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COVID-19 and International Trade in Economic Community of West African States (ECOWAS) Member Countries

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Abstract

COVID-19 pandemic is not only a global and regional issue, it has affected developing countries, including those of the Economic Community of West Africa States. This study examined the impact of COVID-19 pandemic on free international trade in Economic Community of West African States for the period 2019Q4–2022Q2. The study used the volume of imports, exports and foreign direct investment in West African countries as dependent variables while the number of people who died of COVID-19 pandemic from the sub-region as independent variable. To this end, secondary data on the included variables were collected from various sources, including Central Bank of Nigeria, National Bureau of Statistics, National Centre for Disease Control of each ECOWAS countries, and World Bank Database. The study employed multiple regression method to carry out the analysis. The findings showed that each of the volume of imports, exports and foreign direct investment has negative relationship with COVID-19 pandemic in West African countries during the period under review. Thus, it is recommended that Governments should provide adequate mechanism to strengthen health institutions to enable them perform better, in terms of prevention of diseases towards enhancing health status among people living in the West African countries. To this end, increase in budgetary allocations to the health sector will assist in powering health institutions to render effective services to the people. Governments of West African countries should introduce expansionary monetary and fiscal policies such as loans and provide more infrastructural facilities that will massively attract foreign direct investments by creating conducive environment for increased investment in the economies. To this end, governments' expenditures on provision of infrastructures should be increased.

Keywords: *COVID-19, Imports, Exports, Foreign Direct Investment, Correlation*

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Background to the Study

The COVID-19, otherwise called Coronavirus pandemic, has generated an unprecedented global shock, with a devastating effect on international trade (WTO, 2020a). The pandemic has been described as "a global shock 'like no other' and characterized by simultaneous supply and demand disruptions in an interconnected world economy" (Chudik et al., 2020). The impacts on international trade have been evident through the fall in commodity prices in the first quarter of 2020, reduced manufacturing output and disrupted operations in global value chains (GVCs). Trade in services has been significantly affected and remittances have plummeted (UNCTAD, 2020).

The pandemic caused a short-term fiscal impact and a long-term economic impact on the nations around the world. Efforts to curb the pandemic include imposing quarantine, preparing health facilities, isolating infectious cases, and tracing contacts involving public health resources, human resources and implementation costs. It also involves health system expenditures to provide health facilities to infectious cases and the arrangement of consumables such as antibiotics, medical supplies, and personal protective equipment. Pandemics can also result in declined tax revenues and increased expenditure, which causes fiscal stress, especially in lower-middle-income countries (LMICs) where fiscal constraints are higher, and tax systems still need improvement. This economic impact severity was observed during the Ebola virus in Liberia due to the rise in public health expenditure, economic downfall, and revenue decline due to the government's inability to raise revenue because of quarantine and curfews. Economic shocks are common during pandemics due to shortage of labor because of illness, rise in mortality, and a fear-induced behavior. Other than labor shortages, disruption of transportation, closed down of workplaces, restricted trade and travel, and closed land border are reasons for the pandemic's economic slowdown (Yunfeng, Haiwei and Ren, 2021).

Coronavirus has significant social and political impacts such as clashes between nations, population displacement, and increased social tension and discrimination. Many pre-modern pandemics have caused serious demographic shifts, morality shocks, and social and political disturbance. Empirical evidence suggests that pandemics can create political tensions and unrest, especially in nations with weak institutions. The 2014 Ebola virus resulted in political and social unrest in the state as government imposed quarantine and curfews to mitigate the disease's spread with security forces that the general public perceived as a conspiracy and opposing the government. This issue caused riots and violence in the country, involving threats to health care personnel and damaging healthcare facilities and supplies. Modern pandemics have subtle social disruptions such as anxiety, social isolation, fear-inducing behavior, and economic hardships (Yunfeng et al 2021).

Empirical studies have been conducted on the economic impacts of COVID-19 pandemic. For example, an e-book entitled Economics in the Time of COVID-19, was released by Baldwin and di Mauro (2020). It includes simulation results and conceptual frameworks for the economic impacts of COVID-19 pandemic. Also, the Centre for Economic Policy Research launched a new online review on COVID-19 pandemic studies called "COVID Economics:

Vetted and Real-Time Papers." It includes formal investigations on various impacts of COVID-19 pandemic, including those on finance, people's mobility, and gender equality. The World Trade Organization (WTO) estimates that the economic impact of the pandemic will vary across countries and regions, with a lasting effect on the world economy (WTO, 2020c). Global trade is estimated to remain below the pre-pandemic trade trend through 2021. The post-pandemic economic recovery is expected to be sluggish (IMF, 2020b), which may affect both domestic and foreign investment. The disruption of economic activity from the pandemic has the potential to be the most significant adverse macroeconomic shock in the past hundred years (Hevia and Neumeyer, 2020; World Bank, 2020a).

Theoretical studies have also been carried out on economic impact of COVID-19 pandemic. For instance, Hayakawa and Mukunoki (2020) argued that COVID-19 pandemic can be expected to substantially impact international trade in various ways. Naturally, a higher COVID-19 pandemic burden in an exporting country decreases the scale of production, which leads to a decrease in export supply. Exports will decrease particularly in industries and countries where remote work/operation is less feasible. The effect of the COVID-19 burden in an importing country is mainly due to decreased aggregate demand in that country. Decreased earnings and fewer visits to retail stores will lead to decreased demand. The international trade of one country may also be affected by the COVID-19 pandemic burden in its neighboring countries. For example, decreased exports from an affected country create an export opportunity for its neighbors. On the other hand, negative production shocks due to COVID-19 pandemic in a country may reduce production in neighboring countries through supply-chain networks.

On historical front, McKibbin and Fernando (2020) reported that COVID-19 pandemic was first reported in Wuhan, Hubei province, China, in the late 2019.The COVID-19 pandemic outbreak was caused by the severe acute respiratory syndrome (SARS)-CoV-2 virus. The outbreak of the disease was triggered in December 2019 and it continued to spread across the world. Initially the epicenter of the outbreak was China with reported cases either in China or in travelers from China. Coronavirus is a member of family of viruses that circulate among animals, but can also be found in humans. Amidst the slowing down of the Chinese economy with interruptions to production, the functioning of global supply chains has been disrupted. Companies across the world, irrespective of size, which depended upon inputs from China have started experiencing contractions in production.

