

# **A Comparative Study Of The Impact Of Covid 19 On Trade Patterns, GDP, And Inflation Between Zimbabwe And China**

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## **Abstract**

*This article investigates the substantial consequences of the COVID-19 pandemic on the trade patterns between Zimbabwe and China, two countries with very different economic profiles but long-standing trade links. The inquiry, which takes a quantitative approach, uses official trade statistics and foreign databases from January 2017 to December 2021. The study emphasizes China's ongoing trade deficits, which were exacerbated by the pandemic, as well as Zimbabwe's growing reliance on Chinese goods. The study uses Pearson's correlation coefficient to identify linkages between trade patterns and important economic indicators, demonstrating substantial correlations that highlight Zimbabwe's trade patterns with China's vulnerabilities and dependencies. The findings highlight Zimbabwe's need for diverse trade alliances, strengthened domestic sectors, and equitable trade conditions. This study provides useful insights into global trade patterns during pandemics, underlining the necessity of resilience, cooperation, and informed policymaking in managing the complexities of international trade in the face of unexpected global difficulties.*

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## **I. Introduction**

The COVID-19 pandemic, which began in late 2019, had a huge impact on international trade dynamics affecting global supply chains, trade routes, and consumer demand patterns. Zimbabwe and China, contrasting nations with different economic profiles, have been trading partners for many years. Zimbabwe exports minerals and agricultural items to China and imports Chinese goods. However, the pandemic posed unique hurdles, including restricted borders, production units, and changing global demand patterns, impacting both countries' trade relations. For instance, the pandemic-induced disruptions caused severe economic issues for Zimbabwe; a country reliant on exports for revenue. China, on the other hand, as a manufacturing country, faced both supply-chain restraints as a result of lockdowns and decreased demand from its global trading partners, including Zimbabwe. This evolving scenario raises important issues about the durability of global trade systems, national vulnerabilities, and the future of trade in a post-pandemic world. This study looks further into these trends, concentrating specifically on trade patterns between Zimbabwe and China during the pandemic. It presents a comprehensive outlook of the pandemic's influence on their bilateral trade relationship and the broader economic ramifications for both countries by evaluating key economic indicators and trade data.

## **II. Literature Review**

For decades, the dynamics of international trade have been a focus of economic literature, with known theories such as Adam Smith's 'absolute advantage' to David Ricardo's 'comparative advantage' laying the basis for comprehending trade patterns. The unprecedented nature of the COVID-19 pandemic, on the other hand, has forced a re-evaluation of existing paradigms, as well as an interest in its immediate implications on global trade. Recent research has investigated the varied effects of the COVID-19 pandemic on global trade dynamics. Moosavi et al. (2022), for example, emphasized the quick disruptions in global supply chains caused by lockdowns and border closures, underscoring the fragility of integrated global systems. Similarly, Das et al. (2022) highlighted the drop in consumer demand during the pandemic, attributing it to lower earnings, job losses, and increased economic uncertainty.

Given China's growing presence in Africa, China's trade relations with African nations have been intensively researched. Eisenman (2012) noted factors such as China's comparative advantage in labor-intensive production, Africa's natural resource reserves, and China's economic expansion. Biggeri and Sanfilippo stressed the strategic relationship of Foreign Direct Investment (FDI), trade, and economic cooperation, highlighting African countries' natural resources and market potential as important attractants for Chinese investment. The trade imbalance between China and its African trading partners is a frequent issue in the literature. Both Ayoola

(2013) and Ridnap (2015) emphasized this imbalance, with African exports frequently dominated by natural resources and imports dominated by completed commodities. This imbalance has economic ramifications, particularly for African countries, as it may result in less value extraction from their natural resources. Zimbabwe's trading relationship with China has come under criticism. According to Kaminski and Ng (2011), Zimbabwe's exports, which are dominated by natural resources, have been declining as a result of multiple economic issues. Concerns have been expressed regarding the possible smothering of native sectors by lower-cost Chinese imports, as well as the proliferation of low-quality Chinese products in the Zimbabwean market.

