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Ezeaku, Hillary and Asongu, Simplice

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Hillary C. Ezeaku
Department of Banking and Finance,
Caritas University, Enugu, Nigeria
E-mail: gijindu@gmail.com

Simplice A. Asongu
African Governance and Development Institute,
P.O Box 8413, Yaoundé, Cameroon.
E-mail: asongusimplice@yahoo.com

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Covid-19 and Cacophony of coughing: Did International commodity Prices catch influenza?

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Abstract

The Covid-19 outbreak has led to extensive declines in international commodity prices. The outbreak as well as measures fashioned to contain it has been weighing down on global supply chains and commodity prices. The pandemic has been accompanied with unprecedented shock that has disrupted both the demand and supply of commodities. In view of the widespread global impact of Covid-19, this paper analyses the impact of the outbreak on global commodity prices with particular emphasis on the energy, agricultural and metals and materials sectors using international global prices and indices to trend the movements. In the wake of oil price war and dampened oil demand, the energy sector was the most hit with 15% average monthly decline in energy indices between December 2019 and April 2020. Oil recorded its largest one-month plunge on record in March. Movements in coal indices showed more resilience to the pandemic compared to crude oil and natural gas. Base metals were the most affected sector after energy with -3.49% average monthly changes in indices between December 2019 and April 2020. Of the major base metals and minerals, aluminum appears less affected by the outbreak compared to copper and zinc. In contrast, precious metals prices and indices remain stable and is the only commodity sector with positive monthly average change (1.99%) during the period. Gold prices maintained steady gains while silver and platinum prices followed a similar but weaker trend. The agricultural commodity indices largely maintained strong upward movement but plummeted at monthly average of 0.89% between December 2019 and April 2020. Grains and cereals proved more resilient to Covid-19 pandemic compared to timber, beverages, raw materials, and oils & meals.

Keywords: Covid-9; Commodity Prices

JEL Classification: H12; I12; O10

1. Introduction

The novel coronavirus (Covid-19) pandemic has prompted a distressing health crisis throughout the world. While the impacts of the Covid-19 outbreak are still unfolding, the pandemic has already exerted significant effects on the economies of most countries (KPMG, 2020; Faria-e-Castro, 2020; Atkeson, 2020; Cullen, 2020; Price & van Holm, 2020) and the international financial and commodity markets. After recording a 2.9 percent growth in 2019, the global economy was projected to grow by 3.3 percent in 2020 until the outbreak of the Covid-19in China upset the world and invoked a significant shock on the crumbly situation of the global economy (Oskoui & Belaifa, 2020; Baldwin & di Mauro, 2020).

Commodity prices globally are down significantly since the coronavirus outbreak. The proximate cause can be linked to falling Chinese demand, with manufacturing, air travel and transport fuel severely hit by the outbreak (Ake International, 2020). Given that China has a significant share of global commodity imports, a significant domestic economic decline is expected to have contagion effects across the international commodity market (AKE International, 2020).

As Covid-19 continues to alter the trajectory of the global economy, commodity investments are likely to be less liquid and more volatile compared to other investments (Goldman Saches, 2020). The risk of loss associated with trading in commodities can be substantially significantas a result of volatile economic, political and market conditions. Commodity prices are inherently volatile since they respond rapidly to several unpredictable factors including labour strikes, weather conditions, foreign exchange rates, speculations, inflation etc. (Goldman Saches, 2020). According to the Economic Community of West African States (ECOWAS) Commission (2020), the spread of the virus has had negative economic impacts on commodity prices which are exogenously influenced.

Poor countries and most emerging economies often heavily depend on primary commodities exports, exposing their economies to such wild price swings as the world is currently witnessing (United Nations Coordinated Appeal, 2020). The Central Bank of Nigeria (CBN) (2020) has a similar perspective and highlights that the dwindling global output performance and growth since January 2020 has culminated in losses in global stock values, declining primary commodity prices and disruptions to the global supply chain mostly associated with global lockdown in

major economies in the world. Plummeting international commodity prices largely translate into huge losses in export earnings (Vam food security Analysis, 2020).

There seem to be a consensus that commodity prices have nosedived precipitously since the outbreak began (Erken et al., 2020; UNCTAD, 2020; Ozili & Arun, 2020; PWC, 2020a; United Nations Economic Commission for Africa [UNECA], 2020; Thilmany et al., 2020; Bank of International Settlement [BIS], 2020; Jackson et al., 2020; Ribakova, Ulku & Hilgenstock, 2020). Thus, theoretically, commodity prices are cyclically sensitive and are expected to decline as Covid-19 depresses the global aggregate demand and supply. In effect,Covid-19 reflects a combination of supply, demand, and uncertainty shocks (Vijlder, 2020; Hunter, Kim & Rubin, 2020) This has knock-on effects on commodity prices as well as financial conditions which in turn could weigh on growth (Vijlder, 2020; Crisil, 2020).