Transportation being limited and even restricted among countries has further slowed down global economic activities. Most importantly, some panic among consumers and firms have distorted usual consumption patterns and created market anomalies. Global financial markets have also been responsive to the changes and global stock indices have plummeted. Amidst the global turbulence, in an initial assessment, the International Monetary Fund expects China to slow down by 0.4 percentage points compared to its initial growth target to 5.6 percent, also slowing down global growth by 0.1 percentage points (McKibbin and Fernando, 2020).

The World Health Organization (WHO) declared COVID-19 a pandemic on March 11, 2020. Subsequently, to slow the coronavirus spread, many countries have imposed some form of

restrictions on people and businesses. Several countries have declared citywide or nationwide lockdowns. In addition, many countries have imposed an entry ban on foreigners. Strict restrictions were observed in the second quarter of 2020, in particular. This was the first wave of the pandemic. Afterwards, most countries started to lift such restrictions. As a result, economies also started to regain their growth—for example, GDP in the third quarter recorded positive growth in some countries, such as China (Askitas, Tatsiramos and Verheyden, 2020).

Oluwosi (2016), reported that Economic Community of West African States(ECOWAS) was formed when the treaty was signed on May 28th, 1975 in Lagos. ECOWAS consisted of sixteen countries that included Benin, Burkina Faso, Cape Verde, Cote d'Ivoire, Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone and Togo. The membership reduced to fifteen after Mauritania pulled out in December 2000. ECOWAS is one of the five regional pillars of the AEC more popularly known as the Abuja Treaty.

Before COVID-19 pandemic, the ECOWAS member countries are generally ill-prepared and ill-equipped to contain the virus or deal with their economic fallout (Vidya and Prabheesh, 2020). The healthcare system's capacity to prevent the spread of infection, handle emergencies, and provide care for the sick was frail due partly to too many years of under investment in the healthcare system. There was a deficiency of fiscal space to sufficient fund either containment or interventions in the health sector or safety nets to alleviate the effects of these interventions, particularly for low-income members of the population. For most of the ECOWAS countries, a mixture of low per-capita savings and inadequate public expenditure for provision of a formal welfare system destined that they had no means to finance their subsistence during lockdowns. A high-pitched decline in remittances exacerbated this difficulty. These features shaped the type and effectiveness of responses to the pandemic and their impacts on lives and livelihoods in the sub-region (El-Sadr and Justman, 2020).

COVID-19 pandemic has substantially impacted on free international trade in ECOWAS countries in various ways. Indeed, COVID-19 pandemic in an exporting country makes the production scale decrease, leading to a reduction in export supply and government revenue generated therefrom. Exports will decrease, notably in countries where infrastructural facilities are poor (Oluwosi, 2016).

The problem of COVID-19 pandemic in ECOWAS member countries is mainly due to decreased collective demand in those countries. Decreased incomes as a result of unemployment arising from lockdown due to COVID-19 pandemic characterized the sub-region (Mboera et al., 2020). The international trade of one nation may also be affected by the COVID-19 problem in its neighboring countries. For instance, decreased exports from a pretentious country create an export opportunity for its neighbors. On the other hand, adverse production shocks due to COVID-19 pandemic in a country may reduce production in neighboring nations through supply-chain systems.

ECOWAS member nations economies have been significantly damaged due to locking down activity at home as part of COVID-19pandemic containment strategy. Perhaps the enormous damage was brought about by immediate global reaction to the pandemic, particularly the closing of borders (impacting trade flows and tourism), and the collapse of global demand (for example, for oil, affecting ECOWAS oil producing members), as well as disturbance of supply chains (Melaine and Nonvide, 2020). In its regional economic viewpoint for the region, the International Monetary Fund (IMF, 2020b) reported that the region's economy will therapist by 3.2 percent in 2020 before recovering to a growth of 3.4 percent in 2021. The failure in 2020 is dominated by the two largest economies in the sub-region: Nigeria and Cotonu (with contractions of 5.2 percent and 7.6 percent, in turn). Exclusive of these, the sub-region's recession would be significantly shallower, at –0.7 percent, and would recover faster with a 2021 growth of 3.5 percent. Four Nations-Nigeria, Ghana, Cotonu and Mali avoided a downturn but grew at significantly lesser rates compared to 2019 (Laborde, Martin, and Vos, 2021).

The ECOWAS member countries have witnessed their first setback in poverty alleviation in two decades, threatening to reverse all the gains made to achieve the sustainable development goals. Low-income households were more severely impacted. The International Labor Organization (ILO, 2020) estimated that 80 percent of West Africans depend on employment in the informal sector for their livelihoods daily. The Organization also reported that an additional 7.8 percent of the population in ECOWAS member countries have immediately fallen into extreme poverty due to COVID-19pandemic, with 64 percent of that increase resulting from the lockdowns alone. It further estimated that 3.4 percent of the population in the sub-region, including 3.4 million children under the age of five, has fallen into severe food deprivation.

Since the establishment of ECOWAS in 1975, it has faced many challenges in its member states. The sub-region has been prone to constant political instability, cross border disputes, poverty and under-development, civil conflicts, wars, proliferation of small arms and light weapons and recently terrorism (Clark, 2013). Hence, resources and energy that should have been used for the development of ECOWAS member countries are wasted to resolve such crises. For example, during the Niger Delta crisis in Nigeria, the civil wars in Liberia, and Guinea Bissau, the security votes were increased yearly at the expense of other social infrastructure (Clark, 2013). The large amount of money spent on conflict resolutions could have been used for poverty alleviation in member states provided it was used for welfare development. All these problems combined to increase the negative impacts of COVID-19 pandemic on free international trade towards economic growth in the sub-region. It is in respect to address these problems that have increase the negative impacts of COVID-19 pandemic on free international trade in ECOWAS member countries that motivate this study.

Literature Review

Conceptual and Theoretical Review

COVID-19, otherwise known as Coronavirus belongs to the Coronaviridae family in the Nidovirales order. 'Corona' represents crown-like spikes on the outer surface of the virus.

Thus, it was named as a coronavirus. Coronavirus is minute in size (65–125 nm in diameter) and contain a single-stranded RNA as a nucleic material, size ranging from 26 to 32kbs in length.

