Estimating the Economic Impact of COVID-19: A Case Study of Namibia

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Abstract

The outbreak of the Corona Virus in December 2019 brought panic not only in China and the European continent which were considered the virus's epicentre, but worldwide. In Africa, the cases of the virus increased significantly since February 2020.The evolution of the disease and its economic impact is however uncertain, thereby making it difficult for policymakers to formulate an appropriate macroeconomic policy response. The immediate response that countries adopted was the lockdown "stay at home" measure, aiming to avoid movement of people since the virus was believed to spread through contacts with the infected persons. The lockdown also had its own economic impact as it puts halt to most economic activities and operations, with an exception of essential services.

In this paper, we estimated the economic impact of the virus on the Namibian economy. The findings are that, an estimated amount of 5 to 7.5 billion Namibia dollars is lost in GDP owing to the impact of the lockdown measures on the various sectors in the primary, secondary and tertiary industries. Due to loss of income, loss of business trading hours and loss of jobs; a loss of private demand (consumption) of N$6 billion to N$12 billion was estimated for Namibia. This loss takes back the country's private consumption to the level it was 4 to 5 years back. Although the government has already started implementing the fiscal stimulus aimed to cushion the impact of the pandemic, the paper established that a once off income grant aimed for the unemployed and lost income is far lower than the lost income due to the lockdown. Among the proposed policy recommendations is the need to allow the informal sector to operate under specified conditions in efforts to ensure that not so much is lost in the informal sector which the government may need to again issue fiscal stimulus on an already limited fiscal space. Another policy proposal is the need to draw up a post recovery strategy in dealing with the most affected sectors of the economy.

Key words: COVID-19, lockdown, GDP, Consumption

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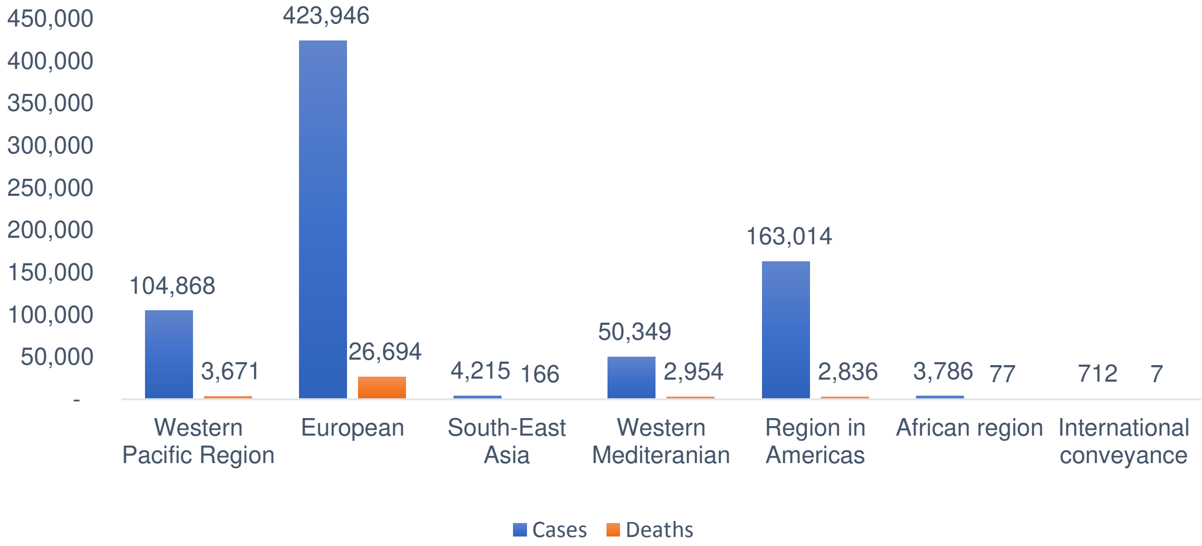
1. Introduction

The corona virus, commonly known as the COVID-19, started in China in 2019, when the first person tested positive on 17 November of the same year. On 31 December 2020, Chinese authorities alerted the World Health Organization (WHO) of cases in Wuhan City, with an unknown cause. It was since then, when a mystery disease, first referred to as 2019 novel corona (2019-nCoV) and later renamed COVID-19 started spreading worldwide (Yi-Chi *et al*, 2020). On March 11, 2020, the WHO characterised COVID-19 as a pandemic. By 31 March 2020, the number of cases of the deadly virus increased to 81,554 in China, and 754,948 globally (WHO Situation Report, 2020). Total deaths stood at 36,571 by end of March 2020 while recoveries were recorded at 184,514 (European Centre for Diseases Prevention and Control, 2020). At the time of writing this paper, the new cases in China – in the Wuhan City – which was the epicentre of the virus, has drastically reduced to very minimal cases of about 5 or less new cases in a day. The new epicentre is now in countries such as the United States of America, Italy, Germany and Spain. The European countries are thus most affected, with a total of 423,946 cases and over 26,000 deaths (Figure 1). In the African region, the confirmed cases are not as much when compared to other regions, with total cases of 3,7768 by 31st March and less than 100 deaths by the same date.