The energy sector has already felt the impacts of Covid-19 arising mostly from demand shocks (Kingsly & Henri, 2020). The pandemic has contributed to a decline in demand for oil, resulting in falling oil prices and declines in production, especially in the wake of the Organisation of Petroleum Exporting Countries (OPEC)-Russia price war. Likwewise, the outbreak has weighed down on the non-energy commodity sector. For instance, demand for copper has decreased, as major auto and home appliance manufacturing hubs have been hit by the outbreak and visible stocks are expected to continue building over coming weeks as demands keep dropping. Similarly, aluminium end-use demand as well as semi fabricators' operation has been affected by the outbreak, resulting in a large inventory build (Citigold, 2020). Prices of other raw commodities like cotton plunged even lower than experts projected, due to the worsening pandemic. As prices plummeted, producers were faced with the options of either making margin calls or liquidating their positions by way of price fixation. Producers largely preferred the latter option, which prompted the market to slide even further (United States Department of Agriculture [USDA], 2020).

Although when and how the Covid-19 outbreak would be contained is still an ongoing assessment, one of the important questions is to what extent the commodity prices have so far been affected by the epidemic. With data and literature on impacts of the Covid-19 pandemic still evolving, this paper x-rays the movements and trends of commodity prices using a recent monthly dataset to analyse the Global Price Index, Producer Price Index, Export Price Index and Imports Price Index for all commodities.

The focus of this study departs from the extant contemporary studies on the Covid-19 pandemic which have focused on, *inter alia*: the nexus between Covid-19 and oil price crash (Albulescu, 2020), analyzing the information-rich wheat markets at the early phase of Covid-19 (Vercammen, 2020); anticipating the impact of the Covid-19 on country-specific trade in commodities (Barichello, 2020) and farmland markets (Lawley, 2020), the impact of Covid-19 on nexuses between crude oil and agricultural futures (Wang et al., 2020) and a review of the socio-economic impact of the Covid-19 pandemic which touches on some commodities (Nicola et al., 2020).

The rest of the study is structured as follows. Section 2 provides an overview of the impact of Covid-19 on commodity markets while Section 3 discusses policy responses. Section 4 concludes with future research directions.

2. Overview of impact of Covid-19 on Commodity Markets

Weaker Demand and Supply Chain Disruption: the Corona virus outbreak has triggered an unprecedented combination of shocks to global commodity markets, weighing down on both demand and supply chains simultaneously. While measures taken to contain the pandemic are essential, they however have had adverse impacts on both the supply and demand of commodities. The unique combination of these shocks has had varying impacts on different commodities (World Bank, 2020).The pandemic gave rise to weaker global commodity demand. Most hit is the demand for energy and metals. Baffes, Kabundi, and Nagle (2020) argue that unlike demand for agricultural commodities, slowdown in economic activity strongly affects demand for energy and metals due to its higher income elasticity. Whereas energy price indices decline by -61.82 between December 2019 and April 2020, agricultural goods indices seem to be more resilient with the indices falling by -6.68% during the same period.

*Global, Producer, Export and Import Price Indices of all commodities on the decline***:** Commodity price indices have seen a significant decline as the pandemic continues to disrupt the global supply and demand chains. The global price index of all commodities (GPIAC) plummeted steadily from December 2019 through March 2020 with the margin of negative

difference widening every month (See Figure 1(a)). For the purpose of comparison, we took the monthly average of price indices in 2008 to represent the similar global shock caused by the Global Financial Crisis (GFC). The trend shows that GPIAC declined from 119.91 in December 2019 to 119.55 in January 2020. Moreover, GPIAC in February 2020 was 111.09 representing about 7.6% decline from the previous month, while GPIAC dipped by 18.3%in February to settle at 93.88 in March. When compared to the GFC when the GPIAC averaged 163.13, it can be said that the shocks associated with Covid-19 outcomes had more negative impacts on the global commodity prices compared to that experienced during the global financial crisis.

Similarly, Producer price Index, and Export and Import indices for all commodities have displayed modest declines between December 2019 and March 2020. While the Producer Price index ((See Figure 1(b)) and Import price index (See Figure 1(c)) appeared to have been hit more severely during the GFC, Import indices recorded is shown to have a more downward tick as a result of the Covid-19 pandemic compared to the GFC (See Figure 1(d)).

Figure1. Trends of commodity price Indices

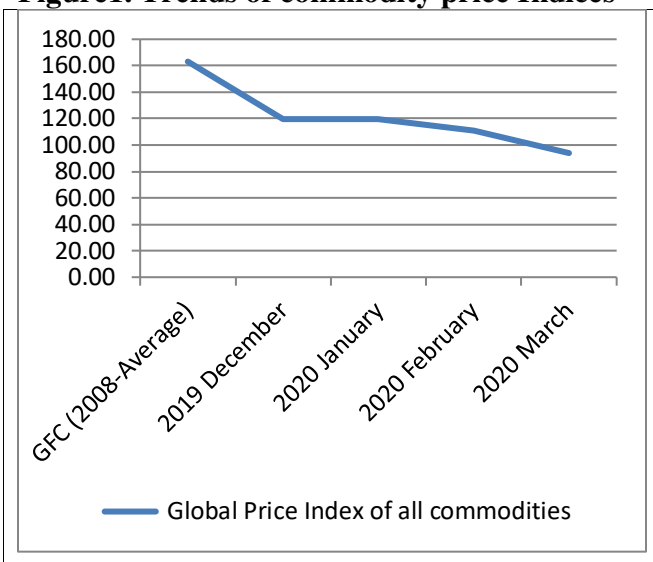


Figure 1(a)