In December 2019, Wuhan, an emerging business hub of China experienced an outbreak of a novel coronavirus that killed more than eighteen hundred and infected over seventy thousand individuals within the first fifty days of the epidemic. This virus was reported to be a member of the b group of coronaviruses. The novel virus was named as Wuhan coronavirus or 2019 novel coronavirus (2019-nCov) by the Chinese researchers. The International Committee on Taxonomy of Viruses (ICTV) named the virus as SARS-CoV-2 and the disease as COVID-19(Cui, Li and Shi, 2019; Lai, Shih, Ko, Tang and Hsueh, 2019; WHO, 2020).

Free International Trade: Free International trade or Free Trade means, growing integration of the national economies, openness to trade, financial flows, foreign direct investment and the increasing interaction of people in all facets of their lives. International integration implies the adoption of common policies by the individual countries. Free trade includes flows of goods and services across borders, international capital flows, reduction in tariffs and trade barriers, free migration, and the spread of technology, and knowledge beyond borders (Parisa and Hashem, 2014). This term which was introduced in early 1980, has never been precisely defined, but frequently used in political economy. It simply means openness to trade in terms of exports and imports, financial flows, foreign direct investment and the increasing interaction of people in all facets of their lives. It also implies internationalization of production, distribution and marketing of goods and services. International integration implies the adoption of common policies by the individual countries (Afzal, 2008).

Longley (2018) state that free trade is largely a theoretical policy under which governments impose absolutely no tariffs, taxes, or duties on imports, or quotas on exports. In this sense, free trade is the opposite of protectionism, a defensive trade policy intended to eliminate the possibility of foreign competition. In reality, however, governments with generally free-trade policies still impose some measures to control imports and exports.

Free trade has both advantages and disadvantages. The advantages of free trade include:

i. **It stimulates economic growth:** Even when limited restrictions like tariffs are applied, all countries involved tend to realize greater economic growth.
ii. **It helps consumers:** When trade restrictions are removed, consumers tend to see lower prices because more products imported from countries with lower labour costs become available at the local level.
iii. **It increases foreign investment:** When there are no trade restrictions, foreign investors tend to pour money into local businesses helping them expand and compete. In addition, many developing and isolated countries benefit from an influx of money from U.S. investors.
iv. **It reduces government spending:** Governments often subsidize local industries, like agriculture, for their loss of income due to export quotas. Once the quotas are lifted, the government's tax revenues can be used for other purposes.

v. **It encourages technology transfer:** In addition to human expertise, domestic businesses gain access to the latest technologies developed by their multinational partners *(Longley, 2018; Baldwin, 1985).*
vi. However, free trade is not without its disadvantages, which include:
vii. It causes job loss through outsourcing: Tariffs tend to prevent job outsourcing by keeping product pricing at competitive levels. Free off tariffs, products imported from foreign countries with lower wages cost less. While this may be seemingly good for consumers, it makes it hard for local companies to compete, forcing them to reduce their workforce.
viii. It encourages theft of intellectual property: Many foreign governments, especially those in developing countries, often fail to take intellectual property rights seriously. Without the protection of patent laws, companies often have their innovations and new technologies stolen, forcing them to compete with lower-priced domestically-made fake products.
ix. It allows for poor working conditions: Similarly, governments in developing countries rarely have laws to regulate and ensure safe and fair working conditions. Because free trade is partially dependent on a lack of government restrictions, women and children are often forced to work in factories doing heavy labour under slave-like working conditions.
x. It can harm the environment: Emerging countries have few, if any environmental protection laws. Since many free trade opportunities involve the exporting of natural resources like lumber or iron ore, clear-cutting of forests and un-reclaimed strip mining often decimate local environments.
xi. It reduces revenues: Due to the high level of competition spurred by unrestricted free trade, the businesses involved ultimately suffer reduced revenues. Smaller businesses in smaller countries are the most vulnerable to this effect (Mankiw, 2015; Longley, 2018*)*

Exports

Export is described by Kromtit, Kanadi, Ndangra and Lado (2017), as the sale of goods produced in one country to other counties for future sale or consumption. Exports are described as the sale of goods produced in one country to other countries for future sale or consumption. Exports are the goods and services produced in one country and purchased by residents of another country. It doesn't matter what the good or service is. It doesn't matter how it is sent. It can be shipped, sent by email, or carried in personal luggage on a plane. If it is produced domestically and sold to someone in a foreign country, it is an export. Exports are one component of international trade. The other component is imports. They are the goods and services bought by a country's residents that are produced in a foreign country. Combined, they make up a country's trade balance. When the country exports more than it import, it has a trade surplus. When it imports more than it exports, it has a trade deficit (Kimberly, 2017).

Nigeria exports can be broadly classified into four namely: agriculture produce, manufactured commodities, solid minerals exports, and crude oil (Odu, 2015). Akeem (2011) defined agricultural exports as the exports of agricultural commodities. These include: groundnuts,

cocoa, rubber, palm products, cotton etc. Manufacturing exports are the exports of manufactured commodities, which include: automobile, computers, electrical and electronics, etc. Mining exports is defined by Akeem (2011) as the exports of minerals, including coal, colombite, tin, precious stones, etc.

Imports

Imports are goodsand services brought into one country from another. The word import is derived from the word port since goods are often shipped via boat from foreign countries. Along with exports, imports form the backbone of external trade. Imports are important for businesses and individual consumers. Countries often need to import goods that are either not readily available domestically or are available cheaper overseas. Individual consumers also benefit from the locally produced products with imported components as well as other products that are imported into the country. Oftentimes, imported products provide a better price or more choices to consumers, which help increase their standard of living (Grimsley, 2017). The higher the value of imports entering a country compared to the value of exports, the more negative that country's balance of trade becomes (Mohan, 2009). In other words, persistent rise in imports over exports will, in the long run, worsen the current account component of the balance of payment for the importing country.

According to Kimberly (2017), imports are goods and services bought from other countries by residents of a country. Residents include citizens, businesses and the governments. Like exports, imports are carried by email, in personal luggage on a plane or shipped from one country to another. For instance, while heavy machineries are carried in ships, light ones are carried by email or in personal luggage. From the review above, it can be stated that imports are goods and services bought from other countries by residents of a country. Residents include citizens, businesses and the governments. Like exports, imports are carried by email, in personal luggage on a plane or shipped from one country to another.