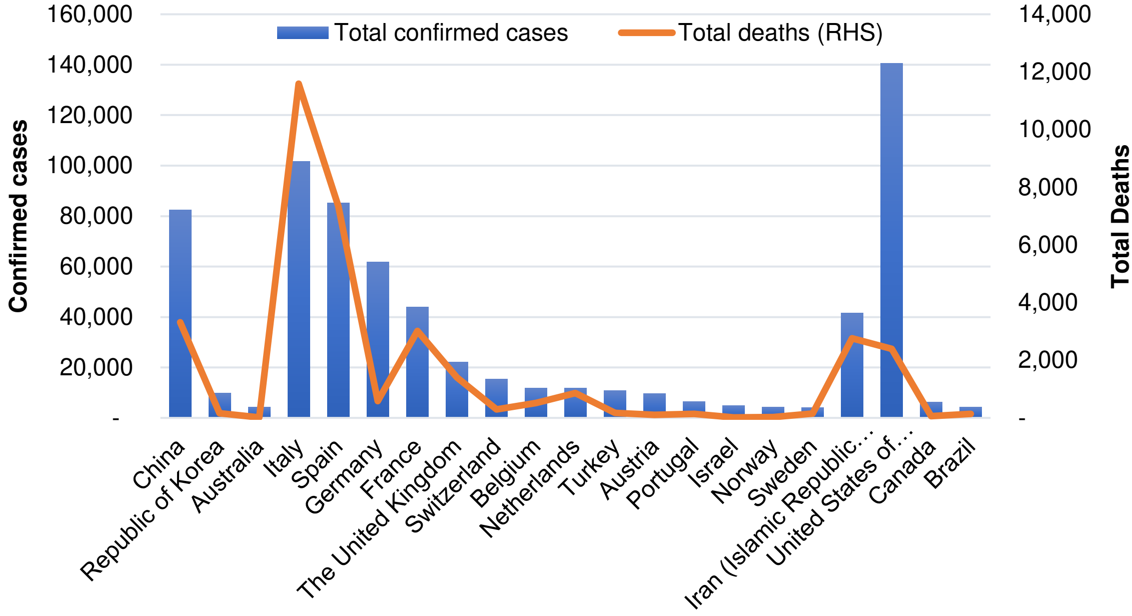
Figure 1: COVID—19 cases per region by 31 March 2020



Source: World Health Organisation, 2020

Country comparisons indicate that the United States of America recorded more cases, over 140, 000 (Figure 2). However, the higher number of deaths were rather recorded in Italy, with death cases of more than 11,500. This number was the highest worldwide, followed by Spain with over 7,000 cases, then China with just over 3,300 cases and France with just over 3,000 cases by the end of March. Although China was the epicentre of the virus when it first hit, they managed to contain the virus and recorded minimal deaths from March 2020.

Figure 2: Countries with more than 4000 confirmed cases by 31 March 2020.



Source: World Health Organisation, 2020

The first confirmed COVID-19 case in Namibia was reported on 14 March 2020. The number of confirmed cases increased to 11 by the end of the same Month. By this date, there were no deaths reported although there was a total of 101 persons identified to have been in contact with the 11 people that tested positive (MoHSS, 2020). This virus was established to spread from person to person in close proximity, similar to other respiratory illness, such as the flu (WHO, 2020). Thus, to reduce further spread of the disease, many countries around the world, including Namibia enforced social distancing – limiting contacts with others – in addition to other actions such as washing hands and not touching one's face. The lockdown entailed closing most institutions, businesses and service provisions with an exception of essential services such as medical and pharmaceutical services, part of civic registrations, Banks, essential legal, financial, payment services and medical aid funds and supply chain services (State of Emergency Regulations for COVID-19, 2020). The lockdown also entailed cancelling international and domestic flights and locking down the borders, in efforts to contain the spread of the virus. It is an undeniable fact that these efforts done worldwide and in Namibia, in particular, have direct impact on economic activities; since value chains and most other services and activities were put to hold while the relevant authorities were monitoring the spread of the virus.

Although not much economic research has been done on the impact of the virus as the situation is fairly emerging, about 4 months at the time of writing this paper, the outbreak of the COVID-19 has undeniable effects on the economies globally and domestically. Among the few studies on the economic impact of the virus is the United Nations Conference on Trade and Development (UNCTAD) which calculated impact of the coronavirus on China to cost a global value of 50 billion USD in exports and lead to a reduction of 5-15% in foreign direct investment (OECD, 2020). Similarly, the International Labour Organisation (ILO) estimates the impact of COVID-19 to result in a rise in global unemployment of between 5.3 million to

24.7 million (ILO, 2020), an indication that post the COVID-19-, economies again will need to work hard and adopt some economic recovery strategies to help not only with the lost economic activities, but the lost jobs as well.

In this paper, we estimate the economic impact of the COVID-19 and in particular, the impact of the lockdown to the Namibian economy. Simulations were used to quantify the impact and establish the magnitude of the pandemic on the various sector, the gross domestic product and domestic consumption. The remaining parts of this paper are structured as follows: In section two (2), we present the narrative impact of COVID-19 in the various segments/ sectors of the economy, in section three (3) we estimate these impacts and project the likely effect on the economy in the short term. In the last section, section four (4), we conclude and provide policy proposals based on the results.

2. Narrative impact of Covid-19 on the Namibia economy

Although the outbreak of the COVID-19 pandemic impacts all sectors and everyone in the country, there are those that are hard hit depending on the basis of their operation. Among the sectors analysed and considered in this paper are the tourism, manufacturing, the informal business, financial markets, the external sector (trade) and finally, the transport and logistics sectors.

2.1. *The tourism sector*

Tourism is one of the bigger sectors in the county, contributing N$5.2 billion to gross domestic Product (GDP) by 2015 and 44,729 employment (Namibia Tourism Satellite Account, 2018). These numbers increase further when one considers the indirect impacts of the sector where the total contribution to GDP is said to increase to more than N$15.0 billion while employment is said to reach 100, 000 employees. This sector is, however, one of the hard hit sectors, since its operations depend on the movement of people. The lockdown period therefore has significant impact both on international and domestic tourism. The World Tourism Organization (UNWTO, 2020) estimated the expected impact on world tourism to be a fall of between 20-30%, which could translate into a decline in international tourism receipts (exports) of between US$ 300 - US$ 450 billion. In Namibia, if a 20% fall is applied on the current contributions of the sector, it implies a loss of over N$1 million.

Namibia's tourist arrival has increased over the years, rising from 1.2 million tourists in 2013 to over 1.5 million by 2017 (Namibia Tourist Arrival report, 2017). Apart from those that come from Africa, most of the country's international tourists come from Germany, France, USA, Switzerland, Italy, Spain, Canada, UK, China and Portugal. Most of these countries are the most hit by the virus and in line with the travelling ban policy measures, the implications are that it might take longer before Namibia gets back to receiving international tourists. The bed occupancy rates are, therefore, expected to significantly reduce even after the lockdown, and performance of hotels and restaurants are expected to slow down. On average, hotels and restaurants in Namibia contributed an average of 3% to GDP over the last 5 years (Preliminary national accounts, 2019). This contribution is expected to decrease and the impact will worsen, depending on the evolution of the virus. Even if the virus was to be brought under control immediately, the recovery pace is expected to be slow especially due to the post-virus fear of socialising, holidaying as well as visiting the hotels and restaurants.