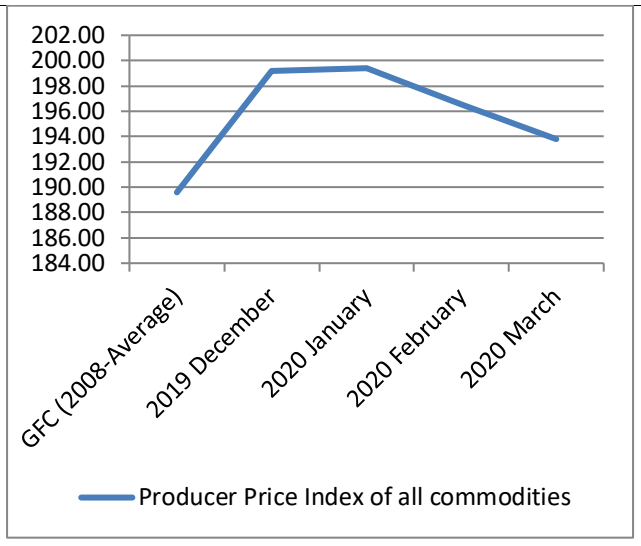


Figure 1(b)

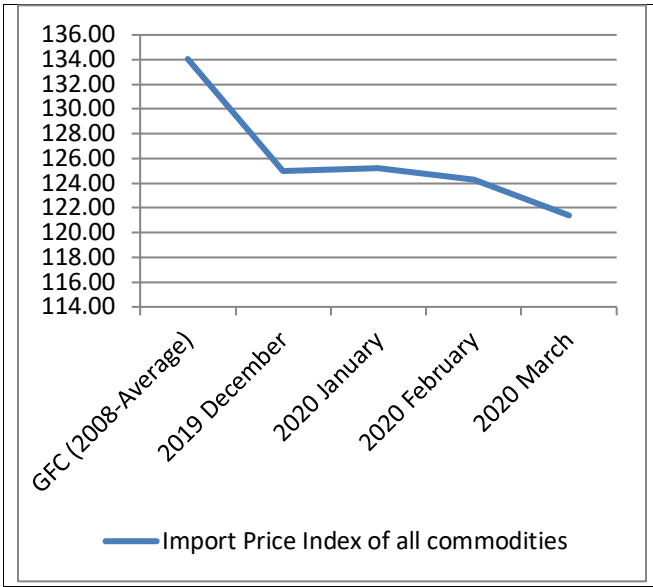


Figure 1(c)

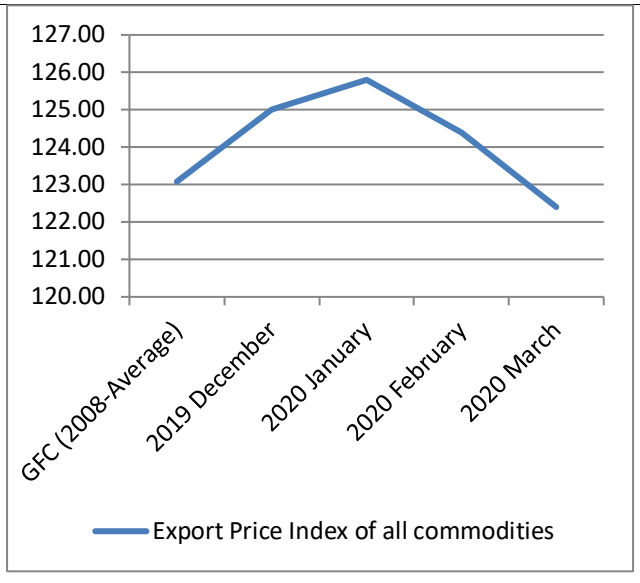
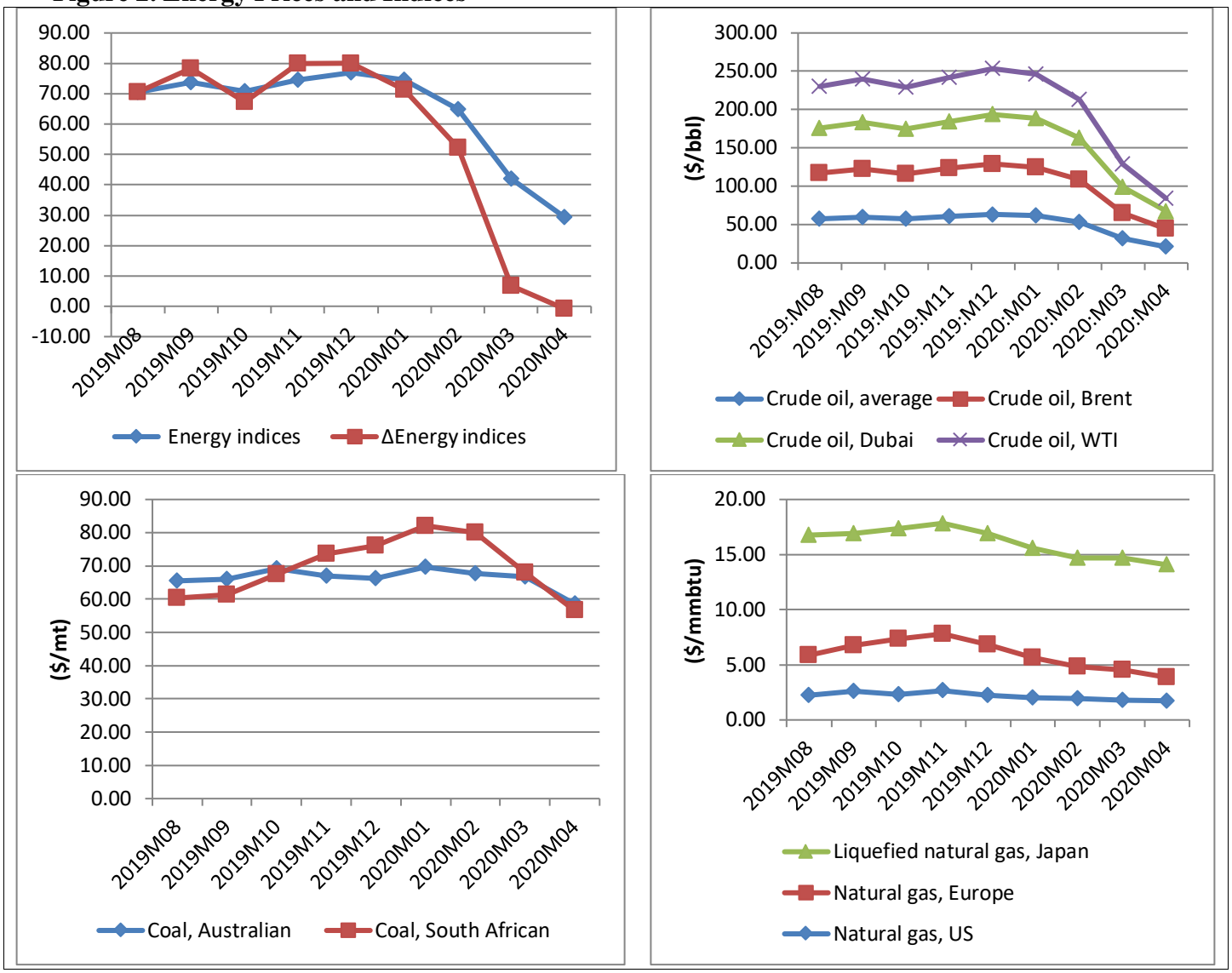