Foreign Direct Investment

Foreign direct investment (FDI) is an investment in a business by an investor from another country for which he/she has control. Control of a firm defined as owning 10% or more of the business. Businesses that make foreign direct investments are often called multinational corporations (MNCs). According to Grimsley (2017), foreign direct investment (FDI) is an investment in a business by an investor from another country for which he/she has control. The Organization of Economic Cooperation and Development (OECD) define control of a firm as owning 10% or more of the business. Businesses that make foreign direct investments are often called multinational corporations (MNCs). An MNC may make a direct investment by creating a new foreign enterprise, which is called a Greenfield investment, or by the acquisition of a foreign firm, either called an acquisition or brownfield investment (Chen, 2018). In the context of foreign direct investment, advantages and disadvantages are often a matter of perspective. Foreign direct investment may provide some great advantages for the MNC but not for the foreign country where the investment is made. On the other hand, sometimes the deal can work out better for the foreign country depending upon how the investment turns out. When internalization occurs across national boundaries, FDI leads to the creation of multinational corporations (Krugman, 1992).

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One theory that can be used to explain the relationship between COVID-19 pandemic and free trade is dependency theory. Dependency theory was first propounded by the Argentine economist and statesman Raúl (1954). But, the theory gained prominence in the 1960s and 1970s.Theory of dependency is centered on external influences, political, economic, cultural, Multinational corporations, international commodity markets, foreign aid, foreign investment (Ferraro, 1996). Dependency theorists argue that existing national and international economic and political systems are the cause of their unjust situations. They call for systemic change to solve the problems. They want abrupt, non-linear, fundamental change. Rather than endorsing and embracing stability, they call for radical change. Lall (1975) argues that the concept of dependency is defined "in a circular manner"; that is less developed countries are poor because they are dependent. Dansabo (2013) further argues that both modernization and dependency theories did not look at the peculiarity of development problems in Africa and the two theories cannot stand as development concepts for all third world countries. According to Etudaiye (2014), one of the major current critiques of dependency theory is that the theory continues to base its assumptions and results on the nation- state. Ferraro (1996) criticized dependency theory for placing too much emphasis on material and economic factors.

Empirical Review

Several empirical studies have been conducted on the impact of COVID-19 pandemic on economies. Some of them are reviewed below. Hayakawa and Mukunoki (2020) examined the relationship between COVID-19 and international trade among 186 countries in the world in the first quarter of 2020. The disease burden of COVID-19 is measured in terms of the number of cases and deaths. The findings of the study are summarized as follows. First, the COVID-19 burden in exporting countries has a significantly negative effect on trade. Second, this negative impact of exporters' COVID-19 burden is seen in exports from developing countries but not from developed countries. Third, the COVID-19 burden in an exporter's neighboring countries has a positive effect on their exports. Fourth, importers' COVID-19 burden has positive effects on trade in the agricultural industry, whereas exporters' COVID-19 burden has negative effects, particularly in the textile, footwear, and plastic industries.

Hayakawa and Mukunoki (2020), investigated how the effects of COVID-19 on international trade changed over time. To do that, the study used monthly data on worldwide trade from January to August in 2019 and 2020. Specifically, the study data included the exports of 34 countries to 173 countries. The study estimated the gravity equation by employing various variables as a proxy for the COVID-19 damage. The findings of the study are summarized as follows: First, regardless of our measures to quantify the COVID-19 pandemic, the study found significantly negative effects of COVID-19 on the international trade of both exporting and importing countries. Second, those effects, especially the effects of COVID-19 in

importing countries, tended to become insignificant since July 2020. This result implies that the harmful impacts of COVID-19 on international trade were accommodated after the first wave of the pandemic to some extent. Third, the study found heterogeneous effects across industries. The negative effects on non-essential, durable products persist for a long time, whereas positive effects in industries providing medical products were observed.

Maliszewska et al. (2020), used a computable general equilibrium model to illustrate the transmission channels and impact of COVID-19 on output and trade. They find that a baseline global pandemic scenario would see GDP decline by 2 per cent below the benchmark for the world, which is 2.5 per cent lower for developing countries and 1.8 per cent lower for industrial countries. Adam et al. (2020a, 2020b) calibrate a dynamic general equilibrium model for Uganda to examine the macroeconomic shock of the pandemic in sub-Saharan Africa. The study finds that the recovery will depend on how the public finances are restored and recommends seeking external support.

Julius et al. (2020) on the economic impact of COVID-19 on Namibian economy evident that the lockdown measures imposed on various sectors of the economy resulted to a decrease in Gross Domestic Product (GDP). Hasanat et al. (2020) who evaluated the impact of coronavirus on Malaysian e-business revealed that the emergence of the COVID-19 pandemic has led most medium and small scale businesses to shut down and thus leading to a fall in the economy's GDP especially as a result of lockdown measures inflicted by the government.

Bairoliya and Imrohoroglu (2020) adopted the overlapping generations' model to mimic the United States economy and explored the consequences of lockdown policies. Findings from the study confirmed that the general population is considered for the lockdown measure thereby resulting in a drastic fall in GDP and increase cost of businesses instead of considering the lesser population who are prone to the risk of contracting the disease and who have underlying health conditions for effective self-isolation. The lockdown measure denies many individuals to their businesses, exposing many to job loss, as well as leading many to starvation and livelihood deterioration. Lau et al. (2020) considered pre and post lockdown confirmed domestic and international cases to examine the relationship between flights connectivity and the rate at which the virus (COVID-19) is spread. The result proves a pronounced decline in economic growth rate and raise in COVID-19 cases due to lockdown imposition in China.

Arora, Bhaukhandi, and Mishra (2020), used computational experiments to replicate the short term effect of lockdown in forty-four countries including all major economics. They postulate that despite its restriction on movement, social, economic, and industrial activities, the lockdown serve as a vaccine to the natural environment and thereafter help the environment to rebound. Goolsbee and Syverson (2020), observed the economic consequences of COVID-19 using data on customer visits to businesses across 110 different industries in China. They affirmed that the drastic fall in economic activity in the state started earlier before the imposition of lockdown order, and thus was rather an achievement than an ill decision. Karin et al. (2020) considered a cyclic schedule model to investigate a tenable approach to exit the lockdown, and provide means for continuous economic activity. A 4-day work and 10-day off

strategy was adopted and the findings revealed that the situation of the health crises could be suppressed particularly on a relaxed lockdown order rather than a total lockdown order.

