

THE UNIVERSITY OF THE WITWATERSRAND

Impact of Covid-19 on Economic Indicators of Globalization: Evidence from Emerging and Developing Economies.

*A research report submitted to the Faculty of Commerce, Law, and
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for the degree of Master of Management in Finance & Investments.*

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DEDICATION

I dedicate this Dissertation to my family without whose assistance and support I would not have made such a great achievement:

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Abstract

This study analyzed the impact that the COVID-19 pandemic has on two important economic indicators of globalization, namely: bilateral trade flows and Foreign direct investment. This thesis used the trade gravity model, estimated using the Poisson Pseudo Maximum likelihood (PPML), to look at the influence of COVID-19 cases and death counts on bilateral trade. For foreign direct investment, this paper used a panel data analysis to establish the influence of COVID-19 cases and death counts have on FDI.

The study finds a negative relationship between bilateral trade and COVID-19 cases and death counts for both country of origin and destination country. Trade agreements, official language, contiguity and GDP have a positive influence on bilateral trade for both trading partners. When estimations are done using foreign direct investment (FDI) as dependent variable, real GDP is positively associated with FDI flows, the exchange rate is positive but not significant, while unemployment is negative but not significant as well. The 2020 dummy variable is negative and significant, thus FDI flows were adversely affected during that year compare to other years. Consequently, the study found that the COVID-19 pandemic has had a significant impact on the two most important economic indicators of globalization international trade and FDI. Some of the recommendations are that there should be a reduction in tariffs among countries to foster bilateral trade and also diversification of commodities so that a country does not just rely on one commodity as that would impact them negatively in a pandemic.

Keywords: *Bilateral trade, FDI, Covid-19 pandemic, exchange rate, Gravity model*

Ethical clearance

All ethical issues in this research were taken into consideration and observed. Permission to obtain the secondary data was obtained—the fundamental research adhered to all ethical requirements.

Acronyms and abbreviations

CEPII	Centre d'Etudes Prospectives et d'Informations Internationales
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
OECD	Organization For Economic Cooperation and Development
OLS	Ordinary Least Squares
PPML	Pseudo Poisson Maximum Likelihood method
RE	Random effect model
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme

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CHAPTER 1: INTRODUCTION

1.1. Background

Globalization or the growing interdependence of economies encompasses flow of goods and services across borders, international capital flows, reduction in tariffs and trade barriers, immigration, cultural transformation, and the spread of technology and knowledge beyond borders, (Samimi, 2011). Socrates and Lashitew (2021) discovered that the recent Corona virus (Covid-19) pandemic has generated an unparalleled level of social and economic crisis. Worldwide and projections of and the global GDP showed regression from 87% to 74%, and international trade declined by 4.7%, in 2020 (WTO, 2020a; IMF, 2020), making it the heaviest health and economic crisis since the WWII (Kassa, 2020; Barichello, 2020; Baldwin and Tomiura, 2020).

Sikder et al., (2020) explains how the Covid-19 has become a global disease, that prompted the WHO to escalate its category from a disease to a pandemic, which is affecting the entire world economy, especially in the African continent. This pandemic has affected the global human health, and in turn it has had a knock-on effect on the supply side by causing business activity disruption, increasing abrasions in international trade in addition to a trade demand shock, thus propagating negative value chains, whereby growing living uncertainty and actual unemployment drastically reduce rate of consumption and expenditure (Baldwin and Mauro, 2020).

The Covid-19 pandemic has brought in a wave of global uncertainty, which in turn is fueling nationalist narratives and protectionism. This has made globalization to come under significant threat as governments scramble to reduce their vulnerability to the virus by limiting flows of people and global trade. Africa's global supply chains has taken a significant hit due to the imposition of border closures and strict migration measures. There have been major disruptions of international and intercontinental trading, with adverse impacts on poverty and employment, (Yaya and Labonte, 2020).

Globalisation is broad and can be discussed either in one of the following four strands; movements of goods (trade), movement of capital (finance), movement of information and movement of labour (migration). In this paper, the focus is globalization in term of trade. Even before Covid-19, globalisation was already under significant threat from rising nationalism, forcing governments and businesses to define new constructs and priorities. This response to

the conflicting forces of globalisation and nationalism has given rise to the term “slowbalisation”. This term is coined by the Economists to describe declines in trade, multinational profits, foreign investment and leading to arguments that we have now passed ‘peak globalisation’ (Lyke, 2020). This paper therefore aims to look into the impact of Covid-19 on economic indicators of globalisation, with a focus on trade; Capital flow; and inequality and provide an updated overview on the developments in economic indicators of globalisation. This is fundamental to researchers who want to investigate the impact of globalisation on the aforementioned economic indicators.

1.2. Research gap

Few studies have tried to look into the relationship between Covid-19 with trade and FDI like Hayakawa and Mukunoki (2020) who analysed the impact of Covid-19 on international trade on BRICS economies. Limited studies therefore exist as far as a bilateral analysis is concerned in examining the impact of the pandemic on trade and FDI. Therefore, this study seeks to fill these knowledge gaps by doing the following: First, most research papers have focused on other indicators as migration, health and economics in a general sense for example (Shrestha et al, 2020). This paper seeks to fill in the gap by focusing on the two economic indicators of globalization. Firstly, looking into emerging markets and developing markets to get a global outlook on Covid-19 impact on these economic measurements of globalisation.

Secondly, previous studies in this area have been limited as they use simple the OLS or panel data regression analysis unlike this study, which uses an advanced gravity model. Also, this is attributable to the given the fact that measurement of globalization is not an easy task to measure because there is no universally accepted measure of globalization indices and definitions of globalization differ across the board (Kondulukov and Simic, 2020). Thirdly, most of the empirical research done in this area has been focused on developed economies such as USA and Europe and not much has been done on developing economies and emerging markets. This paper seeks to fill in the gaps mentioned above in an effort to further understand and investigate the concept of globalization and its impact across the cited economies based on the two indicators of globalisation i.e., trade and FDI.

1.3. Research questions

This paper seeks to fill in these gaps by answering these questions:

Q1. To what extent has Covid-19 affected trade in importing and exporting countries?

Q2. How has Covid-19 outbreak affected FDI in emerging and developing countries?

1.4. Objective

This study aims to evaluate the impact of Covid-19 pandemic on the two economic indicators of globalization (trade and FDI) using the gravity model and OLS model, with a focus on different market economies. Given that most previous studies have focused on an individual indicator of globalisation, this paper seeks to assess the overall impact of Covid-19 death counts and cases on the above-mentioned economic indicators of globalisation. A majority of the literature on the impact of Covid-19 have been on advanced markets and developed markets, this paper however seeks to fill the gap by focusing on developing and emerging markets that are least studied. Secondly, the paper looks into the impact of Covid-19 pandemic on importing and exporting economies as the effect was different as seen in the research findings. Additionally, the study makes use of the entire sample of data available, increasing the reliability of the result.

Contribution of the study

In conjunction with other things, the existent literature explored supply chain disruptions (Verma and Gustafsson, 2020) and demand changes in trade import or export (Cao et al, 2020), often using country-level data. In contrast, this analysis, provides a comprehensive picture of Covid-19 effects on the two main components of economic globalisation an area that is currently not yet fully explored. By investigating the impact of Covid-19 on economic indicators globalisation in the aforementioned mentioned markets, this research will significantly expand information on the two economic indicators above. Most of previous research papers focused on one aspect of the economy such as FDI but this paper will broaden the findings into other areas like trade in importing and exporting countries.

Secondly, previous researchers have looked into the impact in advanced economies such as China and Brazil like Hayakawa and Mukunoki (2021), but this study looked into developing and emerging markets. Previous studies also used simple panel data regression analysis that has limitations for example errors that arise using a simple OLS regression. The gravity model used in this paper is superior and provides a more accurate analysis of the impact of Covid-19 on the economic indicators of globalisation. Furthermore, this study examines the extent of the effect of Covid-19 on destination and originating countries, something that has not been conclusively looked into thus shedding light on the impact on destination trade countries vis a vis originating countries.

1.5. Significance of the study

Limited studies have attempted to examine the relationship between the pandemic with trade and FDI in individual economies for example Frank and Liu's (2020) analysis on South Korea and Taiwan responded to the Covid-19 pandemic, and how they consequently affected the flow of FDI. However, to the best of my knowledge, no research has investigated the impact of the pandemic on FDI and trade in developing and emerging economies, making this study significant as it looks into filling this gap. Moreover, the study contributes to existing literature on the impact of the pandemic on trade and FDI and can be used by investors in ascertaining the impact of pandemics on these economic indicators thus making sound investment decisions in trade and FDI flows between economies.

The structure of the report

The remainder sections of this paper are structured as follows; Impact of Covid-19 on globalisation according to globalization definition is introduced in chapter 2. Then, we present criteria for the methodology in chapter 3. We describe critical point about empirical results in chapter 4. Finally, chapter 5 concludes the paper and section 6 gives recommendations.

CHAPTER 2: LITERATURE REVIEW

2.1. Conceptual Framework

This section discusses the theoretical and empirical background of how Covid-19 affects the indicators of economic globalization. The impact happened through transmission from the supply and demand shocks that occurred in the markets due to the Covid-19 pandemic outbreak. One, when demand declined because of the Covid-19 pandemic due to a decline in disposable income available to households. This was however not the case for some countries like South Africa, where the disposable increased as a result in an increase in the unemployment fund subsidies and welfare package as they were receiving R350 per day. Other factors like lockdowns curtailed movement, wage cuts that happened because of the pandemic. Secondly, the supply shocks that happened because of the immobility of labour, some labourers also died because of the pandemic thus decreasing productivity. According to Blanchard (2017), changes in demand for goods leads to changes in production, changes in production lead to changes in income, and changes in income lead to changes in demand for goods, that is how the transmission effect works.

