

# Main changes in food trade in Europe and the world under COVID-19 restriction

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*Abstract: The COVID-19 cuts have caused a general decline not only in international trade but also in world trade in food. One measure of competitiveness is the Balassa index, which this research uses to examine how these measures have evolved for China, one of the largest producers and exporters. A trend function constructed from data prior to COVID-19 predicted how these measures would have evolved in the absence of a downturn. In comparison, Chinese exports of foodstuffs have fallen significantly. So has its competitiveness. What happened? What is the background to this? Which areas have been more affected? What has been done to address this? The study looks at this.*

*Keywords: COVID-19, food trade, China*

## 1 Introduction

The epidemic, known as COVID-19, has spread to many countries since 2020 and has affected societies, people and daily life in many areas of life. As of 2 May 2023, more than 687 million cases of COVID-19 have been reported across the globe, and almost 6.87 million people have died from the disease or its complications. The impacts have affected many areas, so the COVID-19 cuts have had a serious impact on the global economy and on the financial lives of individuals, the buck system. And the restrictions put in place to slow the spread of the disease have had a major and negative impact on the lives of billions of people (Elflein, 2023).

In the figure 1. increasing confirmed cases are seen from 2020 and 2022. Fortunately, from 2023 there is a decrease in cases number. In the aspect of cases the most critical year was 2022, but parallelly in this year the restrictions were withdrawn.

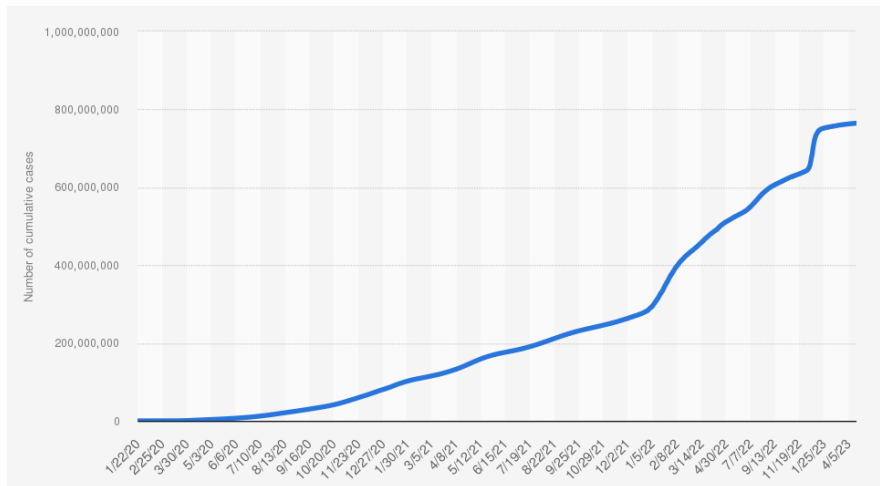


Figure 1  
 Cumulative confirmed COVID-19 cases Source: ourworldindata

After a brief general description, let's focus on China. The official case numbers in the country remained stagnant for a long time (Figure 2). This could be due to either the statistics not being realistic or to the fact that China's tightening restrictions were successful and then the case numbers increased significantly when the restrictions were lifted.

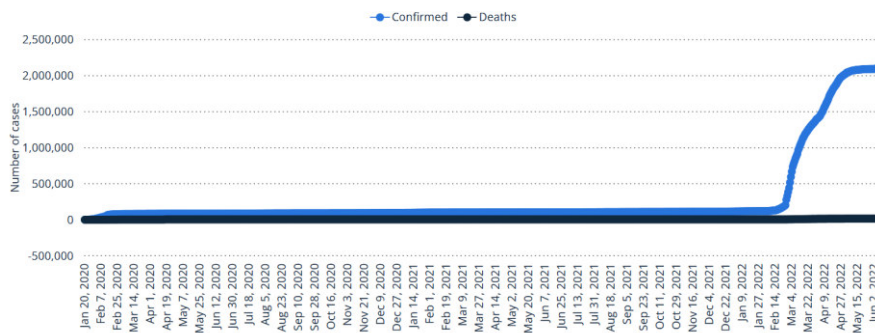


Figure 2  
 Cumulative confirmed COVID-19 cases in China Source: Chinese Center for Disease Control and Prevention

