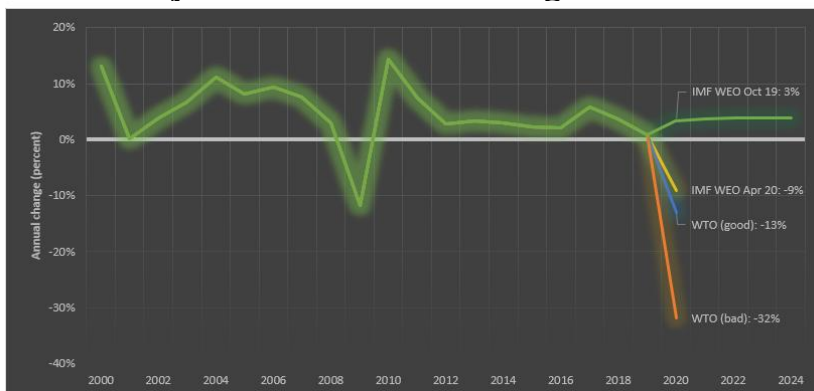
Figure 03: Global Economic Growth Projections: Recent Estimates from Various Organization



Source: UNIDO elaboration based on Oxford Economics (2020), IMF (2019, 2020a), UNDESA (2020) and WTO (2020)

The rising numbers of COVID-19 infections and fatalities resulted in widespread disruptions to commercial activities across numerous countries. This imbalance caused revenues to decline while operational expenses persisted. As a consequence, the World Trade Organization (WTO) projected that global trade volumes would shrink by as much as 32%, while the International Monetary Fund (IMF) estimated a decline of 9% in 2020, as depicted in Figure 2. Additionally, capital flows have increasingly shifted towards advanced economies, further impacting trade and investment dynamics. (Nicola Cantore, 2020).

Figure 04: Yearly Variation in Global Trade Volume: Updated Projections from Various Organizations



Source: UNIDO elaboration based on Oxford Economics (2020), IMF (2019, 2020a), UNDESA (2020) and WTO (2020)

3. Theme 02: Social Effects of the COVID-19 Crisis

3-1. Increased Unemployment Rates:

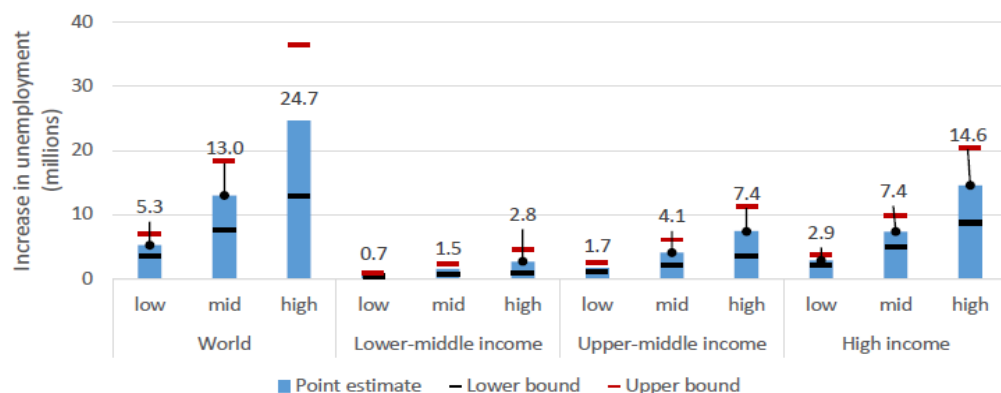
A large number of economic sectors have laid off their employees, although countries allocated direct financial support to companies to retain their workers by reducing or deferring taxes, or by providing soft loans to help pay part of the wages.

States were sometimes forced to cover a portion of these salaries, and social security funds contributed to paying a share as well. Despite all these measures, many companies still laid off employees due to halted operations or loss of liquidity.

The problem was exacerbated by the loss of jobs among freelance workers, daily wage earners, temporary workers, and those in informal employment, which increased the severity of unemployment in societies and led to its unprecedented rise.