Gonzalez-Eiras and Niepelt (2020) assert that the lockdown response order to COVID-19 pandemic inflicted a severe output loss and consequently affected the United States economy, causing a draw back in the economic activity by an approximate of 9.5% of annual Gross Domestic Product (GDP). Bhuiyan, Sakib, Pakpour, Griffiths, and Mamun (2020) examine the emotional consequences of lockdown to social and economic activities in Bangladesh. The findings reported a number of suicide cases which were as a result of lockdown, and thereby causing starvation, increase in poverty level, close of business, loss of job, and thus no or less consideration or intervention was provided by the relevant authorities. Oum and Wang (2020) examines the relationship between lockdown and social activity restriction policies for COVID-19; result affirms that there is rise in external cost of infection risks as individuals do not consider the burden they impose on others and relevant healthcare system when deciding on their social activity and mobility.

Majune and Addisu (2021), analyzed how Kenya's import and export trade was affected by lockdown policies during the COVID-19 outbreak. Analysis is conducted using a weekly series of product-by-country data for the one-year period from July 1, 2019 to June 30, 2020. Analysis using an event study design shows that the introduction of lockdown measures by trading partners led to a modest increase of exports and a comparatively larger decline of imports. The decline in imports was caused by disruption of sea cargo trade with countries that introduced lockdown measures, which more than compensated for a significant rise in air cargo imports. Difference-in-differences results within the event study framework reveal that food exports and imports increased, while the effect of the lockdown on medical goods was less clear-cut. Overall, we find that the strength of lockdown policies had an asymmetric effect between import and export trade.

Hubert and Sangeeta (2021) examined how the COVID-19 pandemic has impacted merchandise trade between and with Commonwealth countries. It uses bilateral trade data from Base Analytique du Commerce International (BACI) to (i) estimate trade losses, i.e. variations in intra- and extra-Commonwealth trade in goods from the pre-pandemic trend, and (ii) simulate the impact of the pandemic on potential trade flows of Commonwealth countries under three scenarios: Consensus, Pessimistic and Optimistic. The scenarios are based on macroeconomic forecasts released by the International Monetary Fund (IMF), the World Bank and the World Trade Organization (WTO) in the third and fourth quarters of 2020. The simulation results suggest that Commonwealth trade will be negatively affected, with developed Commonwealth countries being impacted more than developing countries. They also show that the adverse effects on trade will depend on the duration and severity of the disease. The analysis demonstrates the interconnected and fragile nature of the economies, and highlights the need for a coordinated response for recovery.

Espoir and Boaz (2022), investigated the effect of coronavirus disease 2019 on international trade between Sub-Saharan African countries during the first quarter of 2020. The disease

problem of COVID-19 is measured based on the number of cases and deaths. The findings of this study show that the COVID-19 problem in exporting countries has a significantly negative effect on trade and positive significance in importing countries. This negative effect of exporters' COVID-19 crisis is seen in exports from developing countries. The COVID-19 problem in an exporter's neighboring nation has a positive impact on its exports. Importers' COVID-19 problem has positive effects on trade in the agricultural industry, while exporters' COVID-19 problem has adverse effects, for the most part, in the textile, footwear, and plastic industries.

Gaps in the Literature

The review above indicated that a number of empirical studies have been carried out on impact of COVID-19 on international trade and economic growth in countries around the world. It is important to note that these studies yielded conflicting results and conclusions. The methodology used in the present study differs from past studies in several important aspects. First, the scope of the present study is on ECOWAS member countries, which are not covered in the empirical studies reviewed above. Second, none of the empirical studies reviewed above included foreign direct investment as dependent variable in their model. Third, none of the empirical studies reviewed above used multiple correlation as estimation technique. These observed shortcomings have created gaps in the literature, thus necessitated another method of explaining the relationship between COVID-19 and free trade ECOWAS member countries using the method of multiple correlation.

Methodology and Data

The study adopted ex-post facto design to investigate the impact of COVID-19 on free trade in ECOWAS member countries during the 2019 Q4-2022 Q2. To achieve this, the research used time series data on included variables and the method of ordinary least squares multiple regression to carry out the analysis. To this end, the ordinary least square (OLS) regression method was used to determine the relationships between variables. The adoption of this research design is based on the fact that the study relied on historic data obtained from National Center for Disease Control (NCDC), and World Bank Database.

This study is anchored on dependency theory propounded by Raúl (1954). Theory of dependency is centered on external influences, political, economic, cultural, Multinational corporations, international commodity markets, foreign aid, and foreign investment. Dependency theorists argue that existing national and international economic and political systems are the cause of their unjust situations.

The model used in this study mirrors the works of Hayakawa and Mukunoki (2020) on the effects of COVID-19 on international trade in 34 countries. The model is given as:

$$EXP_{ijt} + IMP_{ijt} + MED_{ijt} + U_t = f(DEC_t) \quad (1)$$

Where:

EXP_{ijt} = Exports from country i to country j at time t;

IMPijt = Imports from country i to country j at time t;
MEDijt Medical facilities from country i to country j at time t;
DECt = Total Death from COVID-19 ECOWAS member countries at time t; and
Ut = Error Term.
Model (3.1) was modified by replacing Medical facilities (MEDijt) with foreign direct investment (FDIijt). Since Hayakawa and Mukunoki (2020) model adopted in this research is an optimization model, it is suitable for application in ECOWAS member countries. The regression form of the model is stated in log-linear form as:

$\beta_1 \ln EXPijt + \beta_2 \ln IMPijt + \beta 3 \ln FDIijt + \beta_0 = \ln DECt$---------- (2)
Our a priori expectations are that $\beta_0 = 0, \beta_1, \beta_2, \beta 3 < 0$

Double log was introduced to convert all data (which were in different units) to the same unit to enable easy estimation. The ordinary least square (OLS) regression method is preferred over other methodologies due to its various advantages. Firstly, the OLS technique is unbiased and works efficiently with small sample sizes which is the case in the current study. Secondly, the OLS is flexible and applicable irrespective of whether the underlying variables are mutually co-integrated. Furthermore, the approach allows for the simultaneous estimation of long-run and short-run components of the model, thereby remedying the problems associated with omitted variables and serial autocorrelation (Gujarati and Sangeetha, 2007).