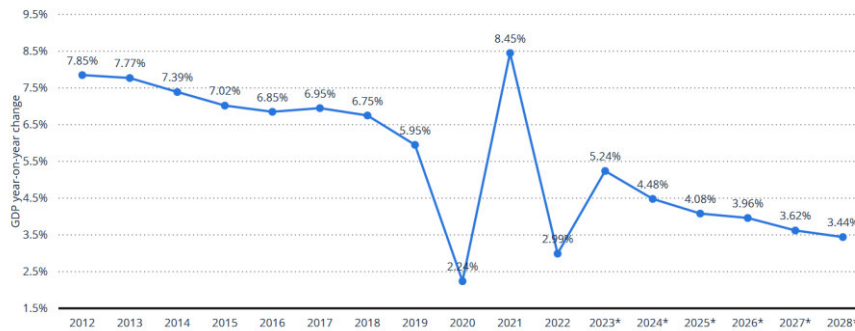


Figure 3  
Growth rate of real gross domestic product (GDP) in China from 2012 to 2022 with forecasts until 2028  
Source: Statista

Collected statistics show 2 low points during COVID-19. First was in 2020 like in the other parts of the world. Second one was in 2022 similarly like in the US or in EU countries.

According to data from the Chinese Statistical Institute, agriculture and the food industry were less exposed to the negative effects of COVID-19 (National Bureau of Statistics of China, 2023).

## 2 Data and methodology

WITS Login - World Integrated Trade Solution (WITS) database data, 2017-2021. 2017-2019 pre-COVID-19, and during COVID-19 2020-2021. data were collected and used for research and calculations. The first 24 classes include food products.

The methodological basis of the study is the index of manifest comparative advantage defined by Balassa (1965). The index is based on the theory of trade based on Ricardo's theory of comparative advantage. The original index is calculated using the following formula:

$$B_{ij} = RCA_{ij} = \left( \frac{X_{ij}}{X_{it}} \right) / \left( \frac{X_{nj}}{X_{nt}} \right),$$

where X is the export, i is the country, j is the product, t is the group of products, and n is the reference country.

Competitiveness indices for the years before and including COVID-19 show only a status quo, but do not show whether and to what extent there has been a decline in competitiveness after COVID-19. I therefore used a trend function to calculate what

the values would have been in the years 2020 and 2021 had there been no pandemic. The direction of the deviations shows whether there has been a decline in competitiveness or whether the competitiveness of the product group has increased.

### 3 Results

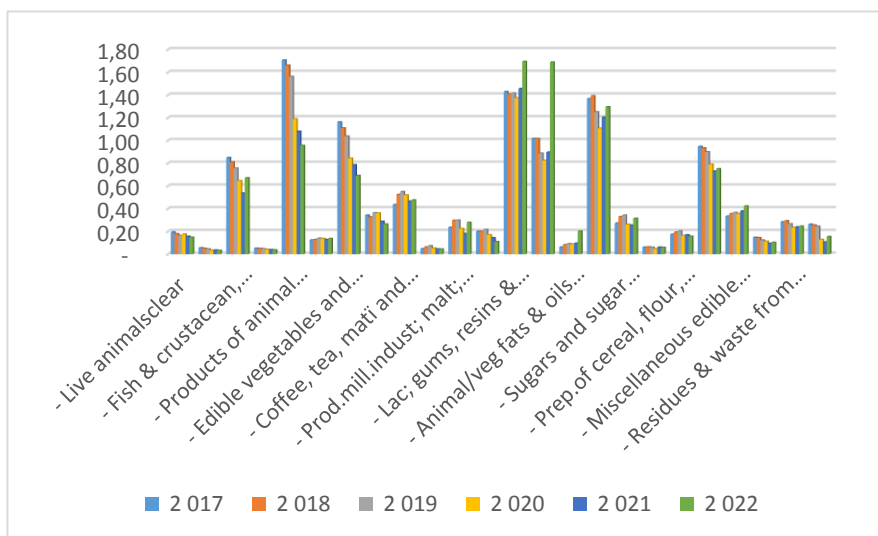


Figure 4  
Output data in the main groups in China  
Source: WITS, own edit

The 21 product areas of China are at a competitive disadvantage according to the Balssa index. This means in practice that it needs to import, or in other words, it is worth importing these products. The products with a small competitive advantage (1-2) are:

- preparations of meat
- vegetable products
- lac, gums
- Products of animal origin, nes or included

Products with middle (2-4) or large level competitive advantage ( more than 4) do not exist in China.