A study by the International Labor Organization indicates that approximately 25 million jobs worldwide are at risk of being lost as a result of the outbreak of the COVID-19 crisis, stressing that its impact on employment and work globally will be long-term. (ILO, 2020)

Figure 05: The impact of declining global growth on unemployment based on three global scenarios and income groups (million)



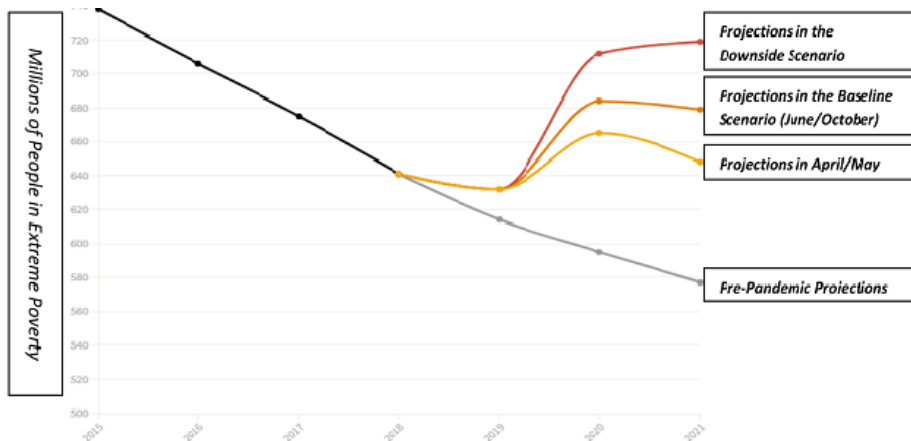
Source: international labor organization, COVID-19 and the world of work: Impact and policy responses, ILO monitor 1st edition, 18 march 2020, p 4.

Preliminary estimates from the International Labor Organization (ILO) highlight a significant surge in unemployment due to the pandemic. Based on various scenarios assessing the impact of COVID-19 on global GDP growth, the ILO projects an increase in global unemployment ranging from 5.3 million ("low" scenario) to 24.7 million ("high" scenario) above the baseline of 188 million in 2019. Under the "medium" scenario, unemployment is expected to rise by 13 million, including 7.4 million in high-income countries. While these projections remain uncertain, all scenarios point to a substantial increase in unemployment worldwide. For context, the global financial crisis of 2008–2009 led to an increase of 22 million unemployed individuals (ILO, 2020).

3-2 Poverty

Various organizations estimate that between 40 and 60 million people may fall into extreme poverty (United Nations, 2020) due to the economic shocks caused by the COVID-19 pandemic. Factors such as prolonged lockdowns and the significant economic costs of the pandemic have contributed to worsening poverty rates. Consequently, projections of the pandemic's impact on global poverty have shifted. Figure 06 illustrates the anticipated changes in global GDP based on estimates from the World Bank and the International Monetary Fund, shedding light on the corresponding shifts in poverty rates.

Figure 06: The Impact of the COVID-19 pandemic on Extreme Poverty Worldwide



Source: Akner et al. (2020), Poverty Statistics Network, World Economic Prospects

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The extreme poverty rate is defined as the percentage of individuals living on less than \$1.90 per person per day. Using updated growth projections from the June *World Economic Prospects* report, we can refine estimates of how the COVID-19 pandemic has impacted global poverty. These projections are based on two scenarios: a baseline scenario and a deterioration scenario.

The baseline scenario assumes that the virus's spread remains at anticipated levels and economic activity rebounds later in the year. In contrast, the deterioration scenario assumes a prolonged outbreak, requiring countries to maintain or reinstate strict lockdown measures.

Under the second scenario, the most vulnerable businesses would shut down, impoverished households would drastically reduce consumption, and many low- and middle-income nations would face intense financial strain.

In the baseline scenario, global economic growth is projected to contract by 5% in 2020, while the deterioration scenario predicts an 8% contraction. Accordingly, the baseline scenario suggests that 71 million people could fall into extreme poverty, defined by the \$1.90 daily poverty line. Under the worsening conditions scenario, this figure could rise to 100 million (Daniel Gerszon Mahler, 2020).