Data used are from both exports and imports in ECOWAS member countries. The export values are encompassed in the dataset after multiplying by 1.05 to adjust freight and insurance charges roughly. The data on Foreign Direct Investment are taken from the World Economic Outlook by the IMF. We capture those impacts solely by COVID it.. As a time-variant nation-pair element, a Regional Trade Agreement (RTA) dummy variable is included that takes a value of one if two nations are members of the same RTA and zero otherwise. The RTA dummy variable is drawn from (Egger & Larch, 2008) and its 2020 update using RTA information obtainable on the World Trade Organization website (Egger & Larch, 2008).

As mentioned earlier, this study used the number of COVID-19 deaths collected from the African Centre for Disease Prevention and Control (ACDPC) quarterly issues. These data have been collected from health authorities' reports from ECOWAS member countries. The quantitative data collected was summarized and the model estimated by using EViews 10.0 Econometric software.

Empirical Results and Analysis
This section reports the estimated results. Standard errors are clustered by country pairs. Columns (i) and (ii) in Table 1 show baseline results. In both columns, the dependent variable is trade values.

Table 1: Baseline Results

Variables	(a)	(b)	(c)	(d)	(e)	(f)
RTA Dummy	0.034 [0.093]	0.024 [0.026]	0.137* [0.062]	0.152** [0.042]	0.032 [0.035]	0.036 [0.026]
Ln Importer's FDI	0.175 [0.135]	-0.026 [0.138]	0.426* [0.221]	0.348* [0.218]	0.232 [0.132]	0.242 [0.126]
Ln Exporter's FDI	0.131 [0.235]	-0.127 [0.313]	0.323* [0.230]	0.324* [0.224]	0.478*** [0.127]	0.488*** [0.125]
Ln Importer's Deaths		−0.022 [0.024]		−0.015 [0.014]		0.006 [0.023]
Ln Exporter's Deaths		−0.016*** [0.013]		−0.023*** [0.012]		−0.013*** [0.064]
Trade Period	19Q4-22Q2	19Q4-22Q2	19Q4-22Q2	19Q4-22Q2	19Q4-22Q2	19Q4-22Q2
COVID Period	19Q4-22Q2	19Q4-22Q2	19Q4-22Q2	19Q4-22Q2	19Q4-22Q2	19Q4-22Q2
Number of Observations	15	15	15	15	15	15

Notes: ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. Standard errors stated in parentheses are gathered by country pair. In all specifications, we control for country-pair fixed effects and time fixed effects. Number of Observations = 15 ECOWAS member countries.
Source: Authors' Computation 2022, Using E-Views 10.0

The impact of the COVID-19 on free trade is measured as the log of the death numbers (column b) during the period under review. Control variables such as RTA dummy and FDI variable have positive and negative, but their coefficients are not significant respectively. The main variables of the COVID-19 showed significantly negative coefficients for both importers and exporters. The deaths in both countries negatively affected trade. However, those in importing countries do not have significant coefficients. Therefore, deaths from COVID-19 leading to decreases in workforce size and efficiency in exporting countries result in a decreased trade.

In columns (c) and (d), we replace the dependent variable with the trade values for June 2022. This replacement aims to address the fact that the trade contracts fulfilled in December 2019 and January 2020 might have been made in October/November 2019, during which time most of the countries were still unaware of the impact of COVID- 19. On the other hand, in columns (e) and (f), we replace the variables for COVID-19 with those from December 2019 to January 2020 to take into account the possibility that the effects of the COVID-19 may have a time lag. Such a time lag is likely because trade may not be realized in the same month that it is contracted. Due to data constraints, however, we can take only a 1-month lag into account. The results of the COVID-19 variables in both kinds of robustness checks show similar products to our baseline results; that is, it showed significantly negative coefficients for both importers and exporters. This means that increase in the number of deaths from COVID-19 lead to less imports and exports in both countries. One notable difference is that the RTA dummy and FDI variables have significant coefficients in some specifications.

In Table 2, the study examined how the effects of COVID-19 differ according to country income level. Accordingly, we introduce the interaction terms between COVID- 19 variables.

A dummy variable that take a value of one of the exporter or importer is categorized as a high-income country according to the World Bank classification.

Table 2: Estimated results based on income-level

Variables	(a)	(b)	(c)	(d)	(e)	(f)
RTA Dummy	0.032 [0.029]	0.022 [0.052]	0.121* [0.065]	0.125 [0.084]	0.039 [0.039]	0.044 [0.039]
Ln Importer's FDI	0.052 [0.134]	0.053 [0.161]	0.255 [0.328]	0.307 [0.259]	0.017 [0.132]	0.187 [0.149]
Ln Exporter's FDI	0.453*** [0.123]	0.340*** [0.148]	0.738*** [0.204]	0.751*** [0.202]	0.832*** [0.202]	0.806*** [0.185]
Ln(Importer's Deaths)		-0.010 [0.013]		-0.003 [0.004]		0.002 [0.003]
*High Income Importer		0.025 [0.023]		0.008* [0.004]		0.001 [0.007]
Ln(Exporter's Deaths)		−0.042*** [0.032]		−0.017*** [0.006]		−0.018*** [0.004]
* High Income Exporter		0.035*** [0.016]		0.008 [0.005]		0.028*** [0.008]
Trade Period	19Q4-22Q2	19Q4-22Q2	19Q4-22Q2	19Q4-22Q2	19Q4-22Q2	19Q4-22Q2
COVID Period	19Q4-22Q2	19Q4-22Q2	19Q4-22Q2	19Q4-22Q2	19Q4-22Q2	19Q4-22Q2
Number of Observations	15	15	15	15	15	15

Notes: ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. Standard errors stated in parentheses are gathered by country pair. In all specifications, we control for country-pair fixed effects and time fixed effects. Number of Observations = 15 ECOWAS member countries. 19Q4-22Q2 = 2019 Q4 to 2022 Q2
Source: Authors' Computation 2022, Using E-Views 10.0

On table 2, we find an interesting contrast in export variable. Although the coefficients for exporter death are again estimated to be significantly negative (column b), their interaction terms with a high-income exporter dummy have significant positive coefficients. Particularly in the specifications in columns (e) and (f), the absolute magnitude is similar between the non-interacted and interacted variables. This similar magnitude implies that the COVID- 19 deaths in exporting countries has significant negative effects on exports from those countries. This may be due to the fact that production is costly in ECOWAS member countries due to their inadequate infrastructure, but have a comparative advantage in labor-intensive industries.

