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**Do commodity prices grow faster than global  
inflation?**

*Ege Onur Gulec,  
Dogan Parlak,  
Milena Milosavljevic*

supervised by  
Igor Pozdeev

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## Abstract

*Currently, we are living in an era, where inflation became a major problem for global and local economies. In this paper, we have investigated the relationship between global inflation and commodity prices and checked whether commodity prices grow faster than global inflation. We used representation techniques which we learned in the class, and we found out that even though there is a strong correlation between them, we couldn't conclude that all commodity prices grow faster than inflation. It depends on both time period and commodity. In certain periods' inflation grow faster than certain commodities and vice versa. To serve this purpose, prices and percent change of the commodities; barley, beef, cocoa, orange, sugar, crude oil, natural gas and gold will be investigated by comparing with the G20 inflation value and percent change of it. The analysis will be done in the time interval 2018-05 to 2021-08*

## Keywords

**Inflation; Commodity Price**

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# 1 Introduction

Commodity prices were always one of the main determinants of the global inflation price. Hence, it is always crucial to understand their relationship between inflation. In this paper, we investigated the relationship between commodity prices and inflation, and we found out that even though most of the time they move together, there is no clear evidence that they grow faster than inflation. There are times at which some commodity prices grows faster than certain commodity prices. However, this is not case always and trend can be changed, i.e. inflation grows faster than them. So we can say that some commodity prices grow faster than global inflation in some time periods.

# 2 Data

We collected prices for the following commodities in order to approximate price changes in important categories : barley, beef, cocoa, orange, sugar (food prices), natural gas and oil (energy prices) and gold (metal prices). We used data from World Bank. Since G20 countries, which constitutes more than 80 percent of World GDP, we decided to use G20 inflation rate to approximate global inflation. We used data from OECD in order to calculate global inflation rate. All our data is from 2018-05 until 2021-08 in monthly time interval.

# 3 Methodology

We transformed our data by using percentage change. Since commodity prices are in nominal values, observing percentage changes will allow us to compare it to global inflation. Afterwards, we plotted all commodities against inflation and compared with each other in order to see possible relationship between them.

# 4 Results and Discussion

In this section, we will present our tables and figures in order to support our result that it is not always the case that commodity prices rise faster than global inflation.