Ozili and Arun (2020) demonstrated that the spread of the virus encouraged social distancing which led to the closure of financial markets, corporate offices as most people worked remotely. The high rates at which the virus was spreading, and the heightened uncertainty of the future, led to flight-to-safety in consumption and investment among consumers and investors. There was unanimity among top economists that the pandemic would plunge the world into a global recession as experienced 2008-2009. In financial markets, global stock markets erased about US\$6 trillion in wealth in last week of February. The Standard and Poor 500 index also lost over US\$5 trillion in value in the same week in the United States of America while uncertainty among investors caused the largest ten companies to have a combined loss of over US\$1.4 trillion.

Many countries imposed domestic and international travel restrictions of people leading to massive losses for businesses in the entertainment, aviation transport, hospitality and the sports industries. Globally, the combined losses came to be above \$4 trillion. Several developed countries, such as the United Kingdom and the United States tried to cushion their citizens and residents by offering fiscal stimulus packages including social welfare payments while the monetary authorities offered loan relief to several businesses. There were also spill overs to

developing and underdeveloped countries. The effect was felt more on developing countries that have a crippled public health infrastructure and non-existing social welfare programmes.

2.2. Theoretical Background

Baldwin and di Munro (2020) explains that the pandemic has had an effect on all major economies, with the G7 countries who jointly contribute to 60% of world supply and demand, 41% of world manufacturing exports and 65% of world manufacturing. Thus, the rest of the world will follow suit as these economies are now severely affected. Di Mauro (2020) refers to outcomes such as these as ‘macroeconomic flu’ - a negative supply and demand shock that is temporal - causing a temporarily fall of output, followed by a rapid recovery and possibly a full catch-up on the shortfall. However, that happens with a normal flu or a ‘macroeconomic sneeze’, as opposed to this Covid-19 which is seemingly producing global and possibly persistent economic disruption.

Baldwin and Tomiura (2020) posit that the countries that are hit the hardest by the covid-19 pandemic in terms of a supply-oriented shock, exports will fall, and in terms of a demand shock, imports will reduce most in trading partners. To date, almost every analyst has denoted that the economic impacts due to Covid-19 will be a combination of shocks in supply and demand. Hence, by analysing overall impacts on individual countries/regions in the global economy, approaches such as a CGE analysis will be suitable to the analysis (IMF Report, 2020). Using this approach, details of the country’s multi-sector analysis can be obtained, thus helping analysts in examining the implications for individual commodities. To date there has been a scarcity of CGE modelling analyses that have focused on the spatial spill overs of Covid-19 through international trade.

Generally, pandemics have effects on economies but the Covid-19 pandemic is said to have had the worst effect on the world economies especially through transmission mechanisms in the market such as oil shocks, demand and supply shocks that immediately hit the market at the onset of the pandemic in March 2020, UNCTAD (2020). These was the case for most markets however we see evidence from different markets in the last two years that the pandemic destabilised world economies especially given the fact that it emanated from China, which is one of the world’s biggest suppliers to Africa and other developing economies, (Obayelu et al 2021).

According to Sheffi, (2020), evidence is emerging that the outbreak and spread of Covid-19 has generated an unparalleled havoc in the global supply chain, which has primarily relied on manufacturing output from China and raw materials. Production shocks and shocks to trade flows due to transports and logistics disruptions are the are two key channels of the global supply chain effects (Leigh, 2020). In China, the factories are affected by not only lockdowns and quarantines but also shortage of inputs from other countries, for example, machineries and equipment, raw materials and manufactured inputs causing a slowdown in production sites in other countries (Fernandes, 2020). Thus, the production shocks that begin in China rapidly spreads over other economies to cause global supply chain shock. A production shock scale is large globally, as China occupies 60%, 65% and 41% of world GDP, manufacturing, and manufacturing exports respectively (Baldwin & Di Mauro, 2020). Bloomberg ranks Wuhan, the city that Covid-19 originated from, as 13th from 2000 Chinese cities for its role in international supply chains (Daurat, 2020) and the 9th best-performing Chinese city according to the Milken Institute ranking (Wong & Lin, & Jackson, 2020).

With four scientific and technological development parks accommodating more than 350 research institutes, over 1600 hi-tech enterprises, 3 national development zones and numerous enterprise incubators, the city received investments from more than half of Fortune Global 500 firms (Bloomberg, 2020). The US, South Korea, Japan, India, Netherlands, Germany, U.K., Singapore, and Brazil are the major export destinations for goods manufactured in Wuhan (Kemp, 2020), indicating the ripple effect scales generated due to the lock-down of Wuhan alone from December 2019 to January 2020. This shock in production in China is driving a ‘Bullwhip effect’ in the global supply chain by forcing firms to reduce or Stop sales and production. For instance, according to reports, H&M, the iconic global fashion retail store closed 45 of its stores in China, with Gap, Uniqlo, Hugo, Ralph Lauren, Nike, Levi Strauss and Adidas following suite by publicly announcing about their store closures in central China (Biron & Zhu, 2020). This effect extended to large multinationals in the automobiles and transport industries such as Damien Klassen, Toyota, General Motors, Volkswagen as well as Airbus (The Manufacturer, 2020; Leijen, 2020).

Global supply chain shock has also disrupted transports and logistics, causing a halt in the movement of human and goods. Almost all major airlines from Lufthansa Group to Lion Airlines have completely or largely stopped international flights across the world, as airports have shut down globally or restrict entry of international passengers (Pallini, 2020), and international flights have reduced to just under 65,000 (Leigh, 2020). The travel bans

compounded by airport closure, and the sink in the demand have forced 64 global airlines to stop their flying schedules (Pallini, 2020, March 26). Similarly, the big logistics company Freightos laid off nearly 50 workers amidst the breakdown of their supply chain (Johnson, 2020). Robinson (2020) relates these statistics to Air cargos like British Airways parent IAG.

The three German logistics group led by DHL reported to have major disruption in inbound and outbound logistics to and from China in air cargo shipments, trucking, and rail cargo services (Tirschwell, 2020).

2.3. Impact of COVID 19 on FDI and Trade

In this section, we examine the impact of Covid-19 on the two economic indicators based on empirical evidence from different authors. Lucas (2020) scrutinized the impacts of Covid-19 on overall economic growth in middle-income countries. The study was a literature review on corona viruses' impact on economic growth. The findings indicate that Covid-19 impacts are much broader and much more severe than most of the previous crises, causing a much greater damage to the economy. More worrisome is the fact that more than two-thirds of world trade has been disrupted by the pandemic; and an end to this not in sight. Oxford University study published an excerpt revealing how the Covid-19 has caused degradation in communities by infecting and causing death indiscriminately across the world (Shretta, 2020). Forecasts from the IMF indicated that the global economy is likely to shrink by -3% in 2020 (Crutsinger, 2020) and that "the cumulative loss to global GDP over 2020 and 2021 from the pandemic crisis could be around 9 trillion dollars, making it the worst economic downturn since the Great Depression" (Gopinath, 2020).

It is pertinent to note that similar to past epidemics and pandemics, the measures taken to reduce the spread of the disease impacted economics' value chain rather than the economy suffering from a direct effect of the disease itself. These value chain disruption during the pandemic is likely to revive future debates about de-globalisation. The manufacturing sector was disrupted by the lockdown through supply chains led by declining demand, labour inadequacies and transportation disruptions (Baldwin and di Mauro, 2020), while SMEs are also expected to be significantly vulnerable (Shretta, 2020).

2.4. The Impact of Covid-19 on Trade

In quarter 1 of 2020, Hayakawa and Mukunoki (2021) evaluate how international trade in 186 countries have been impacted due to Covid-19. Bases on their findings, the pandemic has negatively influenced trade in exporting countries while the same pandemic has not had an effect on importing nations. There is also evidence on developing countries experiencing negative impact in exporters' Covid-19 burden, but not on developed ones. Similarly, simulation on the potential impact of Covid-19 on trade and GDP have been conducted using a computable general equilibrium model. The different indicators used are a redirection of demand away from activities where social distancing cannot be respected, a rise in international trade cost, an underutilization of labour and capital and a drop in travel services.

Maliskweska et al.'s (2020) simulation indicate a GDP decline, which is seen more across developing countries, and domestic services as well as traded tourist services are the outputs that register the most significant negative effect. They further analyse the future direction of trade and compare it to the trade interconnectedness across countries pre- and post-Covid-19 outbreak. Radical reductions in connectivity, alongside density, and trade interconnectedness were established amongst nations after the outbreak of the pandemic. Even though there was a visible change in the structure of the trade network, China's position in the trade network was however not affected.

Maryla et al. (2020) studied "the potential impact of Covid-19 on GDP and Trade" by employing factors such as a standard global computable general equilibrium model to produce the shock as: use of less labour and capital, led to an increase in international costs in trade, a redirection of demand away from activities that require proximity between people and a reduction in travel services. The results reveal significant declines in GDP in both developing developed countries, putting the decline to be approximately 4 per cent below the benchmark for the world. Domestic services outputs in conjunction with traded tourist services are observed to be worst hit by the pandemic lockdown. This is attributed to the fact that the tourism industry was and is a major revenue earner for developing and developed countries thus the effect was felt largely across many developing countries because of cross border lockdowns and the fact that the aviation industry had also come to a standstill because of the above-mentioned reasons like total lockdowns.

