

Differential impact of Covid-19 pandemic on African countries

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At the beginning of the Covid-19 pandemic, it was feared that Africa, due to its poor economy and scarce medical resources, might not be able to withstand the pandemic well. Fortunately, that did not happen, at least in the sense that most countries in Africa did not suffer from large fatalities, compared with many other countries in the world. However, still there is a deeper and more subtle issue here: has the Covid-19 pandemic impacted African countries differentially, such that may some African countries, especially those economically among the poorest, have been impacted so adversely that some qualitative change has occurred at the beginning or some time in the middle of the pandemic? To answer this question, we have used the Global Database of Events, Language (or Location), and Tone (GDELT), which is a massive political science database created for studying worldwide political conflict and instability. It includes more than 700 million distinct events across all countries, from news coverage of more than 100 languages, during the period from 1979 to the present. We have constructed an index, which we call negative national power index, NPI(-), which is a proxy of the negative image or risk of a country. A few examples of NPI(-) are shown in Fig. 1. We find (1) NPI(-) for African countries are much smaller than those for the US and other great powers, indicating that African countries only have had limited global attention and influence. (2) NPI(-) do have bifurcation-like changes either at the beginning or some time in the middle of the pandemic for some African countries. It turns out those countries are concentrated at the Sahara Belt, which are among the poorest, with their GDP per capita often less than 1/10 of the world average, as shown by the RCW curves in Fig 2, where RCW is defined as the ratio between the GDP per capita of a country and that of the world average. (3) Careful examination of the conflicting events leading to sudden increase of the NPI(-) curves for the African countries along the Sahara Belt reveals that major events underlying the sudden increase of NPI(-) for those countries are mainly comprised of three types of events, coerce, assault, and fight, manifest as riots, disturbances to society, and terrorist activities. Therefore, the Covid-19 pandemic indeed has impact economically poor African countries more profoundly, such as more people in those countries have had more difficulty to survive. In turn, riots, terrorism, etc., have increased more significantly in the countries along the Sahara Belt more than elsewhere in Africa.

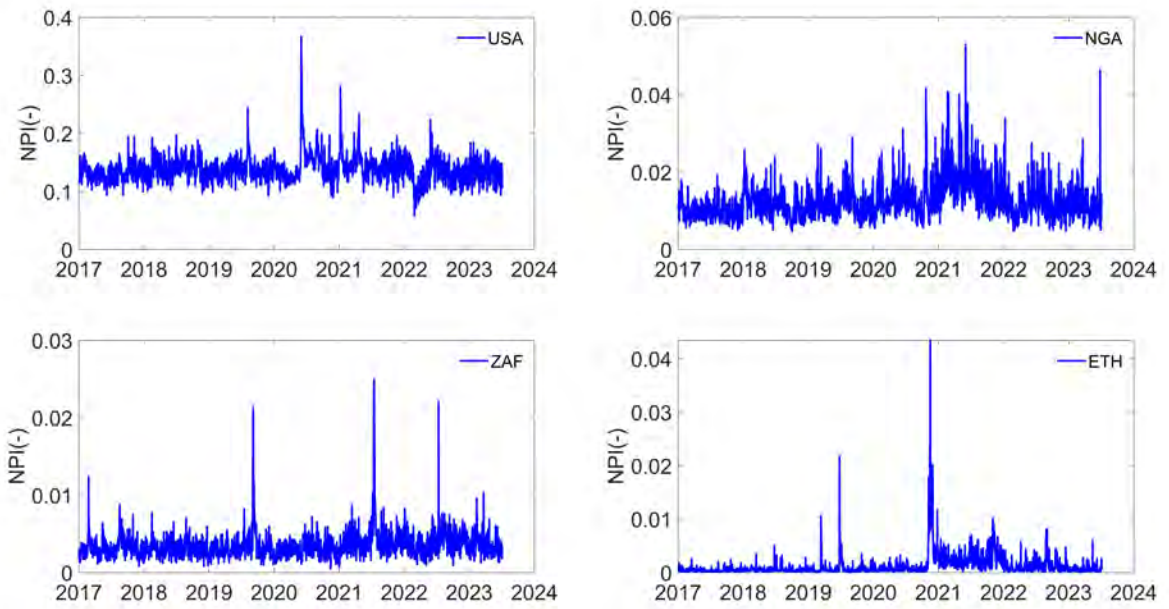


Figure 1: NPI(-) curves for the US and three African countries, including Ethiopia, South Africa, and Niger.

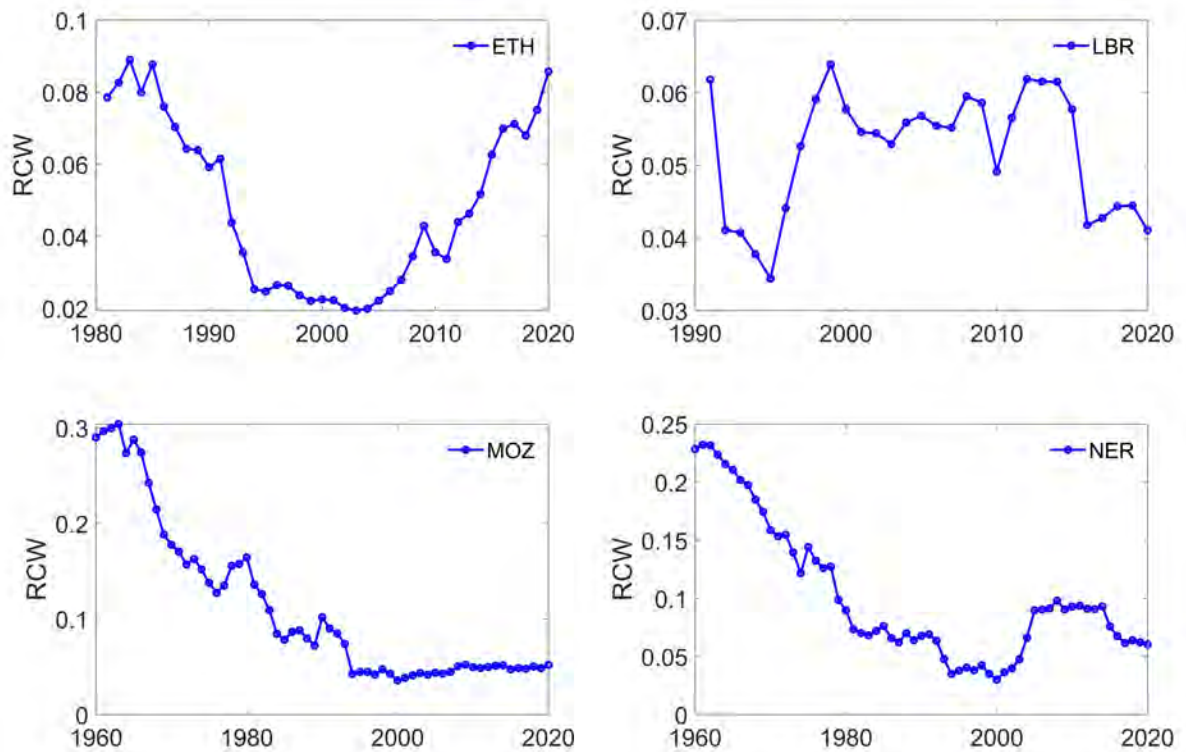


Figure 2: RCW curves for four African countries, Ethiopia, Liberia, Mozambique, and Niger.