Worldwide, countries such as the USA, UK and some other European counties have announced the temporary suspension of normal operations of hotels resulting in an estimated loss of jobs amounting to 24.3 million globally, and 3.9 million in the United States alone (Ozili and Arun, 2020). Accordingly, the economic impact of the pandemic on the hotel industry in the Unites States is expected to be more severe than the combined impact of 9/11 and 2008 recessions.

2.2. *The informal business sector*

There is no official definition of the term 'informal business sector' in the Namibian context. The International Labour Organisation (ILO), however, describes the term 'informal sector' as a sector comprising of tiny units, working in the production of goods and services, but whose activities were not recognized, recorded, protected, or regulated by public authorities (ILO, 2007). This include a wide range of activities covering street vending, shoe shining, food processing and other petty activities that require little or no capital and skills. It also includes activities that involve some skill and capital, such as tailoring, electrical repairs and commuter transport (ILO, 2007).

Drawing from the above definition, the informal business sector in the context of Namibia comprise of informal private enterprises that are not complying in part or in full with the legal and regulatory provisions of national or local government. For example, an informal business enterprise may not be registered with the Business and Intellectual Property Authority of Namibia (BIPA), which is an agency under the Ministry of Industrialisation, Trade and SME Development (MITSMED), but may have a local business license, such as a Business Fitness Certificate that the City of Windhoek issues. The functions of BIPA are, to be the central focal point for the registration, administration and protection of businesses, commercial and industrial properties rights (IPRs) as well to be the legal depository of information, documents and data required to be lodged under the applicable legislations (BIPA, 2020).

Informal business sector in Namibia is represented by informal business enterprises such as hawkers, shebeen owners, small builders, panel-beaters, barbers, hairdressers, photocopying stalls, repair shops for radios, TVs, fridges, and watches, taxis and bus transport operators. These informal business enterprises are owned by women and men of all ages who are engaged in strategies to improve their livelihood and the livelihood of their families and the broader community. Most informal business people and workers do not have a choice: they act 'informally' because they have been excluded from the formal sector and are unable to find formal employment. Thus, establishing a micro-enterprise in an effort to pay for food, housing, health, and other services, as a last resort. Many informal businesspeople lack formal education and training qualifications, and few have business management training or experience. Some informal businesswomen and men are entrepreneurial, that is, they find innovative solutions to the challenges they face at home and in business while others simply copy and join overcrowded markets without much planning or research (White, 2011).

According to the 2018 Namibia Labour Force Survey, released in 2019, the unemployment rate in Namibia stood at 33.4% and that 418,674 Namibians are employed in the informal business sector (Namibia Statistics Agency (NSA), 2017). Besides job creation, the informal business sector is hugely important to the country's economy and many households' dependence on the informal sector cannot be emphasized enough. This sector is not spared from the adverse effect of COVID-19. The COVID-19 pandemic and precautionary measures advised by the government to contain the deadly virus come with negative impacts on informal business sector. Precautionary measures such as quarantines and stay-at-home orders (also referred to as lockdown), for instance, mean customers will avoid crowded markets and consequently, the demand for their goods will decline and stocked goods may go to waste. Moreover, jobs and income losses are likely to be severe mainly because there is no job security in this sector. This will have dire knock-on effects on poverty in poor communities, where the informal sector often provides people with a tenuous grip on survivalist livelihoods. On 2 April 2020, the government through the Ministry of Finance launched an Economic Stimulus and Relief Package totalling N$ 8.1 billion in response to the COVID-19 containment measures that were put in place.

The stimulus is linked to supporting the job retention in the formal sector, tax relief, new lines of credit and enterprise grants which speak largely to formal enterprises and formal workers. There is, however, little in this intervention that speaks to the citizens who run non-VAT registered businesses in the informal business enterprises. One would assume that, they will benefit from the proposed household 'Emergency Income Grant'- a once of N$750.00 (for three weeks[4]) meant to support people who have lost their source of income either in the formal or informal employment sector. These unpreceded efforts by the government is however commendable, for they would provide real relief and a measure of security to poor households through what is currently expected to be the worst phase of the pandemic and its knock-on poverty impacts. However, there are still uncertainty if the N$250.00 a week would sustain people who for instance, would make N$1,000.00 a week, and have made financial commitments such as rentals, food and other essential needs. A critical concern is that post-lockdown recovery strategies have not yet been communicated. The informal businesses would need starting up capital to get back into business, should the situation get back to normal. The post-lockdown strategy from the government would thus be needed. Failure to secure and implement one might lead to an economic collapse and, in all probability, to social unrest as unemployment surges.

2.3. Government revenue collection

Namibia's tax revenue entails taxes on income and profits (company taxes), taxes on properties as well as taxes on goods and services, among others. The COVID-19 outbreak will have some undeniable impact on government tax revenue. Generally, Namibia's tax revenue mainly comes from, income tax on individuals and profits, taxes on consumptions (valued added tax) and taxes on international trade. By 2019, company taxes accounted for 14% of the revenue, income tax on individuals accounted for 25%, value added tax VAT) accounted for 23% while taxes on international trade (SACU) accounted for 35% (MoF, 2020). The closing of most shops (shops that do not sell essential products such as clothing, automotive and others) due to the lockdown, implies a reduction in the total value added tax (VAT) that would have been charged on the sales of goods, translating in less taxes paid to the government. Although not as immediate as the loss in VAT, the loss of jobs or anticipated job losses especially in sectors such as tourism, transport and others, imply a reduction in the number of taxpayers, and therefore the expected reduction in income tax revenue. The impact on revenue has a bearing on Namibia's fiscal space which has already been under pressure due to the recessionary pressures of the last 3 years. At the time of writing this paper, the exact job losses were not known. However, developed countries such as the United States of America has projected job losses of about 47 million due to the virus outbreak (Federal Reserve Bank, 2020). There are also an expected decline in company taxes emanating from