Figure 1(d)

Energy Prices plummets: The impact of the pandemic has continued to hit the energy sector. The energy market is facing new signs of weakness as Covid-19 weigh down on refinery demand for crude oil (Citigold, 2020).The outbreak has led to dampened oil demands, resulting in plunging oil prices as well as declines in global oil production, especially in the wake of the OPEC-Russia price war (PWC, 2020). Energy indices and crude oil prices saw steady decline from December 2019. Changes in both parameters were in the negative trajectory through April 2020 as shown in Figure 2. Within the period, energy indices and average crude oil price declined by 61.82% and 66.78%, respectively. Month-on-month basis, energy indices declined by 12.73% between January and February, 35.24% between February and March, and 30.19% between March and April 2020. As signs of rebound are weakened by prolonged global lockdown which has continued to affect the swiftness of global economic recovery, crude oil prices generally ticked downwardly in negative territory.

The trend of falling industrial production is further reflected across diverse components of the energy sector, spanning coal to natural gas which, as shown in Figure 2, plummeted during the period. Coal saw a more rapid plunge compared to natural gas that also declined but at a less decreasing rate. However, the depression experienced in the coal sector may reverse as domestic coal mines have been urged by the National Energy Agency to resume coal production.

Figure 2. Energy Prices and Indices



Agricultural prices showing signs of resilience with moderate declines in indices: On the supply side, the agricultural sector could be impacted through shortages of labour which would limit food production and processing, especially of labour-intensive produce. Transportation world over has been significantly interrupted, and quarantine measures have restricted access of farmers to input and output markets which have brought about an increase in global food loss and waste arising from food supply chain disruptions (World Food Program [WFP], 2020). As shown in Figure 3, the agricultural commodity indices largely maintained a strong upward

movement from November 2019 to January 2020. Average monthly decline in agricultural indices between December 2019 and April 2020 was -0.89%.

Meanwhile, amid the pandemic, global cereal and grains markets appear well supplied with currently no significant impact on crop production (WFP, 2020). As shown in Figure 4, grains and cereals proved more resilient to Covid-19 pandemic compared to other agricultural produce. This may be an indication of low price volatility in the international grains market. In Figure 5, Percentage change in grains indices between December 2019 and April 2020 remains positive at 5% while timber (-3.64%), raw materials (-5.06%), beverages (-7,16%), and oils and meals (-9.09%) were the most affected by the outbreak.