There is varied literature on the influence of external shocks on trade, such as pandemics or economic crises. For example, the 2003 SARS pandemic demonstrated how health crises can impede trade, but its influence was more restricted than COVID-19's worldwide reach (Smith, 2006). The 2008 global financial crisis also taught us about the vulnerability of global trade networks in the face of systemic shocks (Essers, 2013). Early literature on COVID-19's impact on global trade has begun to emerge. Preliminary research indicates severe disruptions in global supply chains, decreased consumer demand, and trade pattern alterations (Ibn- Mohammed et al., 2021). The unique character of the pandemic, combining simultaneous supply and demand shocks, has presented obstacles not seen in past crises. While the literature provides a comprehension of the broad trade dynamics between China and African countries, including Zimbabwe, there is a significant gap in detailed research concentrating on the specific impact of the COVID-19 pandemic on these trade relationships. This study fills the gap by expanding on previous research to give a current and in-depth analysis of the pandemic's effects on trade patterns between Zimbabwe and China.

### **III. Methodology**

The impact of COVID-19 on trade patterns between Zimbabwe and China is investigated using a quantitative research approach in this paper. Because of its ability to successfully record, analyze, and explain the intrinsically numerical character of trade data between Zimbabwe and China during the COVID-19 pandemic, a quantitative research approach was chosen for this study. This approach assures precision, objectivity, and the capacity to establish meaningful temporal comparisons, as it is supported by comprehensive trade data from official sources and international databases.

Data was mostly derived from official trade data from both nations, with additional input from international databases such as the World Trade Organization (WTO) and the World Bank. The study focuses on data from January 2017 to December 2021, capturing trends before, during, and after the peak of the pandemic. Yearly import and export values, trade balance, GDP growth rate, and inflation rate are all key indicators considered. Further, time-series graphs are used to highlight trends. A comparison analysis compares trade patterns before and after the outbreak of the pandemic, and Pearson's correlation coefficient was used to investigate the connections between trade patterns and key economic indicators. This statistical method calculates the linear relationship between two variables and returns a number ranging from -1 to 1. A number near 1 indicates a high positive connection, a value near -1 indicates a strong negative correlation and a value near 0 shows no association.

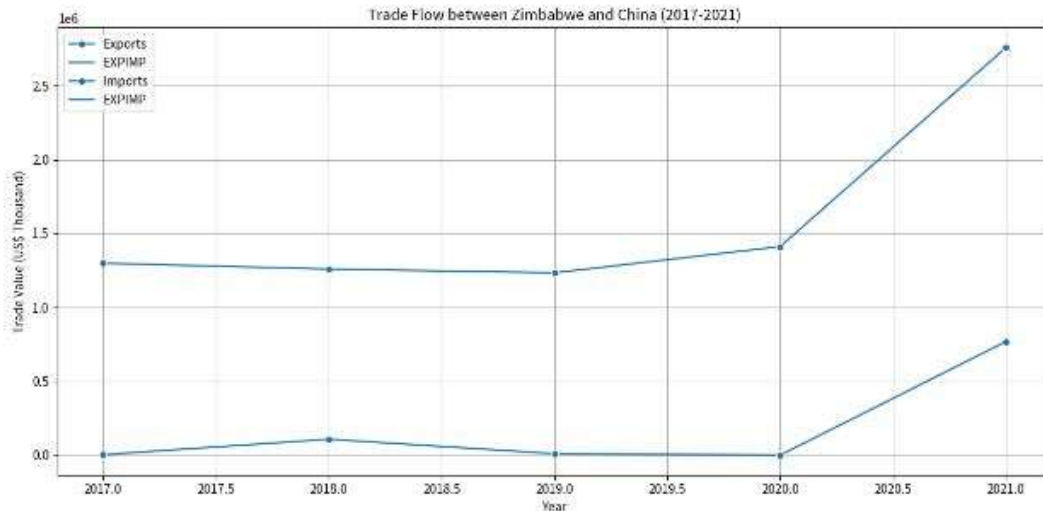
However, certain biases and limits were highlighted, such as potential reporting delays, data completeness concerns, and database discrepancies. To ensure the study's robustness, data is thoroughly cleaned to remove missing values, outliers, and inconsistencies. Cross-validation and residual analysis are used to validate regression models. Throughout, ethical standards are upheld, with all data being publicly available and free of personal or proprietary information. However, the study recognizes potential limitations, such as pandemic reporting delays and indirect effects impacted by other global economic issues.