Organisation of Economic Cooperation and Development (2020) observes that the lockdown measures deployed to contain the spread of the Covid-19 virus have led to the temporary

shutdown of many businesses, an erosion of confidence, heightened business uncertainty, widespread financial market turmoil as well as travel and mobility restrictions. Decline in the output level of between 20%-25% is the major impact in many economies, with consumers' expenditure potentially dropping to around 66%. With this, the GDP growth in most countries within service, retail, non-essential construction work and the manufacturing sectors have been severely affected; with the manufacturing sector experiencing the least effect since most manufacturing firms are less employment intensive.

International trade involving goods and services is volatile and rapidly declining in times of crisis. The international air spaces restrictions in terms of traffic and stringent border control resulted in a sharp increase in costs for air cargo, affecting the major industries that provide courier service of foreign products and delay in supply of electronics and automotives critical to industrial input (Baldwin & Tomiura, 2020; Haren & Simchi-Levi, 2020).

Globally, trading allows countries to be exposed to services and goods that are otherwise not available in the domestic market or produced in sufficient quantity. It allows for the expansion of the countries' markets for the said goods and services (Obayelu et al 2021). In most developing nations, the emergence of Covid-19 has been compounded by adverse terms of trade shocks, reductions in remittances and foreign direct investment (FDI) flows, heightened debt vulnerability and capital flight (Baldwin and Mauro, 2020; UNCTAD, 2020). The spread of Covid-19 led to the implementation of social distancing, light and sever lockdowns, and closures of learning institutions, thus forcing labourers to stay home and fend for their children, this also consequently reduced the workers mobility to their workplaces, (Hayakawa and Mukunoki,2020).

For illustration, Covid-19 cases/deaths reduce on-site presence of employees, such as port workers and truck drivers, in the transport and shipping sectors. Lockdown policies and port restrictions reduce air and marine transportation between countries, (Hayakawa and Mukonoki,2021). For instance, Heiland and Ulltveit-Moe (2020) have reported that the container ships' departure was 29% in the first week of April 2020 in compared to 2019. These disruptions caused the inevitable transportation delays and increase freight charges.

In the case of exporting countries, there has been a decline in scales of production thus reducing the amounts of exports in the respective countries. These effects were felt in terms of supply shocks which differ across industries because industries that supply essential commodities such as medical supplies and food experienced smaller shocks as compared to industries

supplying non essentials like automobiles, (UNCTAD 2020). Reports from China for example find that only 20% of cars we sold in February 2020 (Bloomberg, 2020).

These effects were however mitigated by remote working in the labour force, though it was not experienced across some labour-intensive industries like textile. Even labour-intensive sectors such as machinery and transport equipment experience a drastic decrease, if remote work/operation is less feasible and an in-person presence is more critical in the production process, Hayakawa and Mukonoki (2021). Dingel and Neiman (2020) calculated only 22% of jobs could be performed at home for manufacturing sectors. Regarding Covid-19 effects in the importing countries, a decrease in aggregate demand is seen to affect trade in importing countries, since nationwide lockdown policies negatively affect earnings and also increases in port and terminal handling costs, Hayakawa (2021). As for the supply shocks, the degree of the negative demand shocks will differ across industries. As Eaton et al. (2016) investigated, the trade effect of the global recession during the period 2008–2009, negative demand shocks may reduce spending on durable products more than on non-durable products. The reason is that the former products are “postpone-able” (Baldwin and Tomiura, 2020).

Supply shocks also have a knock-on effect resulting in demand shocks of Covid-19 in importing countries through their supply chains. If Covid-19 damages decrease production of a downstream product, they subsequently decrease the import demands of upstream products used for the downstream products, (Hayakawa and Mukonoki, 2021). The pandemic has caused a growing unemployment and heightened uncertainty thereby reducing consumption and investment expenditure. It has simultaneously triggered a supply side shock along value chains because of the disruption of business activities and rising frictions in international trade as well as a demand shock.

From Global Economic Perspectives (2020) we can establish that as the number of workers has declined and the cost of doing business has risen, and demand for goods and services has been severely curtailed, while at the same time supply has fallen sharply. The shock has caused unprecedented disruptions to global trade, travel and tourism, stress in global financial markets and sharp declines in prices of commodity. However, these negative trading effects have been mitigated by some factors such as online shopping, which is seen to have taken an upward trajectory in the second phase of the pandemic, (UNCTAD, 2020). Consumers now are required to switch to online purchasing to make upfront investments. These investments will include costs of; purchasing personal electronic & mobile devices, internet connectivity,

software to run on the mobile device, and learning how to use online purchasing platforms. Once these investments are made, people will have a new normal, thus becoming unwilling to shift back to the status quo.

2.5. Impact of Covid-19 on Capital Flow

(Boehm et al, 2019) showed that shocks experienced to local production in other countries is largely influenced by FDI and international trade because the elasticity of substitution between domestic factors and imported intermediates is smaller. Halpern et al. (2015), further suggests that once the imports is decreased, the producers' productivity is lowered. If imported inputs are reduced the prices of products are increased in value due to the input linkages to the output (Blaum et al. 2018). The pandemic has had an immediate negative impact on (FDI) in 2020, with projections indicating that the situation will continuously deteriorate in 2021. As a result of the pandemic, delays in implementation of ongoing investment projects and the postponement or cancelling of new projects were experienced, as well as the regression of foreign earnings of which normally a significant share is reinvested in host countries, (UNCTAD 2020). Following the outbreak of COVID-19, FDI was instantly struck by the lockdown. The FDI global flows were projected to decrease (from their 2019 value of close to \$1.6 trillion), by 40% in 2020, bringing FDI to down to below US\$1 trillion for the first time since the mid-2000s. FDI was projected to decrease further in the next year and only begin recovering in 2022 at the earliest.

A study conducted by Fang et al. (2021) on the impact of Covid-19 on FDI using quarterly data on 43 countries from 2009 to Quarter 3 of 2020 established that the numbers of new cases, cumulative cases and deaths have significant and negative impacts on FDI, with elasticities of -6.6 %, -8.9 % and -7.6 %, respectively. Cross-border FDI in the first three quarters of 2020 appeared to have significantly regressed due to the pandemic. Further research on four different datasets, including a survey conducted in mid-2020 analysing how China's investments in Germany have developed over time, and the potential impact of the Covid-19 pandemic, ascertained those Chinese investments in Germany have not been strongly impacted by the Covid-19 pandemic and that any negative impact is expected to be short-lived.

The African Union, (2020) elaborated that Covid-19 had harmful socio-economic impacts on its member states which extrinsic and intrinsic effects. The extrinsic impacts occur through direct trade links between Africa and partner continents, through decline in Diaspora remittances, FDI, flow of illicit financing, development assistance, tourism, and domestic

market tightening. The intrinsic impacts happen through the spread of the Covid-19 virus in countries the continent, which include rising morbidity and mortality rate resulting from Covid-19 infections and spread, destruction of economic activities, and decline in government revenue due to decline in global oil and commodity prices. The study also observed the issue of depreciating exchange rates and increase in public expenditure to safeguard human health and support economic activities.

The UNCTAD predicted a regression trend in global FDI flows from -5% to -15% while the OECD experts predicted a decline in FDI inflows by more than 30% in 2020 (OECD, 2020). The rough performance of most capital market and withdrawal of investible funds from African stocks also caused more outflows of foreign portfolio investment. The Institute of International Finance noted that 2020Q1 had the largest capital flight ever recorded for emerging markets exceeding the 2008/09 global financial crisis, while the International Monetary Fund noted that on 23 March 2020 investors withdrew an estimated US\$83 billion from emerging countries due to the pandemic (African Union, 2020).

With China being Africa's largest trading partner, the export decline of major intermediate and final products affected export capacity, production and supply of different finished products manufactured by TNC's in Nigeria, for example, and other emerging economies in general, (Nwosa 2020). The fall in production hindered FDI inflows into the country. Moreso, the challenges confronting the supply chain limited agro-business, which further constrained agricultural production and reduced the supplies of necessities and foods. The cumulative effect from supply chain worsened inflation, consumer welfare, employment rates and global food insecurity.

Using a model of trade in which Covid-19's quarantine translates into an increase of the production costs that has a direct effect on the cost of each input as well as an indirect effect via the sectoral linkages, Sforza and Steininger (2020) find that in a scenario where countries with a share of Covid-19 cases to the employed population is above 0.05%, a policy is imposed where up to 60% of the labour force ends up been quarantined for one month. They discovered that there is an average welfare loss of Covid-19 outbreak in Africa about 13% for quarantined countries while global production linkages accounts for about a quarter of such loss.

Maliszewska et al. (2020) studied the potential impact of Covid-19 on GDP and Trade using a stand global CGE model. The study models the shock as a drop in travel services, underutilization of labour and capital, an increase in international trade costs and a redirection

of demand away from activities that require proximity between people. The biggest is the negative shock in the output of domestic services affected by the pandemic, as well as in traded tourist services. Baker et al. (2020) makes use of a different approach to document and quantify the increase in economic uncertainty induced by the pandemic crisis and its macroeconomic impact on the US economy. A study by the IMF uses a semi structural DSGE model to assess the economic consequences of Covid-19 by including disruptions to financial markets during the pandemic.

2.6. Conclusion:

In conclusion, it is evident that the Covid-19 pandemic had adverse effects on the three economic indicators aforementioned, income and increased and this was greatly attributed to increased unemployment in the formal and informal sectors. Secondly, in terms of trade and Capital flow, we have seen negative effects of Covid-19 on these variables attributed to demand and supply shocks in the markets, also a decline in FDI evidenced by decline in investment due to cross border restrictions, lockdowns and stringent monetary and fiscal policies to intervene in various economies. In terms of intervention, governments introduced monetary through QE and fiscal policies through tax cut to try to mitigate the impact of Covid-19 on their economies, as this was an unpredictable shock in the market.