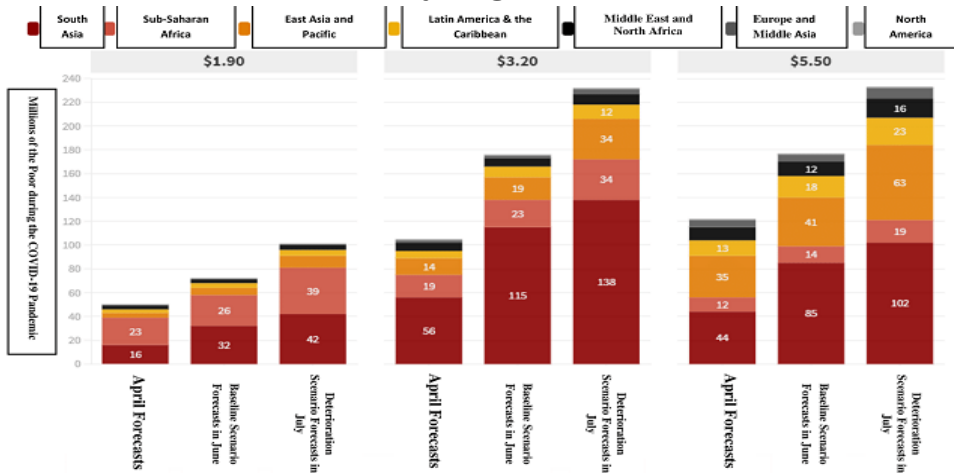
When higher poverty thresholds are applied, the regional distribution of those entering poverty shifts notably.

For instance, at the \$3.20 per person per day poverty line, 176 million people are expected to fall into poverty under the baseline scenario, with two-thirds of this population located in South Asia.

At the \$5.50 per person per day threshold, 177 million people are projected to slide into poverty, with most of the newly poor concentrated in East Asia and the Pacific.

In contrast, only a small proportion is found in sub-Saharan Africa, where fewer individuals live at this income level.

Figure 07: The Distribution of the Poor Due to the COVID-19 pandemic, by Region



Source: <https://blogs.worldbank.org/ar/opendata/updated-estimates-impact-covid-19-global-poverty>

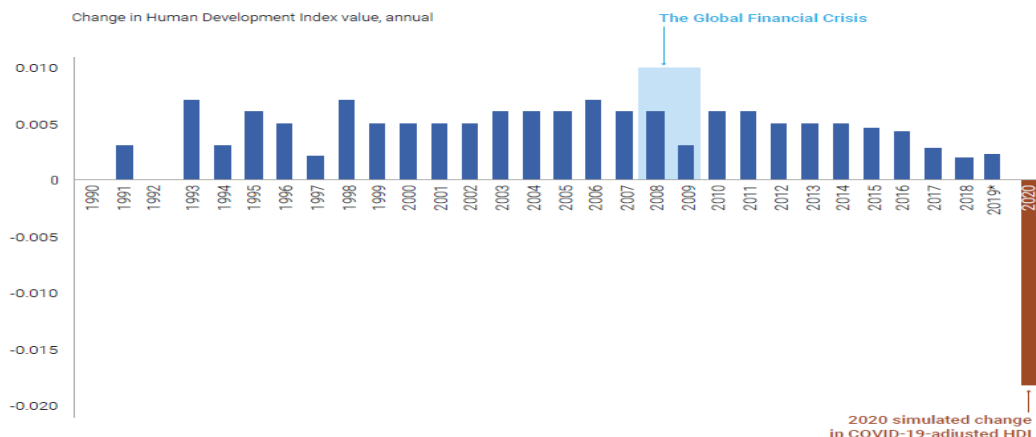
3-3 Human Development:

The COVID-19 crisis highlighted the unsustainability of the pre-pandemic development model, as the social and economic repercussions of the crisis were exacerbated by existing vulnerabilities and inequalities. Addressing these challenges is essential to building a more resilient future aligned with the principles of human-centered sustainable development. The recovery path from the pandemic involves establishing a new, fair, and equitable social contract grounded in human rights between governments and their citizens. This includes advocating for extensive social safety nets, universal health coverage, and cost-effective solutions as part of the new normal. Effective global cooperation and solidarity are vital for a robust response. Nations and communities must invest significantly in enhancing their capacities to adapt rapidly, manage risks effectively, and implement innovative solutions to create a better and more sustainable future. (United Nation, 2020).