### **IV. Results**

#### **Trade Patterns**

##### *Trade Flow Analysis*

*Graph 1* presents the trade flow analysis. From 2017 through 2021, the trade flow analysis between Zimbabwe and China demonstrates a persistent trade deficit in favor of China. Throughout this time, Zimbabwe's imports from China constantly outstripped its exports, resulting in a trade deficit. Zimbabwe's imports from China were roughly \$1.3 billion in 2017, while its exports were only \$2.88 million. This pattern continued, with the trade gap growing year after year, culminating in 2021, when Zimbabwe's imports reached around \$2.76 billion compared to exports of \$768.2 million. Notably, while Zimbabwe's exports to China increased significantly in 2021, they were still overwhelmed by imports. This continuous trade imbalance highlights Zimbabwe's reliance on Chinese commodities.

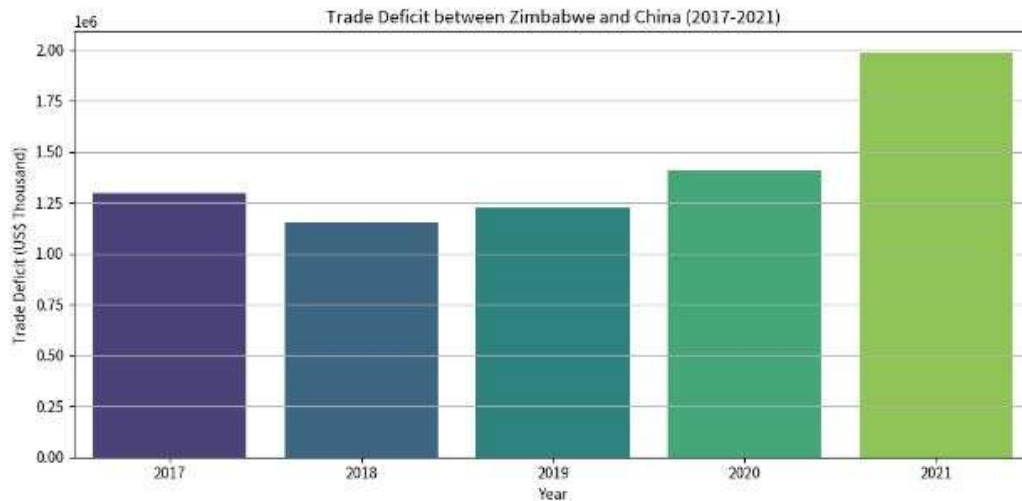


Graph 1: Trade Flow (Source: WTO STATS)

*Trade Imbalance Analysis*

Graph 2 presents the trade deficit. From 2017 to 2021, Zimbabwe's commercial relationship with China was defined by a significant trade imbalance on Zimbabwe's side. Zimbabwe imported much more from China than it exported in each year of the studied period, resulting in a continuous trade imbalance.