[4] Three weeks being the lock down period

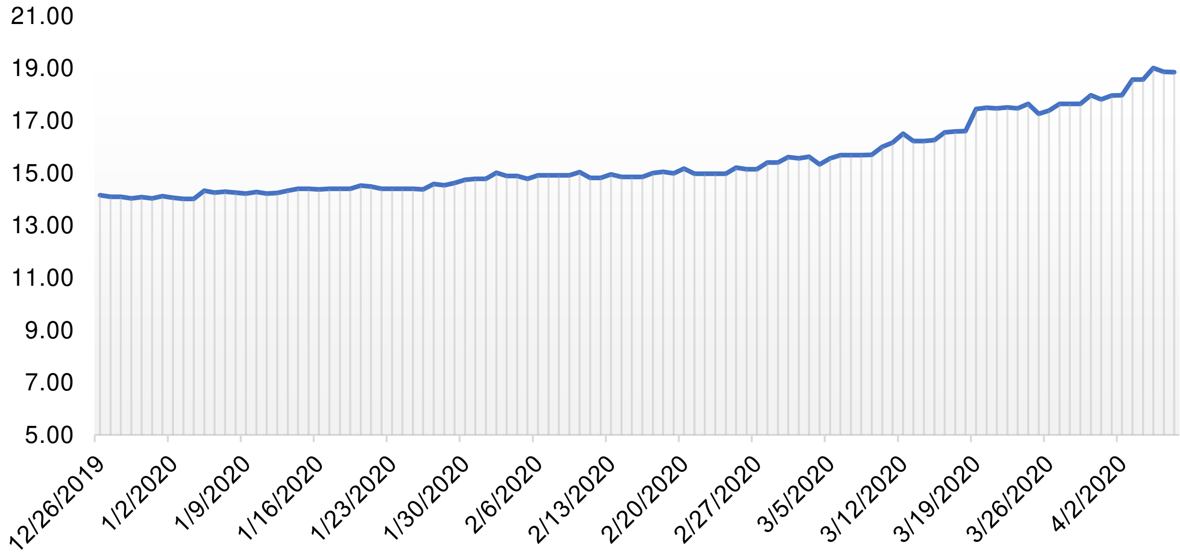
the lock down impacts, as there will be a halt on the exportation of minerals[5], fish, meat and other products during the lockdown period. Similarly, the post lock down revenue is expected to be lower than usual, and will only normalise after sometimes.

2.4. Foreign Trade

The outbreak of the virus has disrupted the production and the functioning of global supply chains. Most companies across the world are especially dependent upon inputs from China and have since the outbreak started experiencing contractions in their operations (McKibbin & Fernando, 2020). The lockdown worldwide has worsened the already disrupted supply chains while trade across countries have been limited to only essential goods and services.

During the time of the lockdown, business operations are halted and both exports and imports of goods services are restricted. Imports of basic services have also become expensive since the outbreak of the virus, emanating from volatile and depreciating exchange rates. The exchange rate between the Namibia dollar and US dollar[6] for example deteriorated from 1USD = N$14. 26 in 26 December 2019 to 1USD = N$19.01 by April 05, 2020 (Figure 3). This is the highest level since the outbreak of the virus. The depreciation in the value of the Namibia dollar implies a high importation costs. An item that was costing N$7,080 (i.e 7080/14.16 =USD500.00) at the end of December 2019 would cost N$9,505.00 (USD500*19.01) on 5th April 2020.

Figure 3: UD dollar to Namibia Dollar exchange rate, December 2019 – April 2020



Data source: Exchange rate.org.uk

The implication of the exchange rate on trade is that, importation of essential products such as pharmaceuticals for the treatment of the virus, test kits, masks and gloves become more expensive and the government spending on these items is therefore expected to increase. This situation negatively affects the country's fiscal space which have already been depressed

5 Namibia is rich in minerals and products such as diamonds, copper, gold, zinc, lead, uranium are among Namibia's top exports.
6 USD being the de facto global currency

for the past three years due to recessionary pressures. If Namibia is to export any of its products during this time of deprecating exchange rate, its exports are cheaper, and therefore expected increase in receipts from exports, if law of demand is to be applied.

2.5. Transport and Logistics

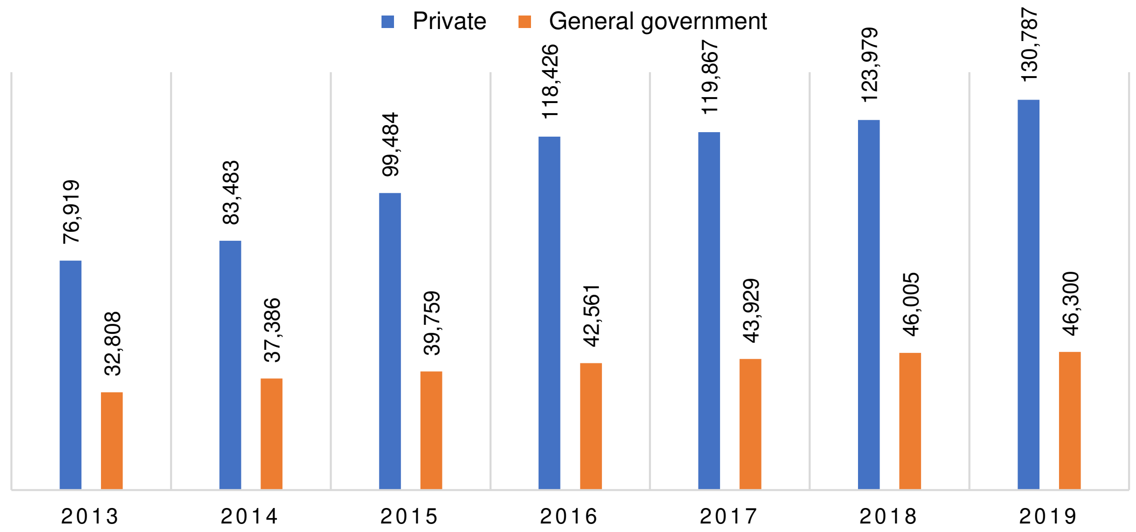
Closely related to trade is the transport and logistics sector, a sector that makes it easier for the trade to take effect. Transport and logistics is, therefore, vital for any economy as it allows for trade and the movement of goods and supplies from producers to users. The Namibia government is cognizant of how critical it is and has over the years invested in the transport infrastructure development (roads, rail, maritime and aviation). These investments have enabled Namibia to position itself as a preferred gateway and as a facilitator of trade for the Southern African Development Community (SADC) (Fransman, 2017). As COVID-19 continues to extend its global reach, the impact is being absorbed in every corner of the economy in the work, and the transport and logistics sector in Namibia is not spared. South Africa plays an important role in Namibia's Transports and logistics; this is because approximately 80% of Namibia's total imports are from or through South Africa (Savage et al, 2012).