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Figure 08: Human development faces an unprecedented blow since the concept was implemented in 1990.



Source : Human Development Reports, COVID-19 and Human Development: Assessing the Crisis, Envisioning the Recovery, United Nations Development Programmers

4: The impact of the Corona

4-1 Impact of the Crisis on Food Prices

Food commodity prices experienced a significant surge during the last quarter of 2019, driven by panic buying and strict lockdown measures. However, they witnessed a slight decline in the first quarter of 2020 due to their relatively inelastic demand. This indicates that the future impact on demand is expected to be less pronounced compared to the relative increase in prices. Below, we present the food price forecast bulletin issued by the Food and Agriculture Organization (FAO) in its latest publication, highlighting the projected impact on food prices.: (FAO, 2021).

FAO Food Price Index Trends (January 2021):

The FAO Food Price Index reached an average of 113.3 points in January 2021, marking an increase of 4.7 points (4.3%) compared to December 2020. This rise represents the eighth consecutive monthly increase and the highest level since July 2014. The growth was primarily driven by significant increases in the sub-indices for sugar, grains, and vegetable oils, while moderate increases were observed in the meat and dairy sectors.

Cereal Price Trends:

The FAO Cereal Price Index averaged 124.2 points in January 2021, an increase of 8.3 points (7.1%) compared to December. This marks the

seventh consecutive monthly rise. International corn prices saw a notable 11.2% increase in January, which translates to a 42.3% rise from January 2020 levels, indicating tightening global supplies due to lower-than-expected production and stocks in the United States and large purchases by China. Concerns about drought in South America and Argentina's temporary suspension of maize export registrations further pushed corn prices to their highest since mid-2013.

Barley prices also rose by 6.9%, driven by strong demand and higher prices for maize, wheat, and soybeans. Sorghum prices remained stable, while wheat prices increased by 6.8%, influenced by rising corn prices, heightened global demand, and anticipated reduced exports from Russia due to higher export duties starting March 2021. Rice export prices remained elevated due to robust demand from Asian and African buyers, coupled with declining supplies in Thailand and Vietnam.

Vegetable Oil Price Trends:

The FAO Vegetable Oil Price Index averaged 138.8 points in January, up by 7.7 points (5.8%) from December, reaching its highest level since May 2012. This increase was driven by rising prices for palm, soybean, and sunflower oils. Palm oil production in Indonesia and Malaysia fell below expectations due to heavy rains and labor shortages in Malaysia. Soybean oil prices also rose for the eighth consecutive month due to limited export supplies and labor strikes in Argentina, while sunflower oil prices increased due to a sharp decline in global sunflower crop yields during the 2020/2021 season.

Dairy Price Trends:

The FAO Dairy Price Index averaged 111.0 points in January, an increase of 1.7 points (1.6%) from December 2020 and 7.1 points (6.9%) higher than January 2020. Butter and whole milk powder prices rose due to strong purchases by China ahead of the Lunar New Year and reduced seasonal export supplies from New Zealand. Skim milk powder prices also increased due to heightened demand and reduced production in Western Europe, while cheese prices experienced a slight decline due to limited sales in Europe and inventory build up in the United States.

Meat Price Trends:

The FAO Meat Price Index averaged 96.0 points in January, up by 0.9 points (1.0%) from December 2020, marking the fourth consecutive monthly increase. However, the index remained 7.6 points (7.3%) lower than January 2020 levels. Poultry prices saw the largest increase,