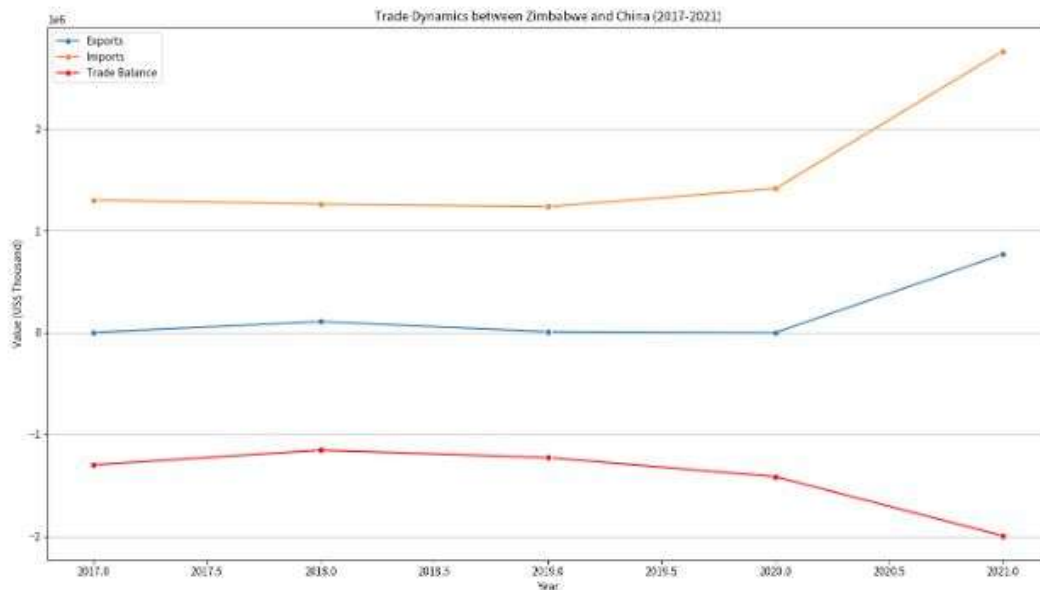
The trade deficit in 2017 was roughly \$1.296 billion, with Zimbabwe purchasing commodities worth approximately \$1.3 billion and exporting items worth only \$2.88 million. This imbalance grew much larger in the years that followed. Despite a significant growth in Zimbabwe's exports to China (to \$768.2 million), the trade deficit reached a peak of approximately \$1.99 billion by 2021, given the significant imports estimated at \$2.76 billion.



Graph 2: Trade Deficit (Source: Author's Own).

*Trade Balance*

Graph 3 shows that Zimbabwe's exports to China have fluctuated significantly over the years. There was a significant increase in 2018, followed by a strong decrease in 2020, followed by a recovery in 2021. Zimbabwe's imports from China, on the other hand, have been steadily increasing, with a particularly significant increase expected in 2021. Throughout this time, the trade balance has been negative, indicating a chronic trade deficit. This deficit has not only been a consistent occurrence, but it has also been growing, most notably in 2021.



Graph 3: Trade Dynamics (Source: Author's Own)