There are exceptions to this impact in some economies, for instance, South Africa is seen to have experienced an increase in their disposable income because the unemployment fund was used to mitigate the effects of Covid-19 on the economy, specifically the unemployed. They were entitled to a cash relief of R350, which means from the results in this paper you will see a positive correlation between Trade and Covid-19 in South Africa as the unemployed had an increase in disposable income, meaning their purchasing power increased due to the relief and subsidies.

CHAPTER 3: METHODOLOGY

3.1. Research Design and Paradigms

The Covid-19 pandemic has led to an increased interest in studies on the macroeconomic and cross-sectional impacts of economic crises and triggered empirical research on the on-going crisis. Faria-e-Castro, (2020) in his study, for example, uses a dynamic stochastic general equilibrium (DSGE) model to simulate recession scenarios for the pandemic crisis in the USA and then considers the effects of a policy package to cushion the impacts on vulnerable businesses and households as well as to stabilize the economy. Eichenbaum et al. (2020), on the other hand, embed a canonical epidemiology model (the SIR model) into a real business cycle model. By endogenizing the dynamics of the pandemic, the model allows them to study optimal health policy responses. Looking at Baker et al. (2020), the research adopts a forward-looking approach to document and quantify the increase in economic uncertainty induced by the pandemic crisis and its macroeconomic impact on the US economy.

Yilmazkuday (2020) uses daily county-level mobility data within the US to investigate the how much the welfare costs have been affected due to mobility reduction caused by the lockdown. His observations are that there has been a significant rise in welfare costs due to the stay-at-home orders implemented by the US government. African studies are being conducted by Nonvide 4 (2020) about the short-term effect of Covid-19 on poverty assuming a 10%, 20%, and 30% contraction of household consumption while Sumner et al.'s (2020) study approach uses a 5%, 10%, and 20% contractions of household consumption. There are three main knowledge gaps in the above studies on the macro.

In terms of the methodology, this paper shall use secondary data from a sample of emerging economies, and developing economies using a gravity model. This is because at the time this study was conducted covid was over and the impact could only be looked at retrospectively as countries were no longer reporting on covid cases and deaths. The selection of economies was based on the vulnerability that developing and emerging economies face as they would be most affected by a pandemic. There is slew of literature on gravity model use in trade studies; see Anderson and Yotov (2016) who did sectoral gravity model. Caliendo and Parro (2015) estimated a sectoral input-output gravity model, and Allen et al., (2014) estimates the sufficient conditions for the existence of the uniqueness of trade equilibrium for abroad class of general

equilibrium trade models. This paper will borrow from these papers and develop a gravity model to examine the impact of Covid-19 pandemic on trade flows.

Specifically, this paper will follow Baier and Bergstrand (2007) and use panel data to estimate the trade gravity model. The panel data dimension gives one ability to estimate the pair time-fixed effects methods, which address the problem of endogeneity of trade policy variables. Thus, the PPMLHDFE technique is used to obtain the gravity model coefficients.

3.2. Trade Equation:

This section presents the empirical framework for investigating the impacts of Covid-19 on international trade. We examine these impacts by exploring monthly data on bilateral trade from 2019 to 2021. The previous section suggests that Covid-19 damages in exporting countries influence trade through the changes of trade costs and supply capacity. Trade is seen to be also affected by Covid-19 damages in importing countries through the changes in trade costs and the level of demand. In order to investigate the total effect of Covid-19 in importing countries and in exporting countries, we regress trade values on respective countries' damages by Covid-19. This model and equation is acquired from literature findings in Hayakawa and Mukonoki (2021).

Our baseline model is specified as follows:

$$ltrade_{i,j,m,y} = \exp\{\alpha_1 covid_{i,m,y} + \beta_1 covid_{j,m,y} + \delta_{ijy} + \delta_{ijm} + \delta_{ym}\} \cdot \epsilon_{ijym} \quad (1)$$

$Trade_{i,j,m,y}$ is the export value from countries i to j in month m and year y .

$Covid_{i,m,y}$ and $Covid_{j,m,y}$ are the extent of Covid-19 damages in exporting and importing countries, respectively.

The control variables are for three kinds of fixed effects (δ_{ijy} , δ_{ijm} , and δ_{ym}). ϵ_{ijt} is a disturbance term. This equation is estimated using the Poisson pseudo maximum likelihood (PPML) method.

The second model under trade with macro-economic factors is as follows:

$$ltrade_{i,j,t} = \exp\{\alpha_1 rta_{ijt} + \alpha_2 lngdp_{i,t} + \alpha_3 lngdp_{j,t} + \alpha_4 lcovid_{i,t} + \alpha_5 lcovid_{j,t} + \alpha_5 lndist_{ji,t} + \alpha_5 language_{ji,t} + \alpha_5 contig_{ji,t} + \delta_{i,j} + \delta_t\} \cdot \epsilon_{i,j,t} \quad (2)$$

$ltrade_{i,j,t}$ is export values from countries i to j at time t .

$ltrade_{i,j,t}$ is export values from countries i to j at time t . As a time-variant country-pair element, a regional trade agreement (RTA) dummy variable is introduced that takes a value of one if two countries are members of the same RTA and a value of zero otherwise (RTA_{ijt}). $lndist_{ji,t}$ represents the logarithm of bilateral distance between trading partners i and j . $contig_{ji,t}$ is an indicator variable capturing the presence of contiguous borders between trading partners i and j . $language_{ji,t}$ denote a dummy variable for the existence of a common official language between partners i and j . $Ingdp_{i,t}$ is the logarithm of the value of country i output, $Ingdp_{j,t}$, similarly is the logarithm of country j output.

There are different factors that have an impact on trade and this is illustrated and summarised in the table below:

Variable	Impact on trade
Trade Policies	According to Leibovici & Santacreu, 2020, Raising trade barriers when a pandemic hits can significantly exacerbate the welfare costs for net importers of essential goods while making net exporters of these goods relatively better. This therefore means that exporters will have a comparative advantage over the importers.
Non-tariff barriers	Protectionism according to Nicita et al (2013), refers to measures taken by local government to promote local industry in the face of international competition. Non-trade barriers significantly decrease the level of trade. Yalcin et al (2019), elucidate that import controls significantly reduce imports across all specifications. According to Kee et al (2009), it is estimated that ad valorem tariff equivalents that non-trade barriers have, contribute as much to trade restrictions as tariffs.

Exchange rates	Long term real exchange rate volatility has significant negative effects on trade. OECD (2011), found that small economies trade tends to be more impacted by exchange rate changes than larger economies such as USA, euro zone and China. According to Nicita (2013), exchange rate misalignment does affect international trade flows in a substantial manner. For instance, currency undervaluation is found to promote exports and restrict imports.
Inflation	Stockman (1981) states that an increase in the rate of monetary expansion generally reduces the value of domestic output and alters the composition of domestic production. The outcome then becomes a change in international comparative advantage and trade flows. The initial depreciation of the exchange rate following an increase in the rate of monetary expansion is accompanied by a trade surplus and capital outflow, while the subsequent depreciation is generally accompanied by a trade deficit, Springer (1991)
Foreign currency reserves	According to Poltevorich & Popov (2003), accumulation of foreign exchange reserves has the short-term expansionary effect meaning that relative prices of commodities increase with respect to prices of non tradables and to wages. They further go on to state that if there are subsequent unexpected rounds of foreign exchange reserves build up, the long-term growth rates may increase.

	This is because foreign exchange reserves build up especially in periods of terms of deterioration gives a powerful signal to investors that the government is in full control of the situation and can afford costs for the sake of pursuing a consistent policy. Excessive accumulation of foreign exchange reserves mitigates exposure to volatile terms of trade since volatility of the real exchange rate reduces economic growth at a relatively low level of financial development, Auboin & Ruta (2011)
Regional trade agreements (RTAs)	RTAs are said to have positive and significant on trade, this is according to Manzoor & Mir (2022) who state that RTAs improved trade among OECD countries. Kurihara (2011) also states that creation of AFTA, COMESA and MERCOSUR have increased trade in agriculture between their members and this is attributed to stronger bargaining power and subsidies amongst the members.
Language Barriers	It is evident from literature that language can facilitate or be a hindrance to trading between partner nations. According to Ribeiro and Ferro (2020), having a common language can boost trade between countries as it reduces communication costs like translation costs thus making trading affordable and cheap. Firdmuc (2016) states that language barriers can be a stumbling to mutual trade as breach of contracts can be difficult to solve due to language barriers and vice versa.

	He also states common language is the genesis of internationalization and commercial trading between countries. Arvis et al (2013) state that the presence of a mutual language is an important stimulant to fostering trade between countries.
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3.3. Capital Flows/FDI Equation:

The basic FDI regression model is as follows from the findings from literature from Yingjei et al (2021):

$$\ln\left(\frac{fdi}{gdp}\right)_{i,t} = \beta_0 + \beta_1 \ln Covid_{i,t} + \beta_2 \ln rpcgdp_{i,t} + \beta_3 \ln ipi_{i,t} + \beta_4 \ln Exchang_{i,t} + \beta_5 unemployment_{i,t} + \beta_7 \ln year_{2020} + \beta_8 \mu_i + \beta_9 \gamma_t + \varepsilon_{i,t}$$

(3)

where $\left(\frac{fdi}{gdp}\right)_{i,t}$ the ratio of FDI inflows is divided by GDP of country i in time t .

The advantage of using FDI relative to the scale of the economy is that the effect of price can be eliminated, and this variable can be interpreted as the dependence of GDP on FDI in economic terms. $Covid_{it}$ is the variable representing the Covid-19 pandemic.