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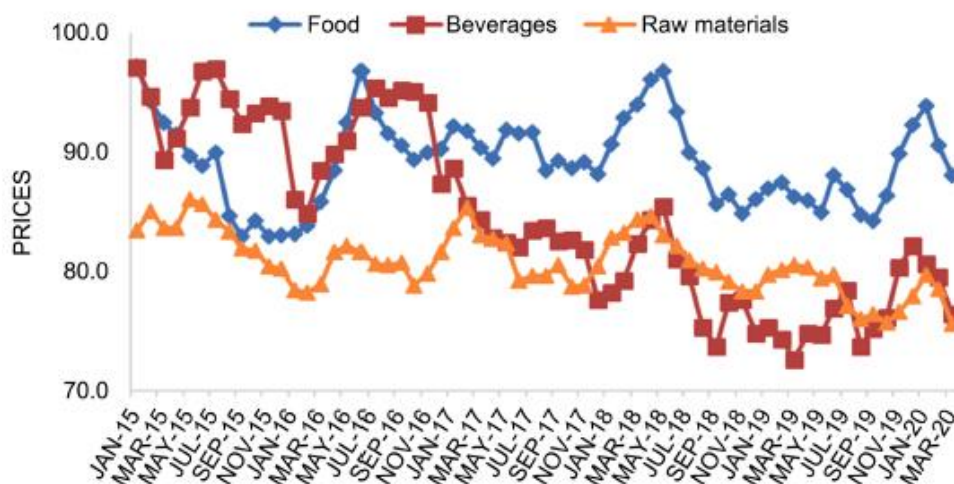
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particularly from Brazil, due to recovering global demand despite export restrictions caused by bird flu outbreaks in several European countries. Pork and beef prices increased slightly as global supplies were sufficient to meet demand, while lamb prices remained stable due to lower supplies from Oceania and higher demand from China.

Sugar Price Trends:

The FAO Sugar Price Index averaged 94.2 points in January, up by 7 points (8.1%) from December 2020, reaching its highest level since May 2017. The rise was largely attributed to concerns about reduced global supply during the 2020/2021 season due to poor crop forecasts in the European Union, Russia, and Thailand, along with unusually dry weather in South America. Additional support came from rising crude oil prices and the appreciation of the Brazilian real, impacting exports from Brazil, the world's largest sugar exporter. Meanwhile, large exportable supplies from India, supported by government subsidies, slightly eased the upward pressure on prices.

Figure 09: The Trend of Commodity Prices before and During the COVID-19 Crisis



Source : World Bank Group (2020). Commodity Markets Outlook, April (pp. 1-100). Washington, DC: World Bank .

Table 10: Food and Agriculture Organization food commodity price index.FAO food price indicators.

Years	Food price Index	1- Meat	2- Dairy products	3- Cereals	4- Oils and fats	5- Sugar
2003	57,8	58,3	54,5	59,4	62,6	43,9
2004	65,5	67,6	69,8	64,0	69,6	44,3
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	94,2	76,9	122,4	100,9	107,3	62,4
2008	117,5	90,2	132,3	137,6	141,0	79,2
2009	91,7	81,2	91,4	97,2	94,4	112,2
2010	106,7	91,0	111,9	107,5	121,9	131,7
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	93,1	96,7	87,1	95,9	90,0	83,2
2016	91,9	91,0	82,6	88,3	99,1	111,6
2017	98,0	97,7	108,0	91,0	101,9	99,1
2018	95,9	94,9	107,3	100,6	87,8	77,4
2019	95,0	100,0	102,8	96,4	83,3	78,6
2020	98,0	95,6	101,8	102,7	99,4	79,5
2020 January	102,5	103,6	103,8	100,5	108,7	87,5
February	99,4	100,5	102,9	99,4	97,6	91,4
March	95,1	99,4	101,5	97,7	85,5	73,9
April	92,4	96,9	95,8	99,3	81,2	63,2
May	91,0	95,4	94,4	97,5	77,8	67,8
June	93,1	94,8	98,3	96,7	86,6	74,9
July	94,0	92,2	102,0	96,9	93,2	76,0
August	95,8	92,2	102,1	99,0	98,7	81,1
September	97,9	91,5	102,2	104,0	104,6	79,0
October	101,2	91,8	104,3	111,6	106,4	84,7
November	105,4	93,3	105,4	114,4	121,9	87,5
December	108,6	95,1	109,3	115,9	131,1	87,1
2021 January	113,3	96,0	111,0	124,2	138,8	94,2

Source: Food and Agriculture Organization of the United Nations, 2021, State of food in the world, FAO Food Price Index

4-2. Food Price Index

The Food Price Index is an average of the indices of five major commodity groups mentioned earlier. It is calculated based on export-weighted averages for the period 2014–2016. This index includes 95 price quotations selected by commodity specialists at the Food and Agriculture Organization (FAO), representing global food commodity prices. Each sub-index is a weighted average of prices for the items within its group, with the base price derived from the 2014–2016 average rates.

