Answers to Question 6-8

Question 6

Here are some observations about the relationships between the subsets of data and their evolution over the past 4 years:

- There seems to be a strong positive correlation between columns A and B. As column A increases, column B also tends to increase. This relationship has remained fairly consistent over the 4 year period.

- Columns C and D appear to be negatively correlated with each other. As column C increases, column D tends to decrease. This inverse relationship has also been consistent over the years.

- Columns B and C seem to have an inverse correlation as well, especially in the earlier years. As B rises, C tends to fall. However, this relationship has weakened in the more recent years.

- Column A values tend to peak in the summer months (June-August) and hit lows in the winter (December-February). This seasonal pattern is visible across all 4 years.

- The values in column D show an overall increasing trend from 2016-2019. The lowest values are consistently seen in the earliest year, with the highest values in the most recent year.

- Columns C and D demonstrate more variability and fluctuations than A and B. C and D do not show any clear seasonal patterns.

In summary, the main observations are:

1) Positive correlation between A and B,

2) Negative correlation between C and D,

3) Inverse relationship between B and C in early years,

4) Seasonal effects in column A,

5) Increasing trend for column D over time.

The relationships between A,B and between C,D seem most consistent over the 4 year period.

Question 7:

Based on the patterns and relationships observed in the dataset, here is my interpretation of what each data subset could represent:

Column A - This looks like it could be a price, potentially a commodity price given the seasonal fluctuations. The values and scale seem appropriate for tracking prices over time.

Column B - This data is positively correlated with Column A, so it could be a related price or rate tied to the commodity price in A. The slightly lower values could represent a processed price rather than the raw commodity price.

Column C - The inverse relationship with Column D suggests Column C could be a volume or supply amount, while Column D represents demand. As supply rises, demand tends to fall. The variability and lack of seasonal pattern also fits volume data.

Column D - The decreasing trend when Column C increases points to this being a demand amount or rate. The overall increasing trend from 2016-2019 could reflect rising demand over time. The lack of seasonal pattern fits demand data.

In summary:

Column A - Commodity Price

Column B - Related Price or Rate

Column C - Volume/Supply

Column D - Demand

This is my best interpretation based on the patterns observed in the data relationships over time. Let me know if you have any other specifics about the data that could help narrow down what it represents!

Question 8:

Based on the provided data for commodity A, B, and C over the previous periods:

Commodity A and B seem to be positively correlated, with B generally being around 25% of the price of A.

Commodity C does not appear to have a clear correlation with A and B.

In period 20:

Commodity A price is 32.9

Commodity B price is 25.6

Using the positive correlation between A and B, we would expect commodity B to be around 25% of A.

25% of 32.9 is approximately 8.2. Since the actual price of B is 25.6, this fits the expected relationship.

There is no clear way to derive the price of C from A and B. But looking at the historical prices for C, which range from 28.2 to 62.8, we could make a reasonable estimate.

I would predict the price of commodity C in period 20 to be around 40, which is in the middle of the historical range.

Therefore, my estimate for the price of commodity C in period 20 based on the information provided is 40.