Like in many other countries in the world, the coronavirus outbreak led to both the Namibian and South African governments to impose restrictions on nonessential travel to countries affected by COVID-19, indefinitely suspending tourism travel, work visas and immigrant visas. Although there was no mention of stopping the import and export of goods from any country into Namibia (only the arrival of citizens from the severely hit countries was banned), the travel restrictions have resulted in mass production shutdowns and supply chain disruptions due to ports and airport closures. Moreover, Namibia's top ten major export destinations which include China, South Africa, Botswana, Belgium, United Arab Emirates (UAE), Democratic Republic of Congo (DRC), the Netherlands and Spain (NSA, 2019) have closed their borders and put part of their population on quarantine, as a result of COVID-19. This could have adverse effect on the demand for the Namibian products. According to Namibia Statistics Agency Trade data (2019), these countries constitute about 80% of Namibia's export market.

2.6. Domestic Consumption

In its state of emergency regulations for COVID-19 (Namibia State of Emergence-Covid-19 Regulations, 2020), all retail shops in Namibia with an exception of those providing essential services were to stop operations for 21 days. Operations were only permitted for essential services such as grocery shops and pharmacies. Although before the effective date of the lockdown, most of all other shops received an influx of consumers in attempt to stock up their necessities, the overall impact of the lockdown on domestic consumption is an expected slowdown in overall consumption. Alcohol suppliers, for example, went on complete lockdown, which implies zero supply from brewing companies. Domestic consumption has generally been driven by private consumption in Namibia (Figure 4) and the impact of COVID-19 is an expected reduction in the historically an upward trend. The break on supplies and aggregate demand is expected to impact revenues, operations and in some sectors, employment.

Figure 5: Domestic consumption by expenditure in million N$, 2003-2019



Data source: Preliminary National Accounts, 2019

There are other sectors, however, where demand boomed since the outbreak of the virus. These sectors are what one can call "the winners" or the "opportune sectors". Manufacturing is one of these sectors. Specifically, this includes the production of sanitizers, hand washes, masks and gloves as well as pharmaceuticals. Since the outbreak of the virus, the main message by the health experts have been (WHO, 2020): "Wash your hands regularly", "disinfect surfaces regularly using alcohol base sanitizer", "wear masks when sneezing or coughing" and "practice social distance of at least one meter". The manufacturers of the products required to protect oneself from the virus therefore received high demand – most probably the highest since – and were thus winners during the COVID-19 pandemic.

The communication sector is also among sectors that can be classified as "winners". The "stay at home" policy implemented worldwide implied more usage of different types of communication models to enable officials to work, hold meetings and for media houses and responsible government authorities to broadcast information on the virus. More usage of information technology- teleconferencing, skype calls, zoom and others make use of internet and, therefore, increased internet demand. E-commerce is also a winner in this period of COVID-19, as movements of people in shopping malls have been restricted, while e-commerce remains as an available option to trade during the lockdown period.

2.7. Financial market

The economic disruptions caused by the COVID-19 and the increased uncertainty are evidently being reflected by increased financial market volatility, and general disruption of supply chains globally. Georgieva (2020) for example, postulates that, the COVID-19 outbreak is the world's most pressing uncertainty. While the exact effects of the coronavirus on the Namibian economy is not fully known at least at the moment, it clearly does pose a serious risk to the wellbeing of the general economy. Venelli et al (2020) indicate that, an epidemiological threat such as the COVID-19 disease can have disruptive effects on economies. Venelli et al (2020) further emphasize that, although the virus cannot be contained, the risk to the economy can be eliminated. Furthermore, Venelli et al (2020) highlight the importance of focusing on the assessments on the ways in which the outbreak may affect consumers, businesses and governments at large.

In recent literature such as Feuer (2020), Valladares (2019), Liesman (2017) Financial Times (2020) and references therein among others, to some extend used the 2003 SARS outbreak to put into context the effects of the recent coronavirus outbreak on the global economy. Feuer (2020), for example, indicates that, the 2003 SARS epidemic was estimated to have shaved 0.5 percent to 1 percent off China's growth and costed the global economy to a tune of $40 billion (or 0.1 percent of global GDP). Furthermore, other recent literature indicates that, households (Liesman (2017), companies (Valladares (2019)) as well as governments (Financial Times (2020)) are currently in deep debts more than they were during the 2003 SARS outbreak.

Interest risk

Globally, interest rates have recently fallen to historic lows in a sign of increasing economic uncertainty. In the Namibian perspective, Bank of Namibia lowered its benchmark interest rate by 100 basis points to 5.25 % at an emergency meeting held on the 20th March 2020, following the South African Reserve Bank's interest rate cut by the same margin a day before. Like in other countries worldwide, the decision was taken to cushion the anticipated impact of COVID-19 on the local economy and support the domestic activity while maintaining the one-to-one link between the Namibian dollar and the South African Rand.

Currency risk

Similar to other Dollar currencies, the Namibian Dollar reached an all-time high of N$ 19.01 per USD in beginning of April 2020 in reaction to the coronavirus outbreak in the country and evidently coupled with the aftereffects of the ratings agency Moody's decision to downgrade South Africa's sovereign's credit rating below investment grade. The exchange rate between the USD and the N$ is expected to remain low for as long as we are faced with the pandemic and will most likely only normalise after the world have completely terminated the virus.