Again, the coefficients for importer death are significantly negative (column b). Their interaction terms with a high-income importer dummy have significant positive coefficients. Particularly in the specifications in columns (e) and (f), the absolute magnitude is similar between the non- interacted and interacted variables. This similar magnitude implies that the COVID- 19 deaths in importing countries have significant negative effects on imports into those countries.

Conclusion and Recommendations

The study revealed that deaths from COVID-19 which led to decreases in workforce size and efficiency in exporting countries resulted in a decreased trade. The study also found that the COVID- 19 deaths in exporting countries has significant negative effects on exports from those countries. Again, the study revealed that the COVID- 19 deaths in importing countries have significant negative effects on imports into those countries. Thus, the study concludes that COVID-19 generally has negative impact on exports, imports and foreign direct investment in ECOWAS member countries. This demonstrates that the spread of COVID-19 caused both supply and demand shocks in both importing and exporting countries.

In view of the findings of this study, the following recommendations are made, viz: Governments of ECOWAS member countries should address supply-side shocks to maintain the stability of trade in the sub-region. Supporting ECOWAS member countries is particularly important because the COVID-19 deaths resulted in more significant decreases in exports, imports and foreign direct investment from these countries. In addition, governments of ECOWAS member countries should address the challenges of poverty. This can be done by reducing tax, and provide more infrastructural facilities. Increased budget to health sector can also boost the performance of the sector in terms of preventive and curative diseases.

References

Adam, S., Henstridge, M. & Lee, S. (2020a). Using epidemiological and macroeconomic models to set out the adjustment to the aftermath of the COVID-19 pandemic in Sub-Saharan Africa, *Working Paper,* July. Oxford: OPM.

Adam, S., Henstridge, M. & Lee, S. (2020b). The impact of global economic disruption is as big a threat to low-income countries as the direct effects of COVID-19. *VoxEU, 8 September. https://voxeu*

Afzal, M., (2007). The impact of globalization on economic growth of Pakistan, *The Pakistan Development Review,* 46(4), 723–734

Akeem, O. U. (2011), Non-oil export determinants and economic growth, *European Journal of Business Management, 3*(3), 236-257.

Arora, S., Bhaukhandi, K. D., & Mishra, P. K. (2020). *Coronavirus lockdown helped the environment to bounce back: The science of the total environme*nt, Retrieved from https://doi.org/10.1016/j.scitotenv.2020.140573

Askitas, N., Tatsiramos, K. & Verheyden, B. (2020). Lockdown strategies, mobility patterns and COVID-19, *COVID Economics,* 23: 263–302.

Bairoliya, N. & Imrohoroglu, A. (2020). Macroeconomic consequences of stay-at-home policies during the COVID-19 pandemic, *COVID Economics,* 13, 71–90.

Baldwin, R. & Di-Mauro, B. W. (2020). Economics in the time of COVID-19. *A Vox EU.org eBook,* CEPR Press.

Baldwin, R. E (1985). The political economy of U.S. import policy, Cambridge: MIT Press.

Bhuiyan, A. K. M., Sakib, N., Pakpour, A. H., Griffiths, M. D., & Mamun, M. A. (2020). COVID-19-related suicides in Bangladesh due to lockdown and economic factors: Case study evidence from media reports, *International Journal of Mental Health and Addiction.* Retrieved from https://doi.org/10.1007/s11469-020-00307-y

Chen, J. (2018). *Multinational corporation – MNC*, Available at: https://www.investopedia.com/terms

Chudik, A., Mohaddes, K. M., Hashem, P. Raissi, M. & Rebucci, A. (2020). Economic consequences of COVID-19: A counterfactual multi-country analysis, *VoxEU,* 19 October. https://voxeu.org/article/

Clark, E. V. (2013). The economic community of West African States (ECOWAS): The challenges to the implementation of the protocol on the free movement of goods, persons and establishments, *Pakistan Journal of Social Sciences, 10*(1), 41-48.

Cui, J., Li F. & Shi, Z. L. (2019). Origin and evolution of pathogenic coronaviruses. *Nat Rev Microbiology,* 17(3), 181–192.

Dansabo, M. (2013). Contending perspectives on development: A critical appraisal, *Mediterranean*
Journal of Social Sciences, 4(16), 24 52.

Egger, P. & Larch, M. (2008). Interdependent preferential trade agreement memberships: An empirical analysis, *Journal of International Economics,* 76, 384-399, https://doi.org/10.1016/j.jinteco.2008.08.003

El-Sadr, W. M. & Justman, J. (2020). Africa in the path of COVID-19, *New England Journal of Medicine,* 383, e11. https://doi.org/10.1056/NEJMp2008193

Espoir, L. M. & Boaz, M. M. (2022). The effect of COVID-19 on international trade: Evidence from Sub-Saharan Africa, *American Journal of Industrial and Business Management, 12*, 73-87

Etudaiye A. S. (2014). *Oil and National development in Ghana, 2007-2014*. (Online), 1-91. http://www.unn.edu.ng/publications/files/salami%20complete%20project.

Ferraro, V. (1996). *Dependency theory: An introduction.* 1st ed. (e-book).

Gonzalez-Eiras, M., & Niepelt, D. (2020). On the optimal "lockdown" during an epidemic. *Center for Economic Studies and Ifo Institute (CESifo) Munich, Working Paper* 8240. Retrieved from https://hdl.handle.net/10419/216636

Goolsbee, A., & Syverson, C. (2020). Fear, lockdown, and diversion: Comparing drivers of pandemic economic decline 2020, *National Bureau of Economic Research, Working Paper* 27432. Retrieved from https://www.nber.org/papers/w27432

Grimsley, S. (2017). Importing and exporting in a global market: Definition, process & importance, Available at: https://study.com/academy/lesson/importing-and-exporting-in-a-global-market.html

Gujurati, D. N. & Sajeetha, G. (2007). *Basic econometrics*, New Delhi, Tata Mc-Graw-Hill Publishing Company Limited.

Hasanat, M. W., Hoque, A., Shikha, F. A., Anwar, M., AbdulHamid, A. B., & Tat, H. H. (2020). The impact of coronavirus (COVID-19) on e-business in Malaysia, *Asian Journal of Multidisciplinary Studies,* 3(1), 85–90.