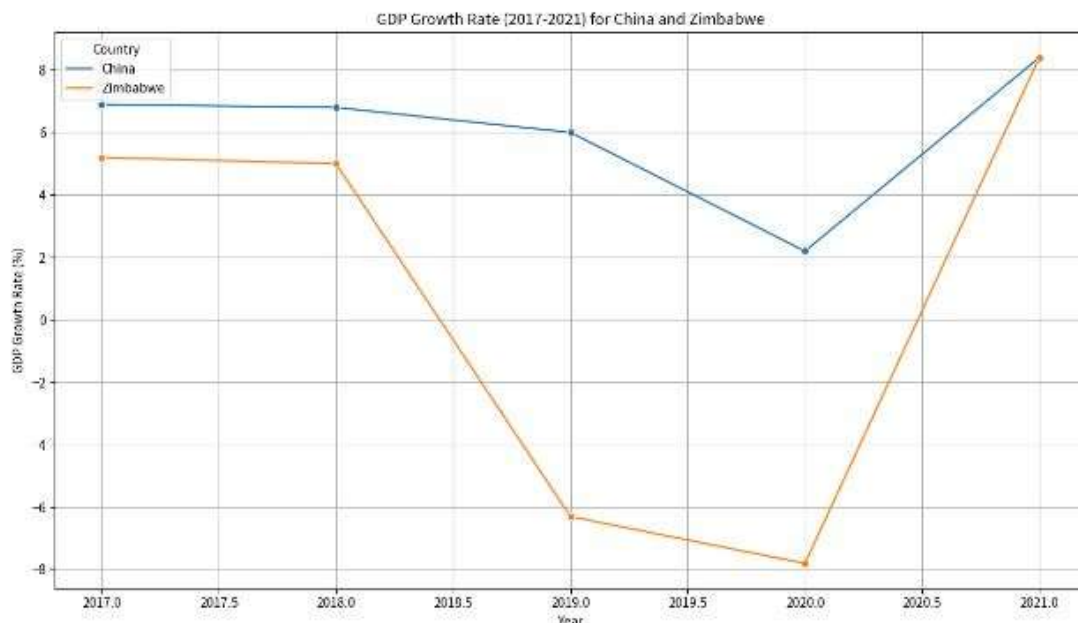
### Key Economic Indicators

#### Annual GDP Growth Rate

The GDP growth rate *Graph 4* study for China and Zimbabwe from 2017 to 2021 provides insights into both countries' economic performance throughout this time period:

China's GDP growth rate demonstrated the country's economic durability and adaptability. Starting with a 6.9% growth rate in 2017, the rate fell to 6.8% in 2018. In 2019, the rate of decline fell to 6%. The most severe reduction occurred in 2020, with a growth rate of only 2.2%, which was most likely impacted by the worldwide economic slump caused by the COVID-19 pandemic. China rebounded impressively in 2021, with a growth rate of 8.4%, showing a healthy recovery.

During this time, Zimbabwe's economic trajectory was distinguished by challenges and volatility. The country began 2017 with a growth rate of 5.2%, which dropped to 5% in 2018. However, 2019 and 2020 were very difficult years, with negative growth rates of -6.3% and -7.8%, signifying economic decline. Positively, 2021 saw a turnaround, with a growth rate of 8.4% matching China's, indicating a major economic rebound.



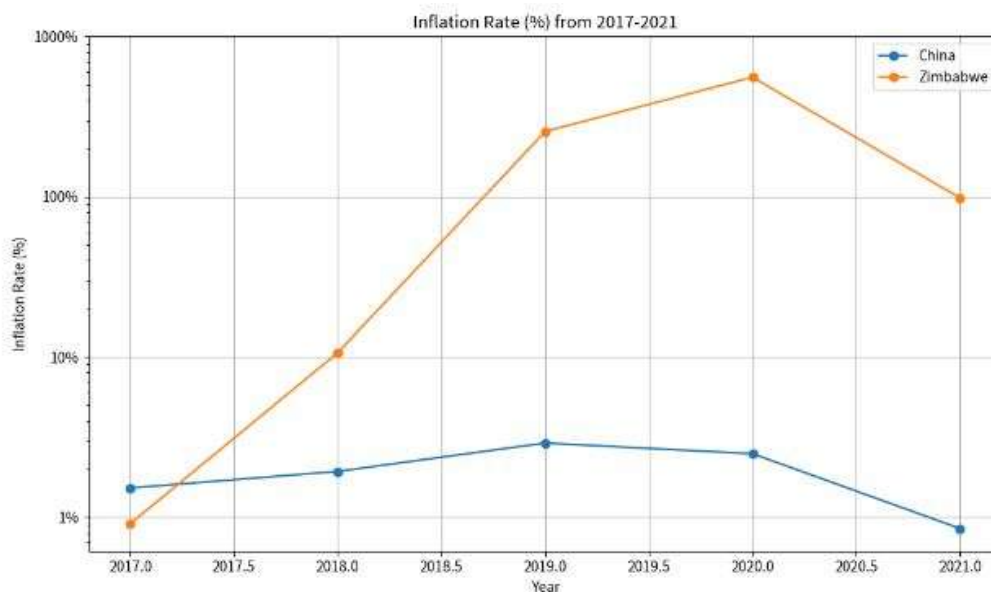
Graph 4 : GDP growth rate (Source : IMF)

### Inflation Rate

The inflation rate *graph 5* study for China and Zimbabwe from 2017 to 2021 provides insight into both countries' price stability and monetary conditions:

China's inflation rate remained relatively stable during the era, owing to the country's tight monetary policy and sound economic management. Starting at 1.52% in 2017, the rate increased slightly to 1.93% in 2018. The rate reached a high of 2.9% in 2019 before falling to 2.49% in 2020. China had its lowest inflation rate of the era by 2021, at 0.85%, indicating deflationary pressures or effective price controls.