$rpcgdp_{it}$ denotes real GDP per capita.

ipi_{it} denotes Industrial Production Index, reflecting economic activity and prosperity.

$exchange_{it}$ denotes the foreign exchange rate of the local currency to the US dollar.

$unemployment_{it}$ denotes the number of unemployment rate

$trend_{it}$ controls time trend.

$year_{2020}$ is a time dummy variable which equals to 1 in 2020; otherwise, it equals to 0.

μ_i and γ_t control country- and time-fixed effects.

There are different factors that have an impact on FDI as illustrated and summarised in the table below:

Variable	Impact on FDI
Market size	According to Parashar (2015), market size is the one of the determinants of FDI and this is measured in different ways, e.g., GDP per capita. Khachoo and Khan (2012) state that countries with large market sizes attract more overseas investments.

	Alessandrini & Resmini (2000) found that Eastern and Central European countries with larger populations captured the attention of more investors and attracted higher FDI than countries with a smaller population.
Exchange rates	Godlberg (2009) states that when a country's currency depreciates relative to another currency's value it could imply a reduction in that country's wages and production costs, relative to other foreign countries, making it attractive to investors. Gorg et al (2009) concludes that there is evidence of a negative effect of exchange rate volatility on FDI inflows and these deter foreign investors because it represents uncertainty over the value of their investment. Kosteletou and Liargovas (2000) however suggest that there is an ambiguous relationship between exchange rate volatility and FDI theory.
Trade Openness	Kosteletou and Liargovas (2000) conclude that trade openness increases export oriented FDI, while trade restriction attract "tariff jumping" FDI that takes advantage of the domestic market. Skandalis and Liargovas (20012) also found a positive and significant relationship between FDI inflows and trade openness Kandieri and Chitiga (2006) argue that amongst other factors, trade openness remains one of the strongest forces determining the volume of FDI inflows in host countries. They further emphasize that the need for more investment in the primary, manufacturing and service sector further reinforces the need for trade liberalisation.
Taxes	Desai et al (2004) find evidence that indirect taxes i.e., taxes other than payroll and corporate income tax depress FDI. Radulescu (2008) examine labour tax impacts on the location of foreign subsidiaries and find that both the capital income tax rates have a negative effect on the prevalence of foreign owned corporations.

	De Mooij and Ederveen (2008) contribute to this argument and that a one percent reduction in the host country's tax rates on capital would increase total FDI inflows by 33%.
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Data and Data Sources:

The data used to examine the impact of Covid-19 pandemic, is collected from the *Centre d'Etudes Prospectives et d'Informations Internationales* (CEPII) Gravity database. The database provides data for all existing countries from 1948 to 2021. The data includes information on trade flows, geographic distances, the cultural proximity, trade facilitation measures, and macroeconomic indicators such as output, and per capita income. The cumulative death cases for Covid-19 for each country are collected from World Health Organisation for 2020 and 2021 where the data is available. For a broad interpretation of variables in the database, see Conte, Cotterlaz and Mayer (2022). The Covid-19 pandemic data is then merged for every country of origin and destination country before undertaking the analysis.

The variable this paper uses from CEPII are the distance variable, the language variable, contiguous variable, the trade variable, the output variable which are imputed in the gravity trade model with Covid-19 data for both country of origin and the destination countries respectively. For Foreign Direct investment equation, the data sources are from World trade organization, World Bank and the International Monetary Fund (IMF). The datasets used are GDP, exchange rate, Trade openness, which is a percentage of exports and imports, unemployment data, Covid-19 cases and deaths from 2019-2021. For the variable trade, data was collected from 2000 to 2022 because Covid-19 begun in Wuhan, China, in December 2019 to about 2022, when Covid-19 was no longer declared as a pandemic and countries went back to normal after mass vaccinations.

The other thing to note is FDI data was collected from 2000 to 2022, as the length of the data sets was increased to get a broader analysis of the nature and extent of FDI in developing and emerging countries. Secondly, the sample size came down to 120 countries from about 180 countries as some of the challenges experienced in data collection is a lack of consistency and continuation regarding the availability of data for some countries. Because of the incompleteness of data, the sample size was reduced to 120 countries in emerging and

developing economies. The factors highlighted above i.e., Covid-19 cases, Covid-19 deaths, exchange rate, GDP and trade openness were what was found suitable and relevant for this research and results estimation.

In addition, it is important to note that some factors like production index and regional trade agreements and trade openness are mentioned in the equations but could not be used for estimation because of unavailability of data so they were excluded from the results estimation. However, in reality, these factors affect FDI and trade, but in this study, the commentary has been done theoretical in the table 3.8 and in the equations but they have not been used in results estimation as explained above. Lastly, on the exchange rate we have used the dollar currency in running our estimations for purposes of uniformity and because domestic currencies are also available but we limited the results running to a uniform currency being the United States dollar rates (\$).

CHAPTER 4: PRESENTATION OF RESULTS

This chapter presents, results obtained by estimating Trade equation and FDI equation. The analysis starts with, preliminary data visualization and descriptive statistics, correlation coefficients analysis, and then the regression results follow accordingly. The baseline estimation of the results follows Tinbergen, (1962) who uses the ordinary least square to estimate different version of gravity equation. However, Silva and Tenreyro (2006) suggest that, in the presences of heteroscedasticity, the estimates of the effects of trade policy are not only biased but also inconsistent, when the gravity model is estimated in the log-linear form with the OLS estimator.

Another drawback of OLS approach is that it does not account for information embodied in the zero trade flows, because these observations are simply dropped from the estimation sample when the value of the trade is transformed into the logarithm form. Santos Silva and Tenreyro (2006) propose to apply Poisson Pseudo Maximum Likelihood (PPML) estimator-, which effectively handles the presences of zero trade flows, making it an appropriate choice for empirical gravity analysis. Thus, this paper uses both OLS and PPML estimation techniques to estimate the parameters of the model. The final section gives a brief summary of the results obtained.

4.1. Descriptive statistics

Table 1, present the descriptive statistics of log of trade, log of GDP of country of origin and destination and logarithm of Covid-19 death cases for country of origin and destination country. The logarithm of trade, GDP and Covid-19 are 12.72, 13.69 and 10.12 respectively. All variables have standard deviation below the mean. The inclusion of many countries in the sample increases the reliability of the results, especially since Covid-19 pandemic data both for death cases and infection cases are only vastly available for 2020-2021 period.

Table 1: Descriptive statistics

Variables	Obs	Mean	Std. Dev.	Min	Max	p1	p99	Skew.	Kurt.
ltrade	658102	7.683	3.827	0	20.032	.336	15.973	.08	2.293
lCovid-19o	97505	7.129	2.783	0	13.616	0	12.771	-.27	2.75
lCovid-19d	95227	7.144	2.794	0	13.616	0	12.771	-.266	2.728
lcases o	101868	10.859	3.211	0	17.796	1.386	16.402	-.902	4.004
lcases d	101696	10.834	3.24	0	17.796	1.386	16.402	-.887	3.945
lgdp o	1413357	17.508	2.413	9.532	24.031	11.822	22.549	-.225	2.868
lgdp d	1408702	17.489	2.418	9.532	24.031	11.815	22.549	-.218	2.859
rta	3591118	.038	.192	0	1	0	1	4.816	24.197
language	3289364	.192	.394	0	1	0	1	1.567	3.457
ldist	3590826	8.821	.85	0	9.9	5.919	9.828	-2.15	12.156
contig	3591118	.012	.108	0	1	0	1	9.014	82.253

Note: **ltrade** corresponds to the logarithm of nominal bilateral international trade flows from exporter o to importer d. **ldist** represents the logarithm of bilateral distance between trading partner's o and d. **contig** is an indicator variable capturing the presence of contiguous borders between trading partners o and d. **Language** denotes a dummy variable for the existence of a common official language between partner's o and d. **rta** is the ratified trade agreement between partner o and d. The covariates **lgdp_o** and **lgdp_d** are the logarithms of the values of exporter output and importer, respectively. Lastly, the covariates **lcovid_o** and **lcovid_d** are the logarithms of the values of exporter and importer cumulative cases of death due to COVID-19, respectively

Table 2, present the correlation coefficients of the data used for estimation in this paper. The results show that, trade is negatively correlated with distance and official language of communication, which is expected. Trade is positively correlated with log of Covid-19 death cases for both country of origin and destination country. One should have expected trade to be negatively associated with Covid-19 pandemic, as the lockdown will have affected trade flows negatively. The log of trade is positively associated with regional trade agreements (rta) and countries borders (contig).

In summary, the correlations of interest are contained in the non-diagonal elements of the matrix. Which shows that trade and GDP are strongly positively correlated, and that the correlation is approximately the same for exporter (o) and importer (d) GDP. This finding supports the basic intuition that bigger countries tend to trade more. By contrast, we find a strong negative correlation between trade and distance: country pairs that are further apart tend to trade less. Again, this finding is in line with the basic intuition of the gravity model.