Figure 3. Agricultural Sector Indices

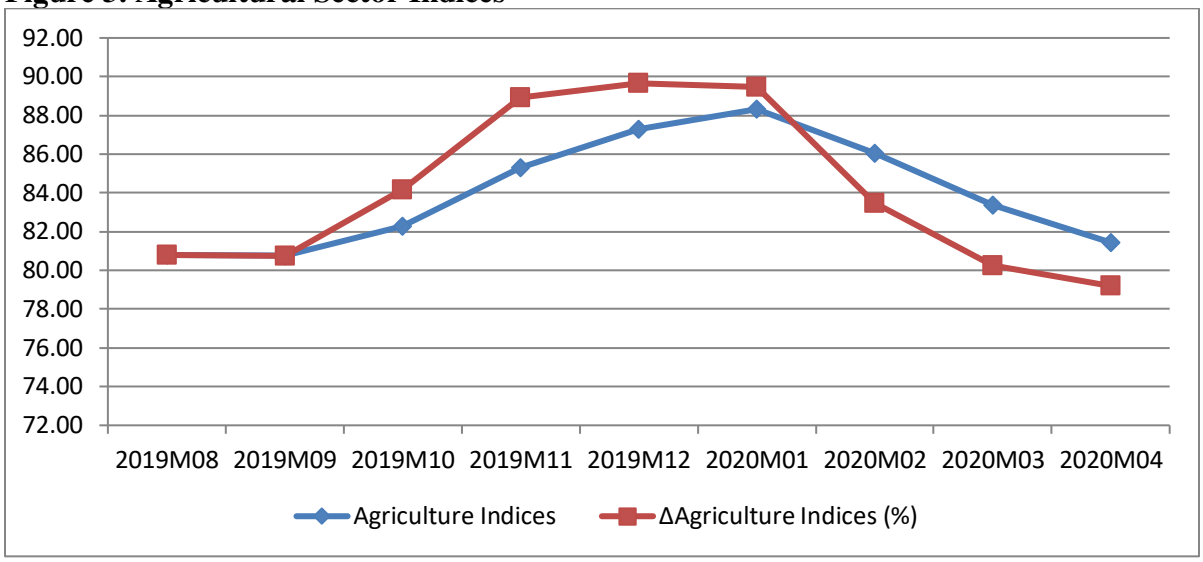


Figure 4. Crops and Raw material Indices

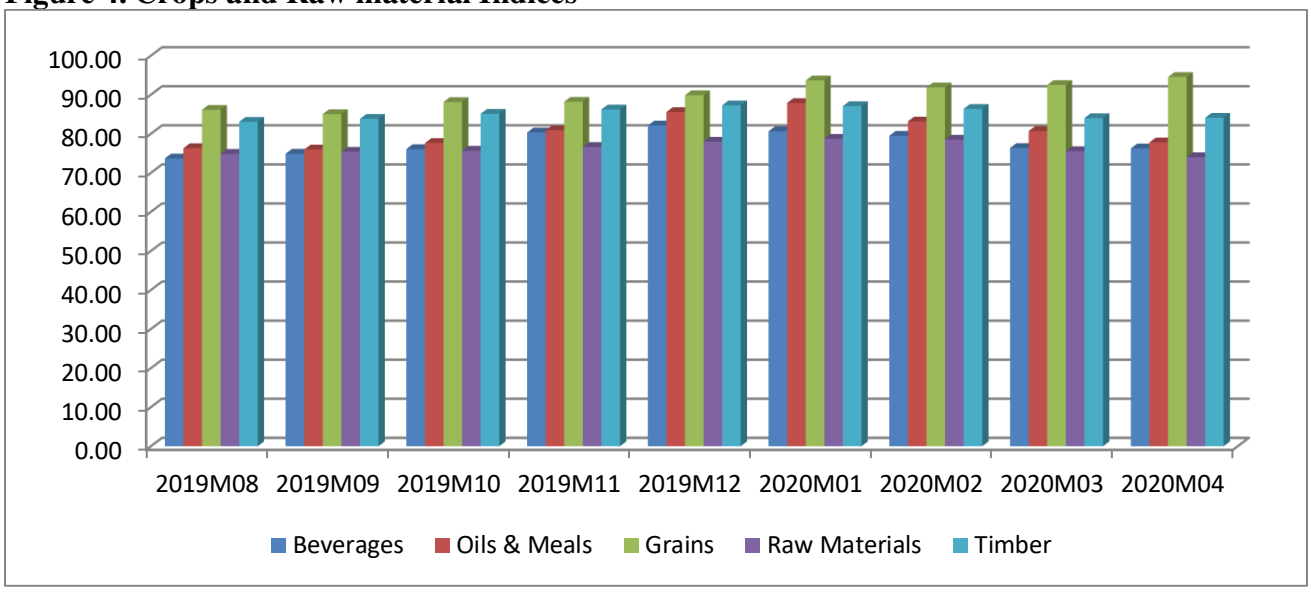
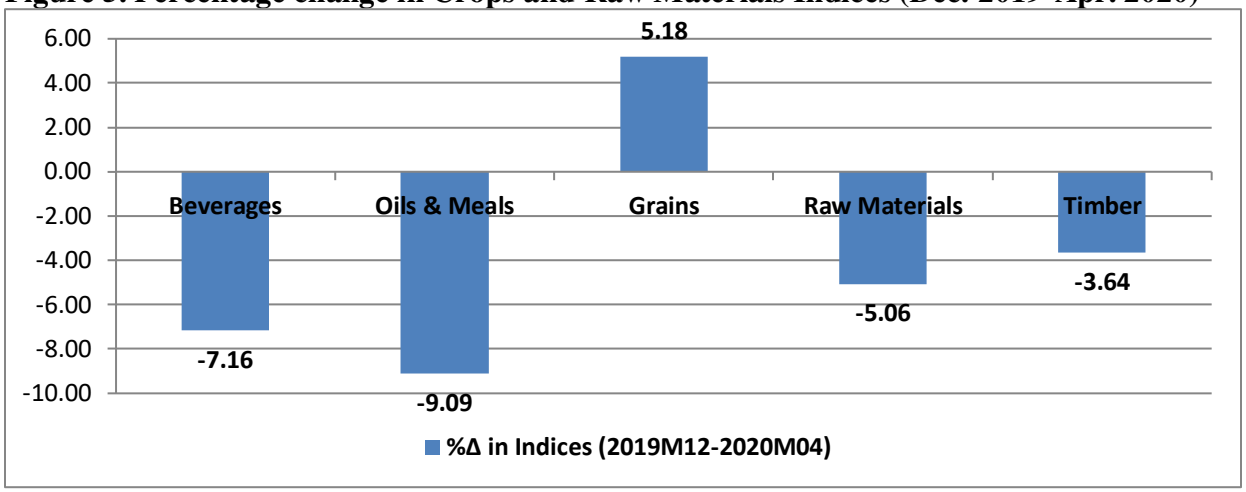