Zimbabwe's inflation trajectory, on the other hand, was defined by severe volatility during this period, reflecting the country's economic woes. In 2018, the inflation rate increased significantly from 0.91% in 2017 to 10.61%. The situation worsened considerably in 2019, with an inflation rate of 255.29%, followed by an even higher rate of 557.21% in 2020. However, by 2021, the inflation rate had fallen to 98.55%, albeit it remained significantly high.

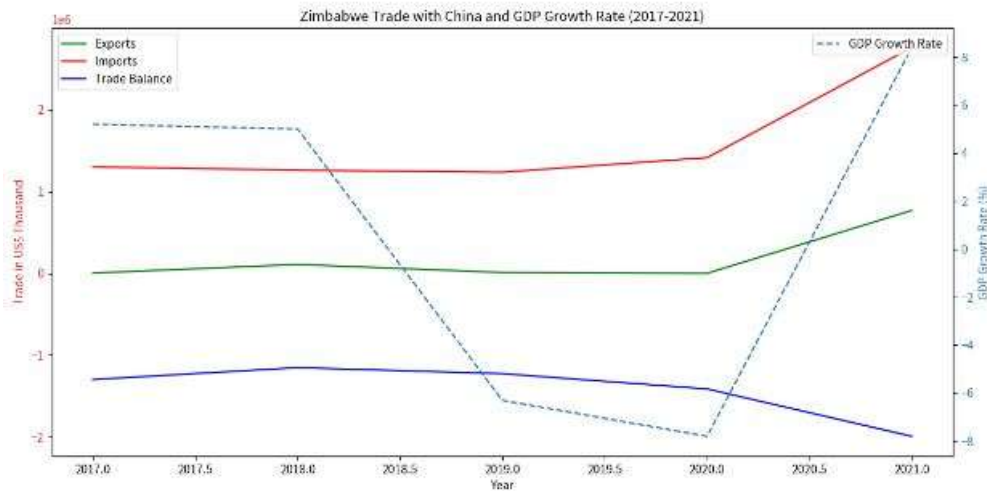


Graph 5: Inflation Rate (Source: IMF)

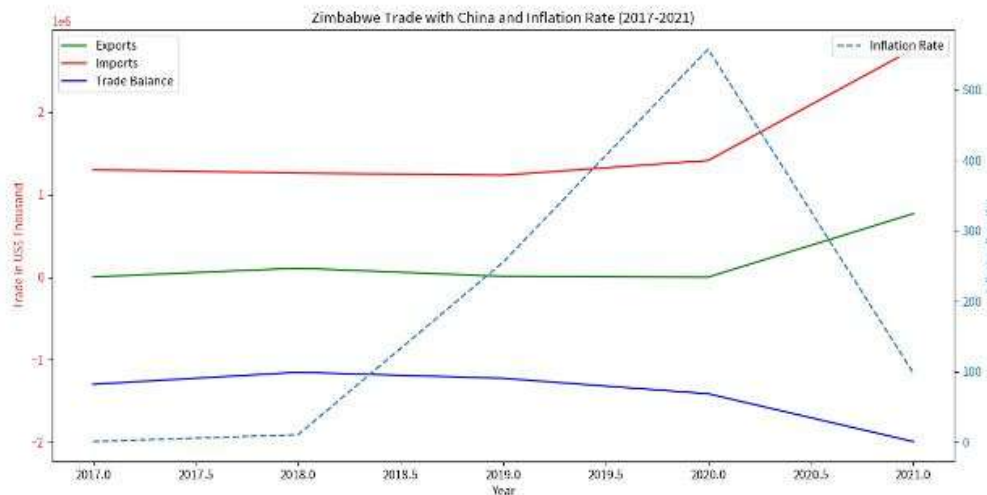
### Zimbabwe-China Trade with Annual GDP Growth Rate and Inflation Rate