Table 2: Pairwise correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) ltrade	1.000										
(2) lcovid_o	0.384*	1.000									
(3) lcovid_d	0.232*	0.060*	1.000								
(4) lcases_o	0.417*	0.936*	0.066*	1.000							
(5) lcases_d	0.254*	0.069*	0.949*	0.077*	1.000						
(6) lgdp_o	0.506*	0.741*	0.011*	0.799*	0.014*	1.000					
(7) lgdp_d	0.345*	0.013*	0.764*	0.016*	0.798*	0.043*	1.000				
(8) rta	0.240*	0.131*	0.130*	0.119*	0.118*	0.124*	0.125*	1.000			
(9) language	-0.009*	-0.115*	-0.120*	-0.152*	-0.150*	-0.132*	-0.130*	0.026*	1.000		
(10) ldist	-0.250*	-0.041*	-0.044*	-0.094*	-0.097*	-0.067*	-0.070*	-0.218*	-0.073*	1.000	
(11) contig	0.170*	0.046*	0.047*	0.048*	0.049*	0.048*	0.049*	0.130*	0.080*	-0.278*	1.000

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Regression results

Log of covid is positive and significant in explaining trade flows when estimated using OLS. For every one percent increase in the Covid-19 pandemic death, trade flows increase by 0.68 percent. Similarly, log of covid deaths is positive and significant in explaining the influence it has on trade flows. Every one percent increase in death fatalities due to Covid-19 pandemic in the destination country, Trade flows increases by 0.50 percent. Similarly, when the results are estimated using PPLM for log of Covid-19 death cases for country of origin and destination country the results remain positive and significant, contrary to our expectations.

Inclusion of other covariates provide more reliable results as shown in the table below in column 2 and 4. Column 2 presents results for OLS estimation with language, rta-which is a dummy variable that accounts for the presence of a RTA between trading partners, country of origin (o) and destination country (d), and log of bilateral distance between trading partners o and d and contig, which captures the presence of contiguous borders between countries of origin and destination respectively. The results show that a one percent increase death due to Covid-19 pandemic in the country-of-origin results in trade flows decreasing by 0.07 percent, holding all else constant. At the same time, the increase in death cases due to Covid-19 pandemic in destination country, result in trade flows decreasing by 0.13 percent holding all else constant.

The rta variable which is a dummy variable that captures the presences of TRA between trading country of origin and destination country, shows that country with the TRA agreement, trade by 1.60 units than those without the RTA agreement. This finding is consistent with those of Bergstrand et al., (2015). In term of output, for every one percent increase output in the country of origin, trade flow increase by 1.34 percent, holding all else constant. Similarly, for the destination country, every one percent increase in its output, trade flows increase by 1.58 percent ldist all else constant. The distance between country of origin and destination country, tends to adversely affect trade flows. For every one percent increase in the distance between the country of origin and destination country, trade flow decreases by 1.04 percent. Disdier and Head (2008) and Mayer (2014) assert that distance is a significant impediment to bilateral trade, corroborate this finding. Language variable which takes a value of one if both countries share same official language, is positive and significant, showing that, countries which share the same languages tends to trade more than those which do not share the same common

official language. Lastly, contiguity is positive and significant, showing that countries which share borders tends to trade often than those, which do not share borders.

Column 4 presents results for PPML estimation method, with same covariates as those in column (2), gives similar results with exception of contiguity variable is no longer significant in this specification. The results show that, a one percent increase death due to Covid-19 pandemic in the country-of-origin results in trade flows decreasing by 0.01 percent, holding all else constant. At the same time, the increase in death cases due to Covid-19 pandemic in destination country, result in trade flows decreasing by 0.014 percent holding all else constant.

The rta variable which is a dummy variable that captures the presences of TRA between trading country of origin and destination country, shows that country with the TRA agreement, trade by 0.162 units than those without the RTA agreement. Conte, Pierre and Mayer (2022) suggest that, when countries form an RTA, they tend to apply lower tariffs and also cooperate on a number of other policy areas which tends to reduce overall bilateral trade costs among member countries beyond the removal of explicit trade barriers. Thus, these results support their claim. In terms of output, for every one percent increase output in the country of origin, trade flow increases by 0.160 percent, holding all else constant. Similarly, for the destination country, every one percent increase in its output, trade flows increase by 0.12 percent holding all else constant. The distance between country of origin and destination country, tends to adversely affect trade flows. For every one percent increase in the distance between the country of origin and destination country, trade flow decreases by 0.11 percent. Language variable which takes a value of one if both countries share same official language, remain positive and significant, showing that, countries which share the same languages tends to trade more than those which do not share the same common official language. The model fit for OLS- shows that the covariates included explains 67 percent of variations in trade flows between country of origin and destination country respectively.

Notable observations between the OLS and PPLM estimators are that, despite the signs and the significance of variable remaining the same in column (2) and (4), the size of the coefficients decrease a lot between the models. Thus, OLS estimators as explained previously are biased and inconsistent due to zero trade flows and heteroskedasticity problem as alluded by Anderson and van Wincoop (2003).

Table 3 Regression results when clustered across countries.

	(1)	(2)	(3)	(4)
VARIABLES	OLS-Covid	OLS-others	PPML-Covid	PPML-other
lcovid_o	0.675*** (0.00834)	-0.0733*** (0.00909)	0.0821*** (0.00113)	-0.00880*** (0.00109)
lcovid_d	0.465*** (0.00832)	-0.130*** (0.00921)	0.0558*** (0.00104)	-0.0135*** (0.00113)
lgdp_o		1.344*** (0.0119)		0.156*** (0.00153)
lgdp_d		1.076*** (0.0121)		0.119*** (0.00152)
rta		1.577*** (0.0358)		0.162*** (0.00417)
language		0.660*** (0.0473)		0.0702*** (0.00582)
ldist		-1.037*** (0.0222)		-0.113*** (0.00260)
contig		0.715*** (0.105)		0.0154 (0.0124)
Constant	0.400*** (0.0932)	-27.44*** (0.314)	1.129*** (0.0159)	-2.046*** (0.0403)

Observations	20,851	19,307	20,851	19,307
R-squared	0.287	0.670		

Source: Authors' calculations

Note: **ltrade** corresponds to the logarithm of nominal bilateral international trade flows from exporter o to importer d. **ldist** represents the logarithm of bilateral distance between trading partners o and d, **contig** is an indicator variable capturing the presence of contiguous borders between trading partners o and d. **Language** denotes a dummy variable for the existence of a common official language between partner's o and d. **rta** is the ratified trade agreement between partner o and d. The covariates **lgdp_o** and **lgdp_d** are the logarithms of the values of exporter output and importer, respectively. Lastly, the covariates **lcovid_o** and **lcovid_d** are the logarithms of the values of exporter and importer cumulative cases of death due to COVID-19, respectively. Robust standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1

Table 4 below, show the results, when the group are clustered across year. The immediate observation is that, the negative sign observed above for both log of Covid-19 and log of GDP remain. Furthermore, the log of GDP now is statistically significant. Therefore, the size of influence of Covid-19 death on trade does not change when clustered across time. However, log of GDP, size remain the same but become significant. Estimation under the POOLS shows that for every one-percentage change in GDP, trade flows decrease by 1.34 and 0.74 percent respectively. While when the results are estimated using PMML model, the results show that for every one-percentage change in GDP, trade flows decrease by 0.04 percent, which is significant at a one percent level.

Table 4: Regression results when cumulative number of cases of COVID-19 are used instead.

	(1)	(2)	(3)	(4)
VARIABLES	OLS-Cases	OLS-others	PPML-Cases	PPML-other
lcases_o	0.693*** (0.00799)	-0.0986*** (0.0102)	0.0915*** (0.00121)	-0.00538*** (0.00127)
lcases_d	0.502*** (0.00770)	-0.103*** (0.0102)	0.0637*** (0.00105)	-0.00903*** (0.00125)
lgdp_o		1.317*** (0.0121)		0.150*** (0.00153)
lgdp_d		1.009*** (0.0125)		0.114*** (0.00153)
rta		1.478*** (0.0352)		0.150*** (0.00416)
language		0.760*** (0.0478)		0.0809*** (0.00581)
ldist		-1.021*** (0.0226)		-0.114*** (0.00265)
contig		0.656*** (0.105)		0.000569 (0.0121)
Constant	-4.806*** (0.139)	-24.93*** (0.289)	0.377*** (0.0244)	-1.830*** (0.0370)

Observations	22,482	20,449	22,482	20,449
R-squared	0.321	0.653		
e(F)	4850			
Adjust R2	0.321			

Note: **ltrade** corresponds to the logarithm of nominal bilateral international trade flows from exporter o to importer d. **ldist** represents the logarithm of bilateral distance between trading partners o and d, **contig** is an indicator variable capturing the presence of contiguous borders between trading partners o and d. **Language** denotes a dummy variable for the existence of a common official language between partner's o and d. **rta** is the ratified trade agreement between partner o and d. The covariates **lgdp_o** and **lgdp_d** are the logarithms of the values of exporter output and importer, respectively. Lastly, the covariates **lcovid_o** and **lcovid_d** are the logarithms of the values of exporter and importer cumulative cases of death due to COVID-19, respectively. Robust standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1

4.2. Empirical Results and discussion for FDI equation

Figure 2, gives the scatter plots of FDI flows and other variables, all in log forms. There is a negative correlation between the FDI flows and Covid-19 pandemic cases. Unexpectedly, the FDI flow is positively correlated with unemployment rate. At the same time, FDI is positively correlated with FDI flows. The real effective exchange rate is negatively related to FDI flows.

Table 5 below gives descriptive statistics for the dataset used in estimating the above model. The results show that average of log of FDI of 5.604, the mean of log of covid of 11.02, the average mean of $\ln r_{pcdgp}$ is 8.09, the average of $\ln exchange$ is 4.59, the average of unemployment is 7.92, while the mean of $\ln trend$ is 7.61, the average of $dumi2$ is 0.09, the mean of $dumi2021$ is 0.04, lastly, the average $dumi2020$ is 0.05. All the standard deviations are below the mean for the entire sample.