Hayakawa, K. & Mukunoki, H. (2020). Impacts of COVID-19 on international trade: evidence from the first quarter of 2020, *Institute of Developing Economies Discussion Paper,* 791

Hayakawa, K. & Mukunoki, H. (2021). The impact of COVID-19 on international trade: Evidence from the first shock, *Journal of the Japanese and International Economies,* 60: 1-12

Hevia, C. & Neumeyer, P. A. (2020). A perfect storm: COVID-19 in emerging economies, *VoxEU,* 21 April. https://voxeu.org/article/

Hubert, E. & Sangeeta, K. (2021). The impact of the COVID-19 pandemic on merchandise trade in commonwealth countries, *International Trade Working Paper 2021/02,* Commonwealth Secretariat, London.

International Monetary Fund (IMF, 2020b). *World economic outlook database.* October. Washington, DC: IMF.

Julius, E., Nuugulu, S. & Julius, L. H. (2020). *Estimating the economic impact of COVID-19: A case study of Namibia*, Munich Personal RePEc Archive.

Karin, O., Bar-On, Y. M., Milo, T., Katzir, I., Mayo, A., Korem, Y. & Alon, U. (2020). Adaptive cyclic exit strategies from lockdown to suppress COVID-19 and allow economic activity, *Journal of Travel Medicine,* 12, 21-40

Kimberly, A. (2017). *What are exports? Their effect on the economy*, Available at https://www.thebalance.com /exports definitional

Kromtit, M. J., Kanadi, C., Ndangra, D. P. & Lado, S. (2017). Contribution of Non-oil Export to Economic Growth in Nigeria, *International Journal of Economics and Finance*, 9(4), 1916-1971.

Krugman, P. R (1992). Does the new trade theory require a new trade policy? ,*World Economy* 15(4), 2-18

Laborde, D., Martin, W., & Vos, R. (2021). Impacts of COVID-19 on global poverty, food security, and diets: Insights from global model scenario analysis, *Agricultural Economics,* 52, 375-390. https://doi.org/10.1111/agec.12624

Lai, C. C., Shih, T. P., Ko, W. C., Tang, H. J. & Hsueh, P. R. (2019). Severe acute respiratory syndrome Coronavirus 2 (SARS-CoV-2) and corona virus disease: The epidemic and the challenges, *International Journal of Ant-microbiology Agents,* 105924

Lall, S. (1975). Is 'dependence' a useful concept in analyzing underdevelopment? *World Development,* 3 (11-12), 799-810.

Lau, H., Khosrawipour, V., Kocbach, P., Mikolajczyk, A., Schubert, J., Bania, J., & Khosrawipour, T. (2020). The positive impact of lockdown in Wuhan on containing the COVID-19 outbreak in China. *Journal of Travel Medicine,* 1–7, Retrieved from https://doi.org/10.1093/jtm/taaa037

Longley, R (2018). What is free trade? definition, theories, pros, and cons, available at:https://www.thoughtco.com/free-trade-definition-theories-4571024

Majune, K. S. & Addisu, A. L. (2021). The effect of lockdown policies on international trade: Evidence from Kenya. *Brookings Institution Global Working Paper,* 148.

Maliszewska, M., Mattoo, A. & Van der-Mensbrugghe, D. (2020). *The potential impact of COVID-19 on GDP and trade: A preliminary assessment*, Washington, DC: World Bank.

Mankiw, N. G. (2015). Economists actually agree on this: The wisdom of free trade*, New York Times, 12: 78-90, April 24.*

Mboera, L. E., Akipede, G. O., Banerjee, A., Cuevas, L. E., Czypionka, T., Khan, M. et al. (2020). Mitigating lockdown challenges in response to COVID-19 in Sub-Saharan Africa, *International Journal of Infectious Diseases,* 96, 308-310.

McKibbin, W. & Fernando, R. (2020). *The global macroeconomic impacts of COVID-19: Seven scenarios,* A publication of Australian National University; the Brookings Institution; and Centre of Excellence in Population Ageing Research (CEPAR), March 2020.

Melaine, G., & Nonvide, A. (2020). Short-term impact of COVID-19 on poverty in Africa, *COVID-19 Economics,* 15, 184-195

Mohan, J. R. (2009). *International business,* Oxford University Press, New Delhi and New York

Odu, N. (2015). Diversification of Non-oil export product as precondition for accelerated real economic growth in Nigeria, *International Journal of Managerial Studies and Research* 3 (7), 104-112.

Oluwusi, O. O (2016). *The impact of regional integration on Nigeria's imports: A case of ECOWAS common external tariff on agro-processing*, Unpublished Thesis presented in partial fulfilment of the requirements for the Degree of Master of Science (Agricultural Economics) in the Faculty of Agric. Sciences at Stellenbosch University December.

Oum, T., & Wang, K. (2020). Socially optimal lockdown and travel restrictions for fighting communicable virus including COVID-19, *Transport Policy,* 96, 94–100. Retrieved from https://doi.org/10.16/j.tranpol.2020.07.003

Parisa, S. & Hashem, S. J. (2014). *Globalization and economic growth: Empirical evidence on the role of complementarities,* Cross Mark publications, Malaysia.

Rivera-Batiz, L A. & Romer, P. M. (1991). Economic integration and endogenous growth, *Quarterly Journal of Economics* 106(2), 531-55.

UNCTAD (United Nations Conference on Trade and Development) (2020). Investment trends monitor, Geneva: UNCTAD.

Vidya, C. T. & Prabheesh, K. P. (2020). Implications of COVID-19 pandemic on the global trade networks, *Emerging Markets Finance and Trade,* 56, 2408-2421. https://doi.org/10.1080/1540496X.2020.1785426

World Bank (2020a). 2020 Year in Review: The impact of COVID-19 in 12 charts, Washington, DC: World Bank.

World Health Organization (WHO, 2020). *Laboratory testing for coronavirus disease (COVID-19) in suspected human cases: interim guidance. March*, World Health Organization.

WTO (2020c). *Trade shows signs of rebound from COVID-19, recovery still uncertain*, Press/862, October. Geneva: WTO.

WTO (World Trade Organization) (2020a) *The economic impact of COVID-19 on women in vulnerable sectors and economies,* Information Note, 3 August. Geneva: WTO.

Yunfeng, S., Haiwei, L. & Ren, Z. (2021). Effects of pandemic outbreak on economies: Evidence from business history context, *Frontiers in Public Health,* 9, 1-12