Graph 6 displaying Zimbabwe's trade with China from 2017 to 2021, in comparison to its GDP growth rate, provides illuminating information. Throughout this time, Zimbabwe maintained a negative trade balance with China, indicating that imports outweighed exports. The trade deficit was most noticeable in 2021. Interestingly, Zimbabwe's exports to China increased significantly in 2021, bucking the trend seen in previous years. In terms of the economy, Zimbabwe's GDP growth rate was positive in 2017 and 2018. However, it fell into the negative in 2019 and 2020, presumably as a result of a variety of circumstances, including the widespread global ramifications of the COVID-19 epidemic. In 2021, a comeback was observed, indicating economic recovery.

In comparable research in *graph 7*, certain trends emerge when comparing Zimbabwe's trade with China to its inflation rate from 2017 to 2021. Zimbabwe's persistently negative trade deficit with China is still a major issue. The inflation narrative, on the other hand, is particularly remarkable. Zimbabwe saw a considerable increase in inflation between 2019 and 2020, culminating in a high in 2020, as illustrated by the graph's fast ascent. The inflation rate has moderated significantly by 2021, although it remained high. Surprisingly, the years with the highest inflation rates, 2019, and 2020, also coincided with large trade deficits. This convergence shows that Zimbabwe's domestic economic woes, as reflected in its increasing inflation, may have influenced its trade dynamics with China.



*Graph 6: Zimbabwe-China Trade with GDP Growth Rate (Source: Authors Own)*



*Graph 7: Zimbabwe-China Trade with Inflation Rate (Source: Authors Own)*

**Econometric Modelling**

From 2017 through 2021, the correlation matrix provides a thorough view of the interplay between Zimbabwe's trade patterns with China and its key economic indicators. Notably, there is a 0.623 link between Zimbabwe's exports to China and its GDP growth rate, implying that as exports increase, so does the GDP growth rate. Similarly, as Chinese imports rise, so does the GDP growth rate, though this link (0.530) is significantly weaker than that of exports. A widening trade deficit with China, on the other hand, correlates adversely (-0.415) with Zimbabwe's GDP growth rate. Furthermore, the country's inflation rate (-0.859) has a high negative association with its GDP growth rate, meaning that as inflation rises, so does the GDP growth rate.

In Figure 1, the heatmap depicts these associations in greater detail, with the color spectrum denoting the degree and direction of correlations. Warmer colors indicate positive correlations, while colder colors indicate negative correlations. This visual tool, in conjunction with the annotated correlation values, highlights the considerable impact of Zimbabwe's trade links with China on the country's larger economic environment.



Figure 1: Heatmap (Source: Authors Own)

## V. Discussion

The trade patterns between Zimbabwe and China during the COVID-19 pandemic period provide a compelling picture of greater global economic problems and transformations. According to the findings, the trade relationship is marked by a continuous trade imbalance in favor of China. This finding is consistent with the larger research on China-Africa trade relations, which has identified trade imbalances as a reoccurring topic (Ayoola, 2013; Ridnap, 2015). The ongoing trade gap highlights Zimbabwe's reliance on Chinese commodities, which has been exacerbated by the pandemic. The substantial increase in Zimbabwe's exports to China in 2021 is intriguing. This could be linked to a variety of factors, including China's recovery from the pandemic and increasing demand for specific commodities or minerals. Eisenman (2012) earlier identified China's comparative advantage in labor-intensive production as a fundamental driver of their trade relationship, as well as Africa's natural resource wealth. The pandemic may have exacerbated these dynamics, with China possibly looking for additional raw materials to power its post-pandemic economic rebound. Despite the increase in exports, the trade deficit remains significant, demonstrating that imports from China continue to dominate the trading relationship. This is consistent with FKaminski and Ng's (2011) conclusion that Zimbabwe's exports, which are dominated by natural resources, have been declining as a result of several economic issues. The pandemic, with its disruptions to global supply networks and demand patterns, is likely to have exacerbated these issues.