Table 5: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
$\ln FDI$	2401	5.604	1.33	-1.561	12.049
$\ln COVID$	231	11.018	2.539	2.565	17.366
$\ln r_{pcdgp}$	2547	8.086	1.321	5.542	11.475
$\ln exchange$	1033	4.587	.153	3.99	6.236
unemployment	2481	7.918	6.118	.1	31.11
$\ln trend$	2592	7.606	.003	7.601	7.611
$dumi2$	2592	.09	.286	0	1
$dumi2021$	2592	.044	.206	0	1
$dumi2020$	2592	.045	.208	0	1
year	2592	2010.484	6.338	2000	2021

Table 6 provides the correlation matrix for the sample used. Foreign direct investment is negatively correlated with Covid-19 pandemic, log of exchange rate, log of unemployment. Moreover, FDI is positively correlated with log of per capita and $\ln$ unemployment.

Additionally, the dummy variables are positively correlated but not statistically significant with FDI flows.

Table 6: Pairwise correlations

Pairwise correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) lnFDI	1.000								
(2) lnCOVID	-0.220*	1.000							
(3) lnrcdgp	0.217*	0.152*	1.000						
(4) lnexchange	-0.059	-0.273*	-0.048	1.000					
(5) unemployment	0.118*	0.001	0.093*	-0.237*	1.000				
(6) lntrend	0.037	0.392*	0.091*	0.026	-0.022	1.000			
(7) dumi2	-0.025		0.015	-0.009	0.026	0.495*	1.000		
(8) dumi2021	-0.022	0.392*	-0.003	-0.001	0.016	0.357*	0.687*	1.000	
(9) dumi2020	-0.013	-0.392*	0.023	-0.011	0.019	0.326*	0.693*	-0.047*	1.000

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Regression results

Table 7 below present the regression results of foreign direct investment against various drivers, with time variables for year 2020-2021(dumi2), year 2020, and year 2021. The results show that, per capita GDP is positive and statistically significant in explaining foreign direct investments. For every one percent increase in per capita income, foreign direct investment increases by 0.303 and 0.34 percent across various OLS estimations. Covid-19 pandemic adversely affects FDI flows, for every one percent increase in Covid-19 death count, FDI flow decreased by 0.174 and 0.223 respectively. The dummy variable for 2020 is negative and significant in explaining FDI flows. Outbreak of Covid-19 had a negative effect on FDI flows in 2020 compare to another period. Thus, FDI flows decreased by 0.45 percent in 2020 compare to other years. Unemployment rate is positive and significant in explaining FDI flows. This finding is unexpected of. One would have expected the rise in unemployment rare to adversely affect FDI flows. This can be attributed to either model misspecification or other

structural issues emanating from the sample. Effective real exchange rate is positive, but not significant. The lack of significance could be due to the short period of study of the impact, being two years.

The R-square increased as more variables were added into the model. The final value of 0.32, tell us, the variables included here only explain 32 % of the variation observed in FDI flows.

Table 7: OLS Regression results

	(1)	(2)	(3)	(4)
VARIABLES	OLS	OLS	OLS	OLS
lnCOVID	-0.174*** (0.055)	-0.223*** (0.062)	-0.223*** (0.062)	-0.223*** (0.062)
unemployment	0.043** (0.017)	0.043** (0.017)	0.043** (0.017)	0.043** (0.017)
lnrpcdgp	0.304*** (0.109)	0.337*** (0.113)	0.337*** (0.113)	0.337*** (0.113)
lnexchange	0.130 (0.524)	-0.057 (0.522)	-0.057 (0.522)	-0.057 (0.522)
dumi2020		-0.450*** (0.140)	-0.450*** (0.140)	-0.450*** (0.140)
Constant	4.233 (2.792)	5.623** (2.767)	5.623** (2.767)	5.623** (2.767)
Observations	81	81	81	81
R-squared	0.278	0.322	0.322	0.322
e(F)	5.526	5.098	5.098	5.098

Robust standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Estimation using Random effect is done after performing the Hausman test, which gives a Chi-probability of 0.21, therefore we fail to reject the null hypothesis and therefore use RE instead of FE technique to estimate the results. Per capita income is statistically significant in explaining FDI flows and has comparable magnitude with that of POOLS. For each one percent increase in per capita income, FDI flows increases by 0.23, 0.26 and 0.32 percent respectively. The death count due to Covid-19 outbreak is negative and statistically significant in explaining FDI flows, for every one percent increase in death count due to the pandemic, FDI flows decreased by 0.18 percent in the results in column (7). The time dummy for year 2020 is negative and significant at a 1 percent level of significant. This means that FDI flows growth, decreased by approximately 0.370 percent compare to other periods. The number of observations decreased from 195 to 81, when the dummy variable is included in the model. The real effective exchange rate is positive but insignificant in explaining FDI flows, that is for every one percent appreciation of the exchange rate, and FDI flows increase by 0.28 and 0.1 percent respectively. This is in line with the theory, even though it is insignificant.

Table 8: Random effect Regression results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	RE	RE	RE	RE	RE	RE	RE
lnCOVID	-0.060** (0.027)	-0.052** (0.026)	-0.061** (0.025)	-0.096* (0.052)	-0.179*** (0.063)	-0.179*** (0.063)	-0.179*** (0.063)
unemployment		0.010 (0.018)	0.007 (0.018)	0.043** (0.018)	0.044** (0.018)	0.044** (0.018)	0.044** (0.018)
lnrpcdgp			0.225*** (0.074)	0.255** (0.101)	0.317*** (0.105)	0.317*** (0.105)	0.317*** (0.105)
lnexchange				0.278 (0.599)	0.088 (0.571)	0.088 (0.571)	0.088 (0.571)
dumi2020					-0.368*** (0.127)	-0.368*** (0.127)	-0.368*** (0.127)
Constant	6.147*** (0.317)	5.908*** (0.349)	4.225*** (0.673)	3.060 (3.199)	4.556 (3.068)	4.556 (3.068)	4.556 (3.068)
Observations	206	195	195	81	81	81	81
Number of id	112	107	107	44	44	44	44

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.10

Table 9. Robust check and diagnostic for OLS estimates

Hypothesis	Test Statistics	Decision
Two – sample t test with equal variance: Ho: No difference between mean of budget deficit during election and other period	$\Pr (T > t) = 0.0181$	Reject the null hypothesis of no difference between the mean of budget deficit during election and other period.
Normality test: Skewness-Kurtosis test for Normality Ho: The error terms are jointly normally distributed	Joint statistic is 2.26 and the probability of obtaining such statistics under the normality assumption for Skewness is 0.214 and 0.423 for Kurtosis, and overall p-value is 0.323	Therefore, we fail to reject the null hypothesis that the error terms are normally distributed. (See figure 3 in Appendix-Plot of residuals)
Multicollinearity test: Ho: No Multicollinearity	VIF for all variables are less than 5.	Multicollinearity is not a problem.
Heteroscedasticity test: Ho: Constant variance	Breusch-Pagan/Cook-Weisberg test for heteroscedasticity provide a test statistic of 0.33 with a corresponding p-value of 0.5667	Fail to reject the null hypothesis of constant variance, so there is potential heteroscedasticity problem.
Specification error test: Ho: Model has no omitted variables	The Ramsey RESET test provide a test statistic of 0.42 with a probability of 0.7420	We fail to reject the null hypothesis; there is no possible misspecification error in the model.

Table 10. Robust check and diagnostic for Panel Data estimates

Hypothesis	Test Statistics	Decision
Test for Random effect: BP-LM Test:(RE or OLS) Ho: Variance across entities is zero, no significant differences across unit (i.e., no panel effect)	The Breusch and Pagan (LM) test for RE provide a test statistic of 11.46 with a probability of 0.0004	Since probability is less than 5%, reject the null and conclude that there is evidences of significant differences across panel, therefore one cannot run a simple OLS.
Hausman Test: choice between RE and FE: Ho: Difference in coefficients not systematic	The Hausman test gives a test statistic of 7.10 with a probability of 0.2134.	Therefore, fail to reject the null hypothesis and conclude that there is not a systematic difference in coefficients and therefore we use RE for estimation instead of FE.
Heteroscedasticity in Panel data Ho: Homoscedasticity (constant variance)	The Modified Wald Test for groupwise heteroscedasticity in FE, gives a test statistic of 6.4 x10 ³¹ with a probability of 0.000	Reject the null of homoscedasticity in the panel and therefore heteroscedasticity is a possible problem.
Cross-sectional-dependence/ contemporaneous-correlation Ho: The residuals are not correlated	Pesaran's test of cross-sectional independence provides a test statistic of 1.269 with a probability of 0.2045	Since the probability is greater than 5%, fail to reject the null, that the residuals are not correlated.
Sargan test: Test of over identification restriction:	The Sargan test of over identification provide a test	Since the computed chi2-square is less than the critical chi2-we fail to reject the

Ho: The instrument set is valid and therefore, the model is correctly specified.	statistic of 206.22 with a probability of 0.136	null, which means that the instrument set is valid and the model is correctly specified.
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This study empirically examines the impact of Covid-19 on the two economic indicators of globalisation, in emerging and developing countries with a focus on a sample size of 120 countries. We consider the effect of Covid-19 on labour, capital, import and export, markets transmission channels and shock effects on the indicators, through demand and supply and the subsequent spill over effects, using two regression models mentioned in chapter 4. The PPML (Poisson likelihood) method is used in the first likelihood method.

The Empirical findings show and establish a relationship between Covid-19 and the two indicators of globalisation, being trade and FDI. With the first regression model, the results show that there is a negative and significant impact of Covid-19 on trade and FDI. These is evidenced by the robust checks and diagnostic tests conducted on the data using the two regression models of trade and FDI.

The model is also confirmed to be working correctly from the Sargan test. This in line with the findings of (Hayakawa and Mukunoki, 2021), where it was similarly established that the spread of Covid-19 had negative and adverse effects on worldwide trade, i.e., worldwide trade in both importing and exporting countries, With the negative effects being observed more in exporting countries in developing countries. They however observed a positive effect in agricultural and essential export goods which arose due the substitution effect that happened in the market from non-essential goods and non-agricultural goods in exporting countries in developing countries.