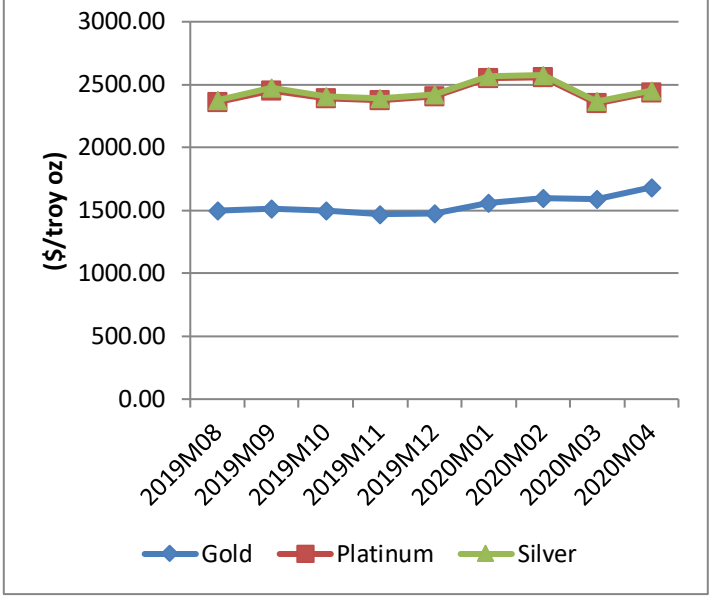
Figure 5. Percentage change in Crops and Raw Materials Indices (Dec. 2019-Apr. 2020)



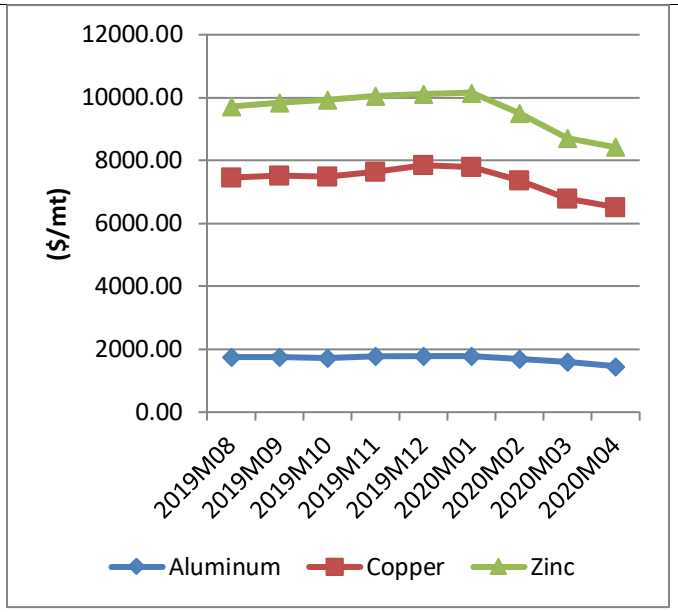
Base and Precious metals showing some resistance: Demand for copper and base metals have weakened, largely from Covid-19. This has lingered on as major auto and home appliance manufacturers around the world were hit by the virus outbreak. Similarly, the pandemic has weighed down on zinc and aluminum end-use demand. The outbreak has led to the shutting down of mines and decline in global base metals end-use demand. Of the major metals and minerals, aluminum appears to be less affected by the outbreak compared to copper and zinc (See Figure 6). Moreover, prices of precious metals have been fairly stable throughout the period of the outbreak. Gold prices maintained a steady increase while silver and platinum prices

followed similar but at a weaker trend. Prices for all the precious metals fell only in March with some signs of a bounce back as reflected in their April price indices.