Stock Market

The Namibia (NSX) Overall Index, which captures the free-floating market capitalization weighted index of all companies listed on the Namibian Stock Exchange had a drastic historical fall in 2020 hitting an all-time low of N$ 735 on the 23 March 2020. According to Trade Economics (2020), the NSX Overall index decreased by 445 points or nearly 33.73% since the beginning of 2020. This has been its lowest return since its historical low return of -41.82 % in January 2016 (see IJG Monthly Reports, 2016).

After the announcement of the country's COVID-19 economic stimulus packages amounting to a total of N$ 8.1 billion, of which N$5.9 billion is in direct support to businesses, households and cashflows acceleration payments for services rendered to government, and N$2.3 billion relating to off-balance sheet government liabilities, the index regained some of its grounds and traded above 920 level.

However, these recoveries may be short-lived as there are high chances of further extension of the lockdown period to combat the further spread of the virus. Thus, expectations are that, NSX Overall index may continue to trade below 800.

Overall, local financial markets reacted to the COVID-19 shocks and continue to do so steadily. Projections are that, the financial markets may remain extremely volatile for a significant period, at the very least till the number of infected cases start coming down. Therefore, if Namibia and South Africa in particular, continue to see a rise in infected case, the local financial markets situations could get far worse in response, despite the recent and possible further rate cuts announced by the Bank of Namibia as well as the economic stimulus announced by the Finance Minister at the end of March 2020. The expectation is therefore that, the two, among other government interventions may have a significant role to play in calming local financial markets volatilities.

3. Estimating the impact on the economy in 2020 and beyond

3.1. Theoretical Framework

The theoretical framework used in this paper is based on the GDP identity, where GDP is defined as follows:

$$GDP = C + I + G + (X - M)$$

Where, C is household consumption of domestically produced goods and services, I is investment purchases by firms of domestically produced goods and services, G is government purchases of domestically produced goods and services, $X - M$ is exports(X) minus imports (M), where the difference is the trade balance or the net export. The outbreak COVID-19 by implication have impacts on consumption because of lost lives, employment and income. It has impact on investment because of market uncertainties globally. It impacts government spending as governments need to spend more on their economy in attempts to contain the spread of the virus, and finally it impacts both exports and import. The analysis in this paper is, therefore, based on this identity to holistically understand the impact and the magnitude on each of the components in the identity.

3.2. Estimation Design

To estimate the impact of the virus on the various sectors in the Namibia economy, this paper follows an estimation approach similar to that of McKibbin and Fernando (2020). Emanating from the high level of uncertainty in the evolution of the virus globally and Namibia included, assumptions have been developed to derive the size and sign of shocks on the variables. The values on the assumptions are based on known impacts since the outbreak and the probable impact in the future should the virus persists. They are also based on already quantified impacts on some sectors in the global economy and domesticated to Namibia. The value of shocks on sectoral economic activities are presented in Table 1. Below is the details on the assumption applied per sector.

Assumptions

Agriculture, forestry and fishing

Although food related sectors have been regarded as essential services worldwide and Namibia included, the agriculture, forestry and fishing is expected to register a slow growth. This is owing to limited supply and markets of these products due to lockdown impacts. Labour shocks owing from working from home and working in limited numbers are also likely to affect the output of this sector. However, due to its classification as an essential sector to the economy, the impact is expected to be minimal, between -3% and -4%.

Mining and Quarrying

Owing to halted mining and quarrying operations, with an exception of critical works such as “minimal operations and critical maintenance” in line with the Namibia State of Emergency Regulations for COVID-19 (2020). A reduction in the contribution to GDP for this sector is expected for the reminder of the year, thus a shock of -5% to -7%.

Manufacturing

In the manufacturing sector, some areas of the sector is expected to boom. This include areas such as health related products, for example; medical equipment and medicines, food, non-alcoholic beverages and essential products, as well as essential inputs thereto as provided for in the regulations. Pharmaceuticals, chemicals and related products, other food products as well as publishing and printing are also, some of the areas of the sector that are expected to boom. The net effect on the sector may, however, not be as significant since other areas of manufacturing such as alcoholic beverages, processing and other manufacturing, are negatively affected by the virus. The shock on this sector is therefore smaller, estimated at -2% and -3%.

Electricity and water

During the COVID-19 outbreak, municipalities were required to ensure that everyone with access to portable water is connected. This by implication means that water demand is high as “washing of hands” with running water was especially also one of the preventative measures advised by the WHO (2020). Electricity demand is also expected to increase as power transmission to areas where people are quarantined was a requirement and general electricity use due to “stay at home” is expected to be more than usual, however there is an estimated low use of electricity and water in the industrial sector due to closed or limited business operations. An assumption of a negative shock on this sector was therefore applied between 2% and 3%.

Construction

Although maintenance of or building of medical infrastructures and quarantine camps in support of essential or critical business continuity of services to the fight of COVID-19 were some of the allowed activities in the State of Emergency Regulations; such activities could not be enough to offset the halted activities in the overall construction sector due to global and domestic lockdown. Lockdown in countries such as China – that have become the global supplier for most goods (United Nations Conference on Trade and Development (UNCTAD), 2020)[7] has halted supply of goods including construction materials globally, and Namibia is

[7] https://unctad.org/en/PublicationsLibrary/ditcinf2020d1.pdf

not an exception to this. The construction sector is, therefore, expected to decline by 10% to 15%.

Wholesale and retail trade

The impact on wholesale and retail trade is not expected to be impacted so much, since Retail, wholesale, supermarkets and/or home kiosks for food and essential products such as toilet papers, cleaning materials, sanitizers and disinfectants and essential supplies for those taking care of the sick and elderly and in order for people to remain healthy were allowed to operate since the outbreak and even during the lockdown period. Other retail shops such as clothing and those that do repairs were however not operating during the lockdown and will, therefore, bring the net effect down. A negative shock of 3% to 4% was applied.

Hotels and restaurant

As described under the narrative section in the tourism sector, hotels and restaurants are heavily affected by the lockdown and the impact is most likely to continue even after the lockdown as recoveries is expected to be slower. As such, a shock of -10% to -15% was applied.

Transport

In the Transport and logistics sector, transportation of essential goods and those related to health services were allowed. However, the travel bans and lockdown of borders imply negative impact on the sector. The net effect was, therefore, considered negative and hence a shock of -2% to -3%.