## 4.1 Figures for commodity prices in nominal values in USD

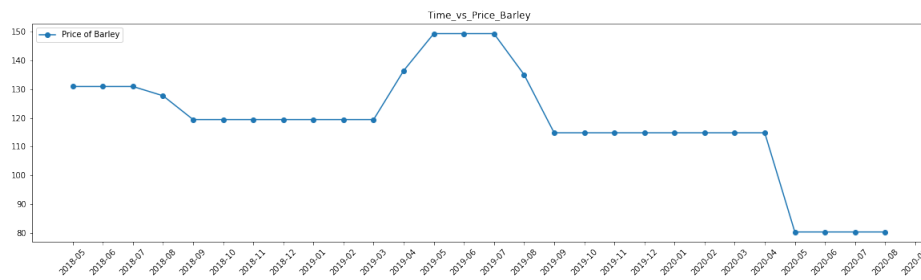


Figure 1: Price of barley in nominal values

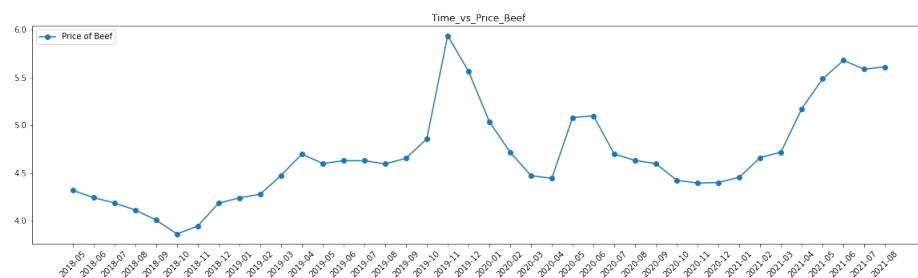


Figure 2: Price of beef in nominal values

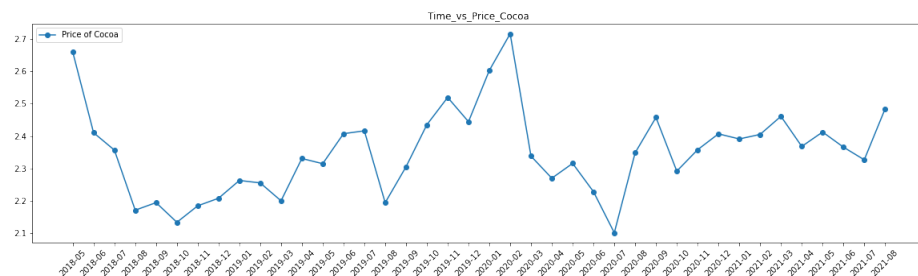


Figure 3: Price of cocoa in nominal values

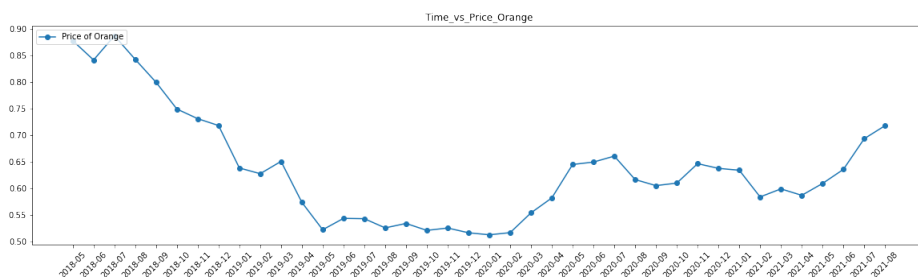


Figure 4: Price of orange in nominal values

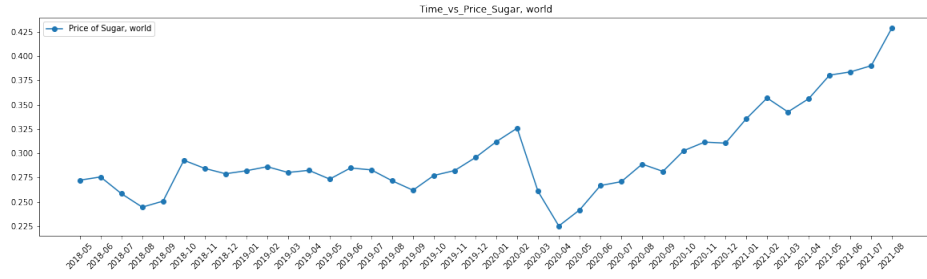


Figure 5: Price of sugar in nominal values

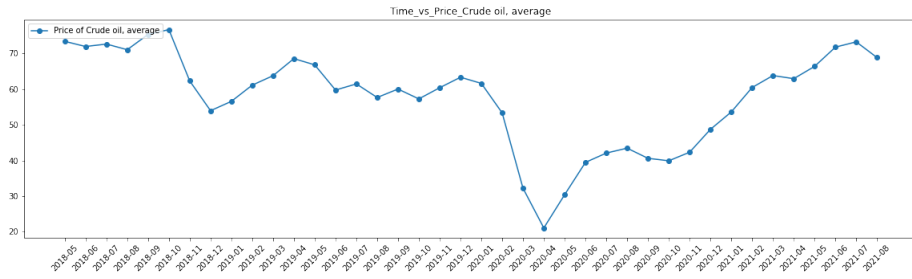