Figure 6. Base and Precious Metals Prices



Precious Metals Prices



Metals and Minerals Prices

3. Policy Response

In the prolonged scenario where Covid-19 continues to threaten the global economy, its economic impact could be strong due to weak demand and extended disruption in the supply chains. In this case, contraction of the global trade will be even more virulent, and will consequently affect the international commodity market and drive down the prices of commodities (Oskoui & Belaifa, 2020). It is therefore important to highlight that under such long-lived disruption, aftershocks responses have to be considered. At first glance, monetary policy as a response may appear ineffective in addressing the economic impact of Covid-19 especially when measures taken to contain the outbreak also depress economic activities globally. For instance, a slash in rate may not have the desired impact when there are disruptions in value chains of business entities and organisations around the world while, at the same time, households cannot go to work due to lockdown and travel restrictions. However, given the

functioning of the financial market, the timely actions of central banks can bring back confidence and help address the growing liquidity constraints and squeeze confronting companies as well as primary producers (De Vijlder, 2020). Moreover, even though fiscal policy cannot address the persistent drop in economic activity largely from Covid-19, it can directly support the shortfalls in demand. This could be by taking targeted fiscal measures towards small and medium-sized enterprises and such other sectors of the economy severely affected by demand and supply shocks. Specifically, governments can address this by stepping up social security payments, provision of loan guarantees, deferring value added tax, accelerating loan waivers – especially for farmers and critically affected extractive sub-sectors, and providing multi-phased stimulus for critical sectors of the economy. Hence, there is need for governments to identify strategic sectors with most production needs. In addition, as weak links in supply chains and dampened demand are expected, firms and manufacturing hubs can enhance their survival and profitabilities by reviewing their value chains structure, and making efforts to be less geographically confined.

4. Conclusion and future research directions

The Covid-19 pandemic represents a mix of supply, demand and uncertainty shocks. This has sapping effects on the international commodity market and has worsened financial conditions which is weighing on growth and may undermine economic recovery. Although the economic impact of the outbreak is wide-ranging, this paper has assessed its impact on the commodity market with particular emphasis on the energy, agricultural and metals and materials sectors using international global prices and indices to trend the movements. Commodity price indices have seen a significant decline as the pandemic continues to disrupt global supply and demand chain. The global price index of all commodities plummeted steadily from December 2019 through March 2020. Similarly, Producer price Index, and Export and Import indices for all commodities have displayed downward ticks within this period.

In the wake of oil price war and dampened oil demand, the energy sector was the most hit with 15% average monthly decline in energy indices between December 2019 and April 2020. The overall energy indices and crude oil prices saw steady declines from December 2019. Changes in both parameters were in the negative trajectory through April 2020. Movements in coal indices showed more resilience to the pandemic compared to crude oil and natural gas.

Base metals were the most affected sector after energy with -3.49% average monthly changes in indices between December 2019 and April 2020. Of the major metals and minerals, aluminum appears less affected by the outbreak compared to copper and zinc. In contrast, precious metals prices and indices remain stable with the only sector with positive monthly average change (1.99%) between during the period. Gold prices maintained steady gains while silver and platinum prices followed similar but weaker trend.

The cascading impact of the outbreak also had knock-on effect of the agricultural sector. The agricultural commodity indices largely maintained strong upward movement from November 2019 to January 2020 but plummeted at monthly average of 0.89% between December 2019 and April 2020. Grains and cereals proved more resilient to the Covid-19 pandemic compared to timber, beverages, raw materials, and oils & meals.

As the relevant data become available, insights into this exploratory study could be improved with an empirical assessment that leverages on the attendant data. Moreover, using the corresponding data to examine the ramifications of such shocks on industrial development in developed and developing countries is also worthwhile.

References

Albulescu, C., (2020). Coronavirus and Oil Price Crash, Politehnica University of Timisoara https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3553452

Atkeson, A. (2020). What will be the economic impact of COVID-19 in the US? Rough estimates of disease scenarios. *NBER Working Paper Series*, (26867), 1–27.

Baldwin, R., & di Mauro, W. B. (2020).Economics in the Time of COVID-19.*Centre for Economic Policy Research (CEPR)*, 1–123.

Barichello, R., (2020). The COVID-19 Pandemic: Anticipating its Effects on Canada's Agricultural Trade, *Canadian Journal of Agricultural Economics*, DOI: 10.1111/cjag.12244.

Central Bank of Nigeria (CBN). (2020). *Central Bank of Nigeria Communiqué no. 129 of the Monetary Policy Committee Meeting of Monday 23rd and Tuesday 24th march 2020*. Available at https://www.cbn.gov.ng/documents/mpc.asp

Citigold. (2020). COVID-19: A Review of Global Economic Impact. *Monthly Market Outlook*, (March), 1–11.

CRISIL (An S&P Global Company). (2020). The Covid-19 Fallout: Quantifying first-cut impact of the pandemic. *Impact Note*, (March 19), 1–44. Available at https://www.crisil.com/content/dam/crisil/our-analysis/views-and-commentaries/impact-note/2020/march/the-covid-19-fallout.pdf

Cullen, M. T. (2020). COVID-19 and the risk to food supply chains: How to respond? *Food and Agricultural Organization (FAO)*, (March), 1–7. Available at http://www.fao.org/3/ca8388en/CA8388EN.pdf

De Vijlder, W. (2020). The Covid-19 Pandemic: Economic Consequences Pervasive Uncertainty, Delayed Recovery. *BNP Paribas, Economic Research Department*, (March), 1–51.