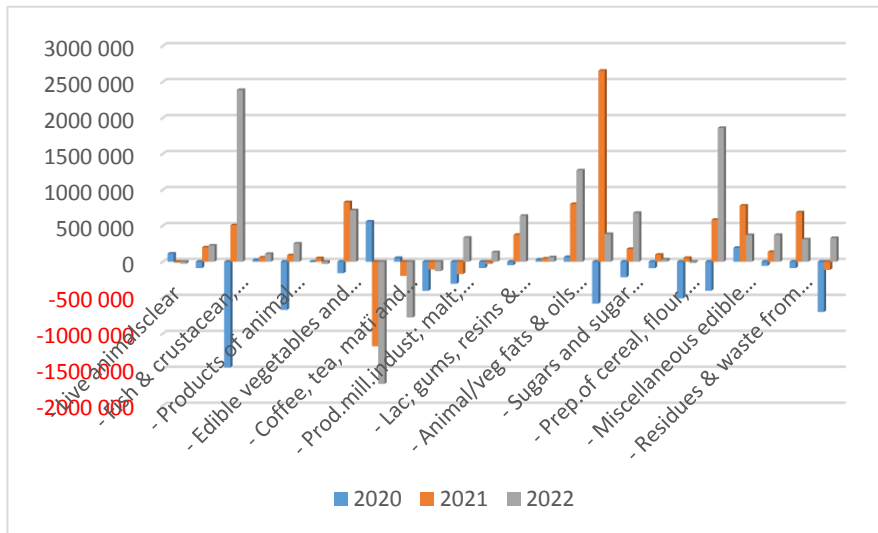


Figure 5

Main trends changes in main groups in China

Source: WITS, own edit

The data show a greater economic recession and decline for the Chinese food industry and agriculture, when Figure 5 shows that declines occur in more product areas than in the case of data from other countries, and these declines are large. So the impact of COVID-19 was absolutely significant on the Chinese food industry as well. Exceptions are dairy products, vegetables, animal fats, oils, miscellaneous edible preparations.

<b>products with increasing competitiveness</b>	<b>products with stagnating competitiveness</b>	<b>products with declining competitiveness</b>
vegetables	Live animals	edible vegetables
	meats	oil seeds
	dairy goods	lac, gums
	fish	sugars
	animal fats,	Live tree
	preparations of meat	Edible fruits
	cocoa	coffee, tea
	vegetable preparations	cereals
	miscellaneous	mill products
	residues	cereals preparations
	Edible vegetables	
	beverages	
	tobacco	

Table 1  
Winners, losers and neutral main groups in China  
Source: WITS, own edit

According to data of Table 1, a significant number of products have either stagnated or declined in competitiveness during COVID-19. However, only vegetables show increasing competitiveness. Its already competitive product range typically showed stagnation in the difference in competitiveness relative to the trend, which means that it could not strengthen further except vegetables, which is basic food.

## Conclusions

The following conclusions can be drawn from the analysis:

- For most product groups there was a decline compared to the trend function.
- Most Chinese food products are not competitive, with the exception of
  - preparations of meat
  - vegetable products
  - lac, gums
  - Products of animal origin, nes or included

- Only vegetables shows increasing competitiveness. This does not mean a strong foundation in trade.
- Its already competitive product range typically showed stagnation in the difference in competitiveness relative to the trend, which means that it could not strengthen further.

The competitiveness of the Chinese economy, which is based on the size of resources and labor, has shown a decline in recent years under the COVID-19, which weakens the international positions of the Chinese economy. Decision-makers must definitely take this into account and take measures that can compensate for this.

### Acknowledgement

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