As indicated in this model Covid-19 is negatively and significantly correlated with FDI in both developing and emerging economies. This finding is consistent with Syarifuddin and Setiawan (2022) that observed that FDI fell during the pandemic for all economic sectors; this is attributed to the negative FDI shocks that affected the different sectors in these economies.

In terms of the various effects of Covid-19 pandemic on economic levels, the findings of this study advise policy makers to keep an eye on all economic sectors affected by the pandemic and adapt the lessons adapted from the impacts of Covid-19 in future pandemic outbreaks, to

mitigate the negative FDI shocks, as a result. Another interesting finding to note is that in countries that had subsidies and unemployment fund like South Africa. The impact of Covid-19 had a positive impact on trade i.e., demand increased because the government put aside a fund to subsidize the cost of goods to the marginalised communities in poor backgrounds like slums, who were below the minimum wage in the country or were completely unemployed or who lost their jobs as a result of Covid-19 pandemic.

Covid-19 is also seen to have a negative impact on FDI, which constitutes labour mobility and capital mobility across different economies. Because of the pandemic, there was a considerable decline in FDI activities across the world economies, emerging, developing and advanced economies both being affected. Some countries were exceptions in some industries for instance South Africa was producing and exporting the Johnson and Johnson vaccine so it experienced a positive correlation in vaccine exports amongst other exporting countries. Medicinal products like vitamin C, Zinc and facemasks also increased in demand across the world as these were essentials during the pandemic.

Another interesting outcome was service industries, the aviation industry for instance was affected adversely negatively as lockdowns were imposed and most flights cancelled and planes grounded except cargo flights that even experienced an increase in demand for these services due to the delivery of some of the aforementioned goods like facemasks and vaccines across the world. Lastly, hospitals were overbooked and demand for medical services increased, the medical services were overwhelmed and almost in a crisis, the Intensive care units were fully booked, beds were unavailable for admissions and ventilators and oxygen masks increased in demand, yet there was scarcity due to high demand. Most governments insisted on moderately sick patients to manage symptoms at home and not overwhelm the understaffed medics with the demand in treatment.

The tourism industry is also worth mentioning, that was negatively and greatly affected because of cross border shutdowns and lockdown measures. Most countries around the world curtailed movement, and developing countries took the most hit. Countries like Kenya, Tanzania, South Africa and Zanzibar that for instance gained greatly from tourism activities went at a loss as lockdowns were imposed especially in emerging and developing economies, which were banned from travelling to advanced economies and vice versa.

This therefore means that previous literature that looked into a cross sectional industry impact of Covid-19 on trade per industry, had contradictory results in that some industries were

affected positively during the pandemic and some adversely, an example is (Fang, Yujie and Fao,2021). Hayakawa, Lee and Park (2022) also come to the same conclusion stating that Covid-19 had asymmetrical effects on FDI depending on the industry. Labour mobility was obviously curtailed because of lockdowns, illness and death because of the pandemic. Capital outflows also declined because of lockdowns with few exceptions that were transported as cargo goods across the world and continents.

Political factors are important to mention, especially between Africa and the rest of the world and this is attributed to the fact that the west claimed that the variants and strains mostly originated from Africa, yet there was sufficient evidence to dismiss these claims. For example, the omicron strain was claimed to originate from South Africa and this turned out false as it was discovered in a traveller who originated from Italy. This led to cross border disagreements as African leaders felt bullied and compelled to take a fall for the pandemic, yet it originated from China and the low mortality rate in Africa proved this narrative, otherwise.

From the above analysis, it is evident that Covid-19 caused both supply and demand shocks, with the negative effects influencing both exporting and importing countries in terms of trade. These findings are in line with Hayakawa and Mukunoki (2020) whose paper provides evidence on the impact of Covid-19 on worldwide trade. Covid-19 and trade are negatively correlated though it may suffice to add that this relationship may be inverse in industries such as medical products or textile face mask industry, because for instance during the Covid-19 pandemic the demand for these products is seen to increase as elucidated in previous studies. Therefore, an industry-focused study would be recommended in future just to analyse the extent of the Covid-19 pandemic on trade but on an industry specific model.

The other important thing to note from this analysis is that multicollinearity is not a problem however heteroscedasticity could be a problem because the variance of the residuals is unequal over a range of the measured values and this assumes the modelling errors have the same variance, though the OLS estimator remains unbiased, regardless.

4.3. Conclusion

The results shown that trade and foreign direct investments flows were adversely affected by the Covid-19 pandemic outbreak. Moreover, the impact is reflected in both the time dummy variable and the death cases. The magnitude of pandemic effect on both Trade flows and FDI flows, varied across different estimation technique, but remain negative and significant. Per capita income influence on FDI is observed for both OLS and RE estimation methods. Real exchange rate is only effective in explaining trade flow, but no has a positive, but not significant in explaining foreign direct investment.

The estimate of bilateral trade results show that all covariates in the equation are statistically significant and have expected signs. The impact of sharing a common border, speaking the same official language, are positive and significant which previous results of Melitz (2008) and Melitz and Toubal (2014) support. The estimates for output are as expected, positive and significant for both country of origin and destination country. Similarly, the Covid-19 coefficients for both countries of origin and destination are as expected. Negative and statistically significant. Overall, the gravity estimates obtained in this paper are widely accepted in other literatures and therefore establish the representativeness of the sample.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

5.1. Conclusion

This chapter presents the conclusions and offers some recommendations in light of the established relationship between Covid-19 on international trade and FDI as the two economic indicators of globalisation. The main finding of this study is that Covid-19 has a significant and negative impact on the two economic indicators of globalisation i.e., international trade and FDI. Moreover, control covariate included in this paper i.e., Covid-19 has relationships with the economic variables exchange rate, unemployment and GDP.

In addition to these, the results show that the outcomes are statistically significant. There is a very strong negative relationship between the dependent variable international trade and the independent variable Covid-19. There is also a significant negative relationship between log of Covid-19 (Incovid) and FDI. Consequently, the study found that there were exceptions for some countries like South Africa, of a positive relationship with Covid-19 and trade because of the unemployment fund (UIF) and government subsidies out of the sample of 120 countries.

The findings in chapter 4 have presented a discussion of the results and the outcomes of this study from a sample of 120 developing and emerging economies. Based on the results of the study, FDI and International Trade has relationship with Covid-19 controlling real GDP effects, unemployment, and exchange rate. Where we observe a positive and significant relationship between Covid-19 and international trades. In addition, there is a very strong positive relationship between the dependent FDI and the independent variable log of Covid-19, which is consistent with findings of Yao et al (2021), and Young (2022). Consequently, the study found that the pandemic has a more significant impact on international trade compared to the impact of any of the independent variables under study including real exchange rate.

5.2. Recommendations

The COVID-19 pandemic has significantly impacted global trade and foreign direct investment (FDI), prompting policymakers to reassess strategies and regulations to foster economic recovery and resilience. Here are some policy implications and recommendations for FDI and trade post-pandemic:

Promotion of Digital Trade and E-commerce:

Encourage digitalization and e-commerce to mitigate the disruptions caused by future crises. This includes investing in digital infrastructure, reducing barriers to online trade, and enhancing cybersecurity measures to facilitate secure transactions.

Diversification of Supply Chains:

The pandemic exposed vulnerabilities in global supply chains, leading to disruptions in critical sectors such as healthcare and electronics. Policymakers may consider incentivizing companies to diversify their supply chains geographically and encourage the reshoring of essential industries to reduce dependence on a single country or region.

Investment in Resilient Infrastructure:

Enhance investment in resilient infrastructure, including transportation, logistics, and healthcare systems, to better withstand future shocks. This could involve public-private partnerships and targeted government spending to upgrade infrastructure networks and improve supply chain efficiency.

Facilitation of FDI:

Streamline regulatory processes and reduce bureaucratic hurdles to attract foreign direct investment. Governments can offer tax incentives, provide investment guarantees, and establish special economic zones to encourage FDI inflows. Additionally, fostering a favourable business environment, including political stability and rule of law, can enhance investor confidence.

Support for SMEs:

Small and medium-sized enterprises (SMEs) have been particularly vulnerable to the economic impacts of the pandemic. Policymakers should implement measures to support SMEs, such as access to finance, technical assistance, and capacity-building initiatives. Supporting SMEs can stimulate economic growth, job creation, and innovation.

Trade Facilitation and Tariff Reduction:

Strengthen trade facilitation mechanisms to reduce bureaucratic barriers and enhance the efficiency of cross-border trade. Furthermore, consider lowering tariffs and trade barriers to promote international trade and economic integration. Regional trade agreements and multilateral trade negotiations can play a crucial role in facilitating trade liberalization.

Focus on Sustainable Development:

Promote sustainable development goals (SDGs) in trade and investment policies to ensure that economic recovery is environmentally sustainable and socially inclusive. This may involve incorporating environmental and social criteria into investment decisions, promoting renewable energy and green technologies, and supporting responsible business practices.

International Cooperation and Coordination:

Enhance international cooperation and coordination to address global challenges, including pandemics, climate change, and economic inequality. Collaboration among governments, international organizations, and the private sector is essential to develop coherent policy responses and build resilience against future crises.

Overall, the post-pandemic recovery presents an opportunity for policymakers to rethink traditional approaches to FDI and trade, with a focus on resilience, sustainability, and inclusivity. By implementing strategic policies and fostering international cooperation, countries can navigate the challenges posed by the COVID-19 pandemic and build a more resilient and prosperous global economy.

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