Information and technology

Information and technology is expected to be impacted positively, as sharing of information using various communication technologies became the art of working, communicating and information sharing during the lockdown. A positive shock of 2.5% to 5% was, therefore, applied.

Real estate, arts, entertainment services

The real estate as well as the arts, entertainment services are also part of those negatively affected as movements and large gatherings were restricted during the time of lockdown. A loss of 1% to 2% is, therefore, expected on these sectors.

Public administration, Health and Education

The Public administration, education and health are also some of the sectors negatively affected by the pandemic. COVID-19 being a health threat, the health sector was more challenged, having to change how they think, act and had to look for a completely new operation mechanism in dealing with the pandemic. Globally, the health sector has also been challenged by the pandemic as the services of public hospitals grew in high demand despite the lack of more sophisticated testing equipment which are mostly found in private hospitals hence, unfordable by ordinary citizenry (Ozili & Arun 2020). In an attempt to control the COVID-19 outbreak, the Spanish government, for example, nationalized all private hospitals and healthcare providers as the virus was spreading very rapidly. As is the case in many (developing) countries globally, there has also been a general fear of running out of supplies for pharmaceuticals and other testing equipment in Namibia. At the time of writing this paper, there has fortunately been no fatality cases that have been recorded in Namibia, however, the general impact of the virus is expected to be negative as the operations of the sector is affected by the outbreak, where even some health professionals had do go under quarantine (MoHSS Media Statement, April 2020). A negative impact of between 10%-20% is, therefore, expected in this sector.

The education sector in Namibia was also affected by the outbreak where the basic education is possibly more affected than the higher education. Schools, colleges and universities worldwide were closed when coronavirus was declared a public health emergency (OZili and Aruna, 2020). In Namibia, the school closure brought about more disruptions in the school calendars and teaching in general. For basic education, the school calendar for schools in Namibia is divided into three terms per year. According to the Ministry of Education, Arts and Culture (2020), for 2020 academic year, the first, second and third terms comprise 66, 65 and 67 days, respectively. By the 16th of March 2020 when all the schools in the country closed, learners had gone to school for about 43 days, remaining with 23 days before the 17th of April 2020, the initial last day of the first term. Should the government extend the lockdown as part of precautionary measures for COVID19, the number of school days for the second term will also be disrupted which may impact negatively on teaching and learning. Disruption in teaching and learning would make it almost impossible for formal assessment for the 2020 academic year to take place. Consequently, this may compel all the learners to repeat their classes in 2021. There has been talks by the authorities to temporarily migrate to online teaching and assessment. Although this might be doable in tertiary education, it is particularly challenging for schools for online education is a new area for majority of both teachers and learners in Namibia. It is also challenging to roll out online learning for schools specifically in rural areas with no access to internet and electricity. The impact on education sector in contribution to GDP was therefore set at -3% and -5% as in Table 1 below.

Table 1: Scenario assumptions to sectors

Variables	Scenario 1[8]	Scenario 2[9]
Agriculture, forestry and fishing	-3%	-4%
Mining and quarrying	-5%	-7%
Manufacturing	-2%	-3%
Electricity and water	-2%	-3%
Construction	-10%	-15%
Wholesale and retail trade, repairs	-3%	-4%
Hotels and restaurants	-10%	-15%
Transport and logistics	-2%	-3%
Information and Communication	3%	5%
Real estate activities	-1%	-2%
Arts, Entertainment & Other Service activities	-1%	-2%
Public administration and defence	-3%	-4%
Education	-3%	-5%
Health	-10%	-15%

Consumption, Fiscal policy and others

Other areas of the economy which are not sectors *per se*, but, with the direct impact on the economy are: aggregate consumption and fiscal stance. As narrated in section 2 of the paper, domestic private consumption is heavily affected by the COVID-19 and specifically the lockdown, as the informal business owners went into an "income break" during the lock down

[8] The most likely impact
[9] The worst case, but possible scenario, if the lock down extends to more than 21 days.

and hence an expected break in trading hours and decline in private consumption. The closure of the non-essential services and all other affected by the lockdown including loss of jobs add to the decline in private consumption. Erosion of wealth resulting from the loss of value in assets such as stocks also have negative impact on consumption. Price Water House Coopers Australia (2020) estimates the loss in consumption in Sub-Saharan Africa to be USD26.2 billion. In the case of Namibia, a negative shock of 5%-10% have therefore been applied (Table 2).

Investment is likely to decrease, since future uncertainty and poor expectation of future profitability discourages decision making on investment. UNCTAD (2020) estimates that global Foreign direct Investment (FDI) flows could fall by between 30% to 40% because of the spread of COVID-19 (Chidede, 2020). Accordingly, FDI inflows in Africa is estimated to reduce by 15% with the most affected countries being those in the energy and tertiary industries because of the oil price drop as well as the airline and tourism industries, due to travel cancellations and bans. For this paper, a shock of 5%-10% is applied for investment in Namibia.

Government spending is expected to increase, as governments mostly use fiscal stimulus to react to shocks. Governments' spending is expected to increase globally, which typically can afford result in deficits as most governments apply fiscal stimulus measures to counteract the fall in consumer spending. For the case of Namibia, the stimulus package already announced by the Ministry of Finance is about 12% of 2019 budget, thus a shock of 15%-20% increase in government spending is expected to cater for expenditure in health care and as stimulus in the economy.

The Covid-19 has so far resulted in exchange rate deprecation (USD/N$) of about 30% since December 2019. This has implication on the country's foreign debt with the depreciation implying an increase in the foreign debt. This is especially true for the bonds maturing in 2021 (BoN annual report, 2019), when exchange rate is most likely to still be in depreciation when compared to the levels before the outbreak of the virus. A shock of 10%-20% on foreign debt was therefore applied.

Net export is expected to decline owing to disruptions in the supply chains, border closures and limited markets for exports due to weak global demand as well as the depreciated Namibia dollar against foreign currencies. While exports are expected to go down, imports are expected to up slightly due to importation of the needed supplies mainly in the health sector. A decline between 2% and 3% in net export is, therefore, assumed.