United Nations Economic Commission for Africa.(2020). *Economic Impact of the COVID-19 on Africa*. Available at https://www.uneca.org/sites/default/files/uploaded-documents/stories/eca_analysis_-_covid-19_macroeconomiceffects.pdf

Economic Community of West African States (ECOWAS). (2020). ECOWAS Measures to prevent and contain the spread of corona virus desease 2019 (COVID-19). Available at https://www.ecowas.int/ecowas-measures-to-prevent-and-contain-the-spread-of-coronavirus-disease-2019-covid-19/

Erken, H., Middeldorp, M., Hayat, R., &Ji, K. (2020). Global Economic Outlook: COVID-19 has taken a hold of the global economy. *Economic Quarterly Report*, (March), 1–6.

Faria-e-castro, M. (2020).Fiscal Policy during a Pandemic.*Federal Reserve Bank of St. Louis Working Paper Series*, (2020-006D), 1–37.

Goldman Sachs. (2020). SARS-Coronavirus-2/COVID-19: An Update on Testing, Therapies, Vaccines, and the Healthcare System. *The Investment Strategy Group (ISG) in the Consumer and Investment Management Division of Goldman Sachs.*, (Fifth in a Series), 1–36. Available at https://www.goldmansachs.com/insights/talks-at-gs/sharmin-mossavar-rahmani-f/deck.pdf

Hevia, B. C., &Neumeyer, A. (2020). A Conceptual Framework for Analyzing the Economic Impact of COVID-19 and its Policy Implications.*UNDP LAC C19 PDS*, (1), 1–18.

Jackson, J. K., Weiss, M. A., Schwarzenberg, A. B., & Nelson, R. M. (2020).Global Economic Effects of COVID-19.*Congressional Research Service (CRS) Report*, (R46270 March), 1–49.

Kingsly, K. M., & Henri, K. (2020).COVID-19 and Oil Prices. Retrieved from Available at SSRN: https://ssrn.com/abstract=3555880 or http://dx.doi.org/10.2139/ssrn.3555880

KPMG. (2020). COVID-19 Economic Impacts: Beware the Ides of March - A Day Romans Settled Debts. *KPMG Economics*, (March 19), 1–52.

Lawley, C., (2020). Potential impacts of COVID-19 on Canadian farmland markets, *Canadian Journal of Agricultural Economics,* DOI: 10.1111/cjag.12242.

Nicola M, Alsafi Z, Sohrabi C, Kerwan A, Al-Jabir A, Iosifidis C, Agha, M., & Agha, R. (2020). The Socio-Economic Implications of the Coronavirus and COVID-19 Pandemic: A Review. *International Journal Surgery*, 78(June), pp. 185-193

Oskoui, K. N., &Belaifa, M. (2020).Impacts of Coronavirus on the Global Economy.*GECF*, (March), 1–4. Available at https://www.gecf.org/_resources/files/events/impacts-of-coronavirus--on-the-global-economy/gecf-commentary-impacts-of-coronavirus-on-the-global-economy.pdf

Ozili, P. K., &Arun, T. (2020). Spillover of COVID-19: impact on the Global Economy. *SSRN Electronic Journal*, (March), 1–24. https://doi.org/10.2139/ssrn.3562570

Points, K. (2020).The Economics of Covid-19.*AKE Special Report*, *44*(March), 1–10.

Price, G. & van Holm, E. J. (2020). The Effect of Social Distancing Onthe Spread of Novel Coronavirus: Estimates From Linked State-Level Infection And American Time Use Survey Data, Urban Entrepreneurship and Policy Institute, University of New Orleans, New Orleans.

PWC. (2020a). *COVID-19: What it means for the energy industry*. Available at https://www.pwc.com/us/en/library/covid-19/coronavirus-energy-industry-impact.html

PWC. (2020b). The possible economic consequences of a novel pandemic.Australia Matters, 1-10. Available at https://www.pwc.com.au/publications/australia-matters/economic-consequences-coronavirus-COVID-19-pandemic.pdf

Ribakova, E., Ulku, U., &Hilgenstock, B. (2020).Macro Notes – COVID-19-Induced Recession in CEEMEA.*Institute of International Finance*, 1–2.

Thilmany, D., Jablonski, B., Tropp, D., Angelo, B., & Low, S. (2020). Mitigating Immediate Harmful Impacts of COVID-19 on Farms and Ranches Selling through Local and Regional Food Markets. *The National Sustainable Agriculture Coalition*, (March), 1–4.

United Nations Conference on Trade and Development [UNCTAD]. (2020). *The Covid-19 Shock to Developing Countries: Towards a "whatever it takes" program for the two-thirds of the world's population being left behind*. Available at https://unctad.org/en/PublicationsLibrary/gds_tdr2019_covid2_en.pdf

United States Department of Agriculture (USDA).(2020). Weekly Cotton Market Review.*Weekly Cotton Market Review*, *101*(35), 1–11.

Vercammen, J.,(2020). Information-rich wheat markets in the early days of COVID-19, *Canadian Journal of Agricultural Economics*, DOI: 10.1111/cjag.12229.

Wang, J, Shao, W., & Kim, J., (2020).Analysis of the impact of COVID-19 on the correlations between crude oil and agricultural futures, *Chaos, Solitons& Fractals*, 136(July), 109896.

World Bank.(2020). Commodity Markets Outlook.*Special Focus*, (April), 7–16.

World Food Program (WFP). (2020). *Economic and food security implications of the COVID-19 outbreak: The cost of the attempt to contain a highly contagious disease*. Available at https://docs.wfp.org/api/documents/WFP-0000113485/download/