Figure 6: Price of crude oil in nominal values

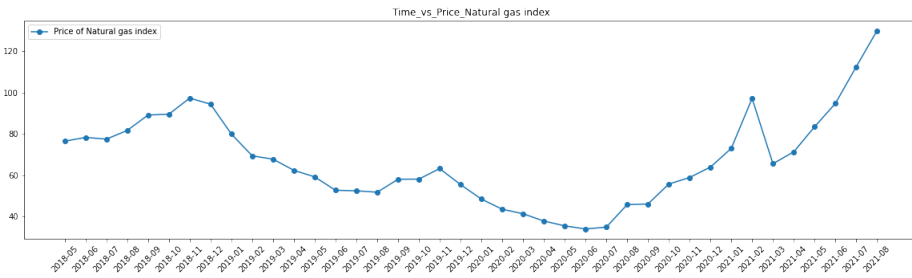


Figure 7: Price of natural gas in nominal values

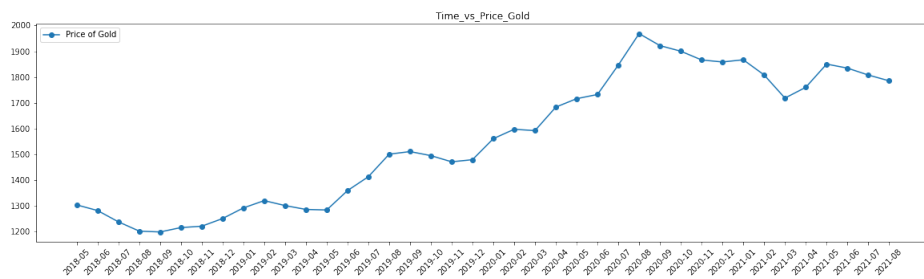


Figure 8: Price of gold in nominal values

## 4.2 Figure for G20 inflation with respect to time

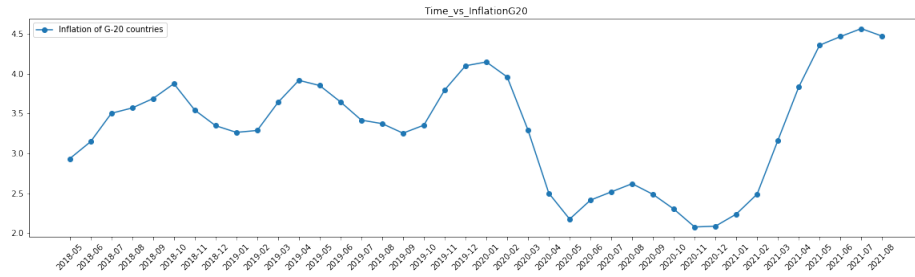


Figure 9: G20 Inflation rate

## 4.3 Percentage Change Graphs

In this section, we are going to display percentage changes of previously selected commodity prices. then we are going to compare them with global inflation rate.