Table 2: Scenario assumptions on other economic and fiscal variables

Variables	Scenario 1	Scenario 2
Private consumption	-5%	-10%
Net Direct Investment	-5%	-10%
Government Spending	15%	20%
Foreign Debt	15%	20%
Net Export	-2%	-3%

3.3. Quantifying the possible economic impact of Covi-19 on Namibia

The assumptions above were used to gage the impact of the corona virus on the Namibian economy. The data used are that of the expected GDP sector contributions and expected performance of the general economy before the outbreak. Specifically, to establish the total GDP loss, simulations were applied on the selected statistics on Namibia's economic outlook data of February 2020, as published by the Bank of Namibia. Data for other variables used were obtained from the Ministry of Finance, Bank of Namibia and the Namibia Statistics Agency. In cases where a variable does not have readily available projected data, a two-year moving average was used as the "supposedly" anticipated performance of the respective variable before the outbreak of the virus. After applying the assumptions as tabulated in Table 1 above, Namibia's total GDP loss was estimated to be between N$5.1 billion and N$7.5 billion in nominal value in 2020 (Table 3). With this loss, the nominal GDP in 2020 is implied to be hovering around the same level it was in 2018 and 2019.

Table 3: projected loss in GDP owing to Covid-19, in million N$

	Scenario 1	**Scenario 2**
Agriculture, forestry and fishing	-292	-468
Mining and quarrying	-821	-1150
Manufacturing	-488	-733
Electricity and water	-131	-196
Construction	-443	-665
Wholesale and retail trade, repairs	-576	-767
Hotels and restaurants	-274	-411
Transport and logistics	-97	-146
Information and Communication	64	127
Real estate activities	-57	-170
Arts, Entertainment & Other Service activities	-14	-43
Public administration and defence	-665	-887
Education	-569	-949
Health	-727	-1091
Total loss in GDP	-5,092	-7,547

Source: authors' own calculations.

The total loss in domestic consumption is also anticipated to register a significant loss. Total private consumption estimated to be N$6.2 billion in nominal value, where in worst-case scenario, it could reach N$12.5 billion (Table 4). At these levels, private consumption reduces to the level it was four years back. In terms of percentages, this significant reduction in private consumption is close to the one experienced between 2009 and 2010, due to the spill over impact of the 2007/08 global financial crisis. Government spending on the other hand is expected to increase, as the government is expected to carry out an expansionary fiscal policy in efforts to stimulate the economy, in response to the impact of the virus. Government spending is estimated to increase between N$10 billion and N$13.4 billion in 2020 from the levels laid out in its 2019 mid-year fiscal stance.

Similarly, foreign debt is expected to increase by N$5.1 billion. In the worst-case scenario, foreign debt is expected to increase by N$6.9 billion owing to the uptake of new debt to fund the increased spending and increased repayment levels due to exchange rate depreciation. The current account deficit (or Net export), is expected to improve slightly by N$391 million as the import bill reduces due to weak demand. This is despite the expected increase in imports for the health sector.

Table 4: Impact on fiscal stance and other economic variables, in million N$

Variables	Scenario 1	Scenario 2
Private consumption	(6,244)	(12,488)
Net Foreign Direct Investment	9	19
Government Spending	10,069	13,426
Foreign Debt	5,171	6,895
Net Export	391	586

Source: Authors' own calculations

4. Conclusion

The paper aimed to estimate the impact COVID-19 on the Namibian economy. The paper established that, indeed, the impact of the virus is felt in the various sectors of the economy. The informal sector, although not formally recorded as a contributor to GDP, it was established that there are significant impacts on this sector emanating from the daily loss of income due to lockdown measures. The loss of income directly affect employment in the country since these people become temporarily unemployed, thus a reduction in domestic consumption.

Other sectors established to have been severely affected are tourism and transport, since the travel bans and closure of the boarders, ports and airports. The construction sector is also among those severely affected by the lockdown and the ripple effects from limited supply of construction materials from China. There were, however, some sectors regarded as winners during this period of the outbreak, and these are communication and technology, e-commerce and, partly, manufacturing.

In efforts to quantify the impact of the virus on the economy, various assumptions were applied. The findings reveal that Namibia could lose between N$5.1 billion and N$7.5 billion in GDP due to COVID-19 outbreak. An estimated loss in private demand of N$6 billion to N$12 billion was also estimated emanating from the lost business hours for non-essential retail shops, reduced demand due to loss of income and disrupted supply chains. Although the government has already started implementing the fiscal stimulus aimed to cushion the impact of the pandemic, the paper established that a once off income grant aimed for the unemployed and lost income is far lower than the lost income due to the lockdown.

Overall, the paper established that the impact of the COVID-19 may continue for reminder of 2020. If further established that, post 2020, recoveries may be slower until the time that entire domestic economy normalises and the rest of the world return to normal operations.

5. Policy Proposals

The paper, therefore, proposes specific interventions that need to be undertaken during and post the pandemic to ensure an accelerated path to economic recovery. Below, we highlight some of the proposals:

- Should the lockdown be extended, government needs to redefine rules and regulations of the state of emergency to specifically make rooms for the informal sector (open markets, part of street vending) to continue operating but under strict conditions similar to the provisions for the retail shops that are currently operating. By so doing, there will be not so much income lost and this could give a relief to fiscal authorities having to plan for more stimulus packages.

- Government to introduce program targeted to SMEs to urgently start venturing into other produces to help them cope during or post the COVID-19. This could entail producing services required in fighting against the COVID-19.

- Specifically for the tourism sector, Government together with the sector stakeholders need to already develop a quick strategy on how the sector can be supported to come back stronger and retain employees.

- Namibia to work on a strategy that outlines some of the small products/supplies that the country can start producing on its own, including food, to strengthen self-sustainability and avoid supply chain challenges should a similar outbreak such as COVID-19 hits the economy in the future.

- SADC region to consider drawing up a regional operations plan which entails opening up boarders for the region strictly for transportation of goods for all exportation and importation of outlined goods, therein, to continue. The region also needs to work on strategy to produce what can be produced and traded faster in the region (based on comparative advantages). This is especially for those goods that are currently being imported from outside the region for instance, when there exists regional potential.

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