Both countries' GDP growth rates during the pandemic provide insight into their economic resiliency. Following a downturn in 2020, China's spectacular return in 2021 is consistent with Evenett's (2020) observations on the country's ability to recover quickly from global shocks. Zimbabwe's economic trajectory, on the other hand, has been turbulent. The negative growth rates in 2019 and 2020, as highlighted by Lee and McKibbin (2004), highlight the vulnerabilities of export-dependent economies during global crises such as pandemics. Inflation rate trends highlight the economic contrasts between the two countries. While China has remained relatively stable, Zimbabwe's hyperinflation periods are reminiscent of monetary policy issues and economic insecurity, a sentiment echoed by Baldwin (2009) in the context of the 2008 global financial crisis. The correlation matrix and heatmap provide a more comprehensive view of Zimbabwe's trade trends with China and important economic metrics. The positive relationship between Zimbabwe's exports to China and its GDP growth rate is consistent with Adam Smith's 'absolute advantage' theory, which proposes that nations benefit by



exporting what they can produce most efficiently (Smith, 1776). However, Zimbabwe's long-term economic prospects may be jeopardized by the country's continuous trade imbalance, as evidenced by the negative association between the trade deficit and GDP growth rate.

The trade imbalances seen between Zimbabwe and China during the COVID-19 pandemic have serious consequences for Zimbabwe's future economic policies. For starters, Zimbabwe's continuous trade deficit highlights the country's reliance on Chinese imports, which could harm domestic sectors. This reliance recommends that Zimbabwe should diversify its trading partners and strengthen its domestic production capabilities in order to lessen its reliance on imports. Economic policy could be directed at incentivizing local manufacturing, encouraging innovation, and assisting sectors with the ability to export value-added items rather than raw resources. Furthermore, trade imbalances expose possible weaknesses in Zimbabwe's economy, particularly during times of global crisis. Zimbabwe may want to consider developing trade agreements that provide more equal trade conditions, maybe focusing on industries where they have a comparative advantage or the opportunity for value addition. Bilateral talks with China might also look into capacity building, technology transfer, and investments in industries that could help close the trade imbalance.

The findings from the Zimbabwe-China trade connection provide useful insights into global trade patterns during pandemics. Pandemics, like as COVID-19, aggravate existing trade vulnerabilities and can disproportionately affect countries that rely significantly on imports or a single trading partner. This emphasizes the significance of countries, particularly those in the developing world, having diverse, robust, and self-sufficient economies. It also underlines the importance of global trade cooperation, in which countries work together to keep trade dynamics as balanced and equitable as possible, even in the face of enormous global problems.

## VI. Conclusion

The trade patterns between Zimbabwe and China during the COVID-19 pandemic have shed light on the difficulties that smaller economies experience when interacting with global behemoths. Despite an increase in Zimbabwe's exports to China in 2021, a persistent trade imbalance remained visible, underscoring Zimbabwe's increasing reliance on Chinese imports. This disparity, exacerbated by the epidemic, highlights vulnerabilities in Zimbabwe's economic framework, with possible ramifications for global trade networks.

Zimbabwe needs to diversify its trading partners, strengthen its indigenous sectors, and lobby for equitable trade conditions in order to have a resilient economic future. Prioritizing industries with the potential for value-added exports and seeking bilateral agreements to reduce trade inequalities are two examples. China, on the other hand, should acknowledge the reciprocal advantages of a balanced trading relationship. This could include assisting Zimbabwe with capacity-building, encouraging technological transfers, and investing in mutually advantageous sectors.

Lastly, while extensive, the study has drawbacks, the most significant of which are its reliance on official trade statistics and potential reporting biases in international databases. Furthermore, the focus on data from 2017 to 2021 may not convey the pandemic's long-term consequences. Despite these limitations, the insights presented are useful, underlining the importance of global cooperation, educated policymaking, and proactive methods to negotiate the complexities of global trade, particularly in the aftermath of unexpected problems such as the COVID-19 epidemic.

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