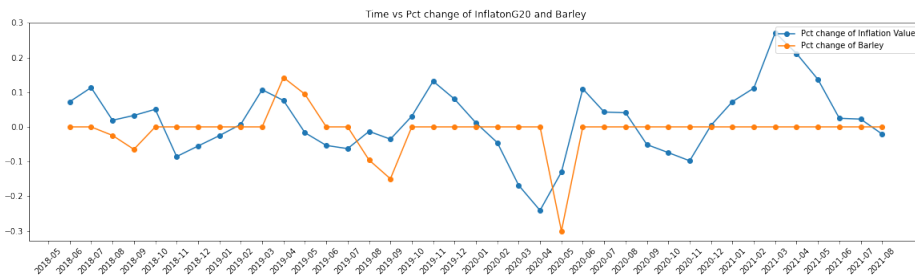


Figure 10: Percentage change of barley in comparison to G20 inflation

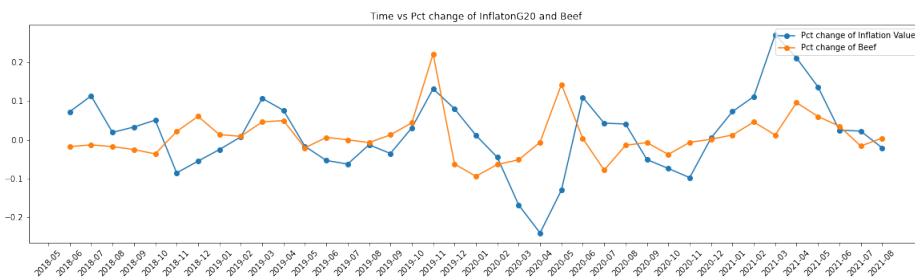


Figure 11: Percentage change of beef in comparison to G20 inflation

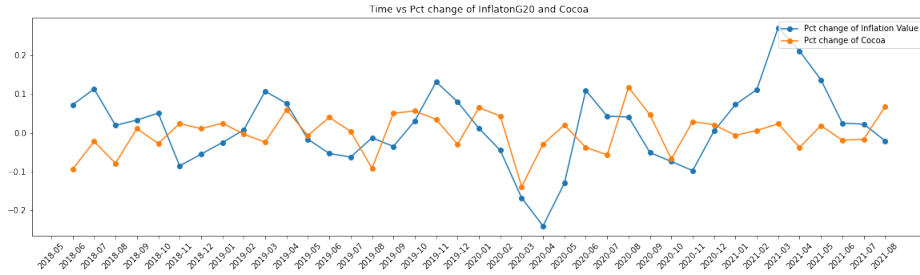


Figure 12: Percentage change of cocoa in comparison to G20 inflation

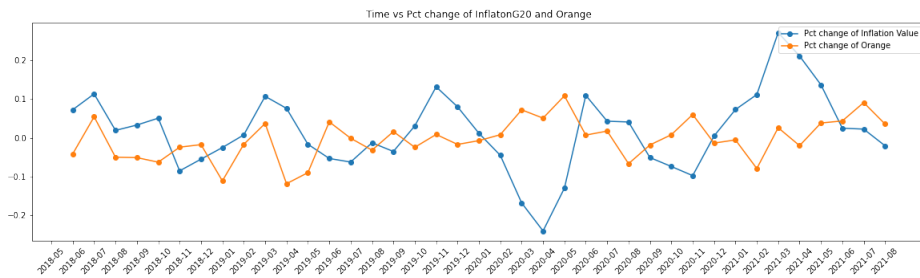


Figure 13: Percentage change of orange in comparison to G20 inflation

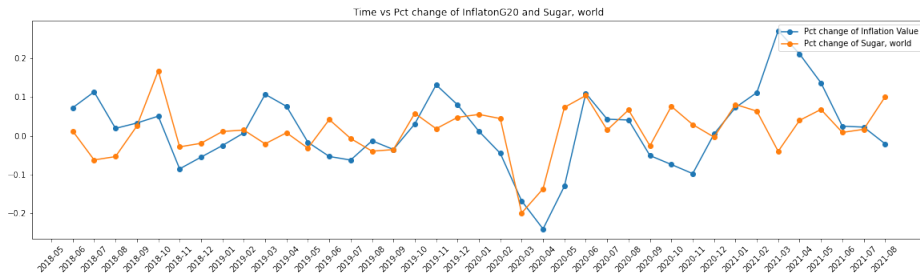


Figure 14: Percentage change of sugar in comparison to G20 inflation

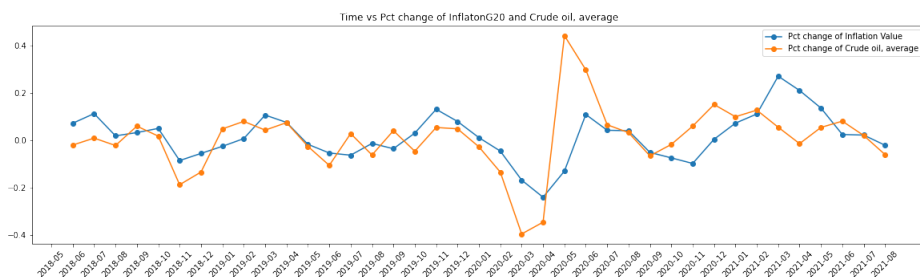


Figure 15: Percentage change of crude oil in comparison to G20 inflation



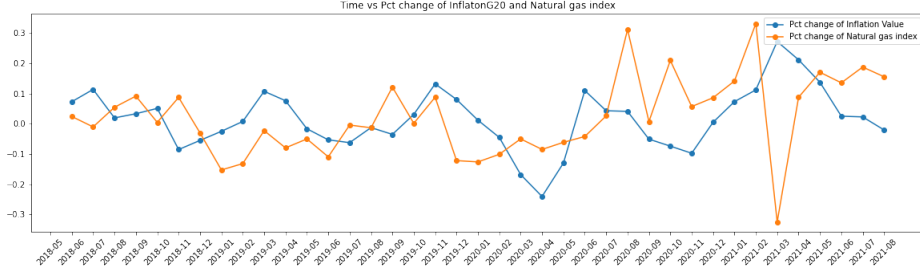


Figure 16: Percentage change of natural gas in comparison to G20 inflation

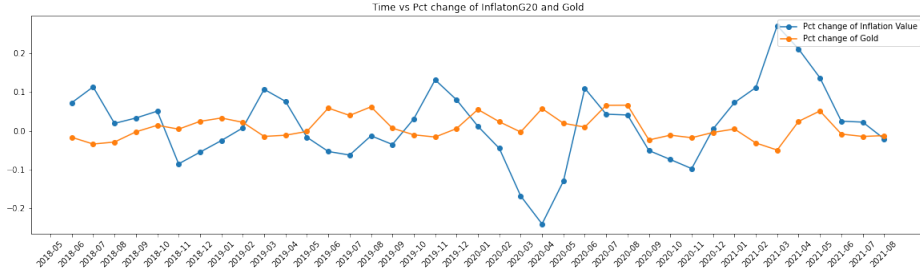


Figure 17: Percentage change of gold in comparison to G20 inflation

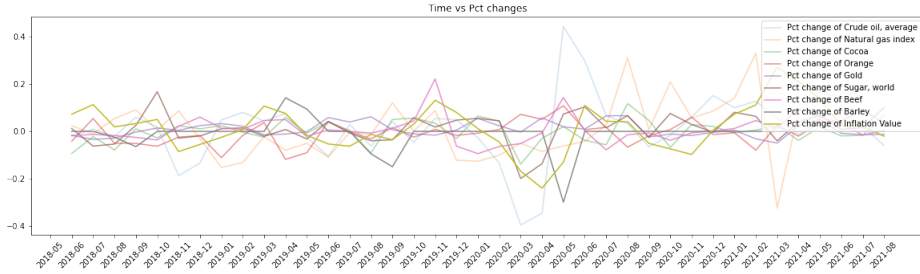


Figure 18: Percentage change of all commodities in comparison to G20 inflation

#### 4.4 Discussion

From the previous graphs, we can see that not all commodity prices increase faster than the inflation rate. Plots yield that there is a strong positive correlation between most of the commodity prices and inflation. However, from figure 18 we can see that not all commodity prices increase faster than inflation. In order to have a closer look, as an instance, from figure 15, we can observe that price of crude oil and inflation value have almost similar patterns. The dominance between them almost alternates in each month. In 2020-04, price of crude oil grows faster than inflation whereas in 2021-03, inflation value increases more rapidly than price of crude oil. Figures 11,

12, 13, 14, 16 and 17 include the same characteristics for different commodities. An aggregate and simultaneous look to the results can be obtained from figure 18. It summarizes the figures from 11-17 in a single plot. Despite some overlaps, when we focus on each month separately, the non-persistent behavior of the price growths and inflation rate is visible.

## 5 Conclusion

To conclude, our analysis display that general trend of inflation and commodity prices are positively correlated. However, there is no clear evidence which supports the statement commodity prices grow faster than global inflation. At some time intervals, commodities dominate the rate of increase in inflation value and vice versa. In other words, since we have not observed any consistent pattern, the question "Do commodity prices grow faster than global inflation?" can not be answered directly and depends on the small monthly intervals.