4-3. Meat Price Index

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The Meat Price Index is derived from an average of 35 price points for exports across four types of meat (sheep, pig, poultry, and beef) from 10 representative markets. Export unit values for each type of meat are calculated based on their trade volumes in the respective markets. These types are then weighted according to their global export trade ratios during 2014–2016. Prices for the most recent two months may include forecasts and are subject to revision.

4-4. Dairy Price Index

This index is based on eight price quotations covering four dairy products (butter, cheese, skim milk powder, and whole milk powder) from two representative markets. The prices for each product are weighted according to their trade volumes in the respective markets. Dairy products are further aggregated using their average export trade ratios for the period 2014–2016.

4-5. Grain Price Index

The Grain Price Index is compiled using the International Grains Council indices for wheat (average of 10 quotes), maize (average of four quotes), and barley (average of five quotes). It also includes a single quotation for sorghum exports and the FAO's all-rice price index. The FAO rice index is calculated from 21 export price quotations grouped into four categories: Indica, Aromatic, Japonica, and glutinous rice. Within each category, simple averages of relevant prices are calculated, weighted by trade ratios for 2014–2019. The overall cereal price index combines the weighted prices of wheat, maize, barley, sorghum, and rice, based on trade ratios from 2014–2016.

4-6. Vegetable Oil Price Index

The Vegetable Oil Price Index is an average of 10 different oils. It is calculated using export trade ratios for each oil product, based on data from the period 2014–2016.

4-7. Sugar Price Index

The Sugar Price Index is based on international agreements for sugar prices, using data from the base period 2014–2016.

5. Conclusion:

The outbreak of the COVID-19 pandemic brought the global economy to a standstill, disrupting production, supply chains, and air transportation worldwide. It diminished global demand, isolated nations, imposed quarantines, curfews, and flight bans, and caused significant losses across various sectors, including finance, aviation, transportation, and tourism.

The sudden economic upheaval caused by the emergence of the COVID-19 pandemic significantly impacted numerous sectors, with the travel industry serving as a prominent example of the economic losses endured.

Concerns over the spread of infection via air travel, coupled with countries closing their borders, dealt a severe blow to this sector. Airlines responded by suspending flights—a decision that negatively affected related industries such as tourism and trade in goods and services. Additionally, layoffs within the aviation sector contributed to rising poverty and unemployment rates, supporting the study's first hypothesis.

Furthermore, the pandemic caused substantial disruptions to global food supply chains and heightened concerns about food security. However, despite these challenges, global food markets managed to maintain a healthy supply and balance.

This conclusion is supported by the findings of this research, from which the following results were derived:

- Despite the generally positive outlook for the global food market, extended lockdowns, disruptions to global transportation logistics, and hoarding practices could potentially impact global food availability and prices.
- Local challenges stemming from logistical issues have affected the functioning of food supply chains in certain markets but are unlikely to have a substantial impact on global food markets overall.
- The Food and Agriculture Organization (FAO) projects a safe cereal stock ratio by the end of 2020.
- The FAO Food Price Index reached an average of 113.3 points in January 2021, marking not only the highest level for that year but also the highest since July 2014, despite having been at 102.5 points in January 2020.
- Food prices saw a decline from March to June 2020 due to the contraction in demand associated with the widespread escalation of the pandemic.
- Overall, food prices during 2020 were generally stable or showed a tendency to decline.
- Based on these findings, the second hypothesis is refuted.

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Suggestions and Recommendations:

- **Strengthen Global Supply Chains:** Governments and international organizations should collaborate to ensure resilience in global food supply chains during crises, focusing on mitigating the impact of transportation and logistical disruptions.
- **Examine Consumer Behavior:** A deeper analysis of changes in consumer demand during crises could help forecast future trends in food prices and consumption patterns.

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