Industrial Recovery in post-COVID-19 Sub-Saharan Africa

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Industrial Recovery in post-COVID-19 Sub-Saharan Africa

Massoud Hedeshi*

Abstract

This paper analyses Sub-Saharan African (SSA) countries' industrial development challenges and potential in the context of the COVID-19 pandemic with a long-term, eclectic, and Non-Aligned political economy approach. Central to this assessment is a review of the potential impact of the pandemic on industry, the record of SSA's industrial development efforts, the factors of success for newly industrialised countries in the global South, identification of key drivers for industrial development, and a critique of the geopolitically-driven, neo-colonial role of multinational corporations (MNCs) and various multilateral and bilateral 'aid' agencies in SSA's policy space. The paper focuses on a) the transient nature of pandemics and the unlikelihood of a major exacerbating impact on SSA's chronic economic vulnerability by COVID-19, b) a long-term deindustrialisation trend that is exacerbated by the activities of many MNCs in the region, c) the misallocation of scarce regional resources toward non-essential imports and debt, and d) a high opportunity cost to the realisation of SSA's long-term industrial development potential caused by externally-imposed, non-productive policies designed to maintain detrimental terms of trade for Africa since the early 1980s. The paper concludes that the key to sustainable industrialisation for SSA countries is first and foremost in taking full ownership of their means/factors of production and distribution in a collective manner. Recommendations include: writing-off unsustainable debts; accumulating savings and capital; diversifying production; investing in regional value chains; rationalising consumption; and exacting greater control over MNCs' regional practices and finances. It is suggested that success in such endeavours will be largely dependent on political determination, unprecedented regional solidarity, pooling of resources, and mobilisation of the youth.

Keywords: industrial development, geopolitics, MNCs, value chains, terms of trade, post-COVID recovery, industrial policy

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1. Introduction

Recent decades have clearly demonstrated a need for greater stability and resilience in the global economy. Booms, busts, environmental degradation, widening inequality, natural and human-made disasters, conflicts, and an unprecedented global refugee crisis have been the hallmarks of a world otherwise apparently committed in recent years to Agenda 21, halving absolute poverty first through the Millennium Development Goals followed by the Sustainable Development Goals. With the global impact of the COVID-19 pandemic added, it is increasingly apparent that current production, trade, and consumption practices and relations are destabilising the world, both socially and environmentally. Over the period Jan-Oct 2020, GDP contractions ranged from 2% to 20% (IMF, 2020, p.67) among several countries across the world with alarming levels of rising unemployment and social instability.

The pandemic has revealed the critical role that a strong, indigenous, and sustainable manufacturing sector plays in the resilience and stability of countries. The capacity to produce goods needed for the smooth functioning, maintenance, and operations of various economic sectors (such as agribusiness, health, energy, education, utilities, telecommunications, transportation infrastructure, and machinery), and the capability and the central role of states to cater for the basic needs and protection of their people in times of crises is largely dependent on a well-developed industrial sector that is oriented toward social inclusion and economic justice over and above the private profit motive without necessarily negating or dismissing the role or desirability of the latter.

It has, in addition, further exposed the risks and vulnerabilities involved in a country's over-dependence on services, tourism, foreign aid/investment and loans, and imports of know-how, basic goods, and machinery. Furthermore, the presentation of 'export orientation' and/or 'private sector-led free trade' as a panacea versus centrally-planned import-substitution for newly industrialising countries has been exposed as a false dichotomy.[1] Ideologies and geopolitical agendas aside, there is no logical reason for pitting the state and the private sector against each other under the guise of economic/political "science". This assertion is evidenced by the rise of 'economic nationalism' and heavily state-centred, anti-market pandemic response strategies adopted by several OECD countries. It is also important to note that OECD countries' highly interventionist responses to the current pandemic crisis are similar to how the 2008 Financial Crisis (caused, one could argue, by an entirely deregulated, corrupt, and private financial sector) was responded to by the same. Both crises have demonstrated that the 'private sector' and 'the market' are fragile and unable to handle crises without state intervention.

Among Sub-Saharan African (SSA) countries, COVID-19 infection rates were on the rise in 2020 with the appearance of new and more infectious virus mutations, but the recorded incidence and fatality rates in 2020 remained comparatively low. As of November 4, 2020, the COVID-19 mortality rate per million of population in SSA stood at 18, while the global

[1] In the sense that import substitution is a logical prerequisite for successful export performance.

average stood at 154. Moreover, the rate for Africa as a whole was 25, while the figures for Asia, Europe, Southern America, and Northern America stood at 60, 386, 690 and 926, respectively (see Table 1 below). Since then, the rates around the world have fluctuated as COVID-19 infections flare up and then stabilise, but Africa's share of cases remains significantly lower than in other parts of the world.

Despite lower incidence rates and with relatively underfunded health systems[2], and the experience and prevalence of other endemic diseases such as HIV[3] and malaria[4], virtually all countries in SSA began introducing containment measures early on in 2020[5].

Table 1: Comparative population data, crude death rates, and COVID-19 mortality rates.

	World	*Africa*	*Sub Saharan Africa*	*Asia*	*Oceania*	*Southern America*	*Central America*	*Northern America*	*Europe*
Total population millions	*7,795*	*1,351*	*1,094*	*4,641*	*43*	*431*	*180*	*369*	*748*
Population Density (per Sq km)	*60*	*45*	*51*	*150*	*5*	*33*	*33*	*20*	*34*
Life expectancy (WHO, 2016)	*73*	*63*	*62*	*73*	*78*	*75*	*75*	*79*	*78*
Median age	*30*	*20*	*19*	*31*	*36*	*31*	*31*	*38*	*43*
Crude Death rate (annual, per million, all causes combined)	*7,500*	*8,200*	*7,300*	*6,900*	*6,800*	*6,300*	*6,300*	*8,600*	*11,000*
Total CV-19 fatalities, as of Nov 4 '20	*1,204,028*	*34,404*	*20,000*	*276,246*	*940*	*297,388*	*14,903*	*341,513*	*289,052*
CV-19 Fatality rate (per million)	*154*	*25*	*18*	*60*	*22*	*690*	*83*	*926*	*386*

Sources: Author's own calculations based on: https://www.brookings.edu/blog/brookings-now/2019/01/18/charts-of-the-week-africas-changing-demographics/; UN Population Data, https://population.un.org/; WHO data, https://COVID-19.who.int/; World Bank, https://data.worldbank.org/indicator/EN.POP.DNST; (all accessed December 2020).
Notes: Population density for Oceania is skewed by Australia's low score. Big variation exists across the Oceania region from 3 up to 600 (see https://who.maps.arcgis.com/). Around 66% of deaths by November 2020 occurred in South Africa.

Furthermore, it is widely recognised that younger people are more resilient to COVID-19, and the fact that Sub-Saharan Africa has the youngest population in the world with a median age of 19 as compared to a global median age of 31 (see Table 1 above), bodes well for the

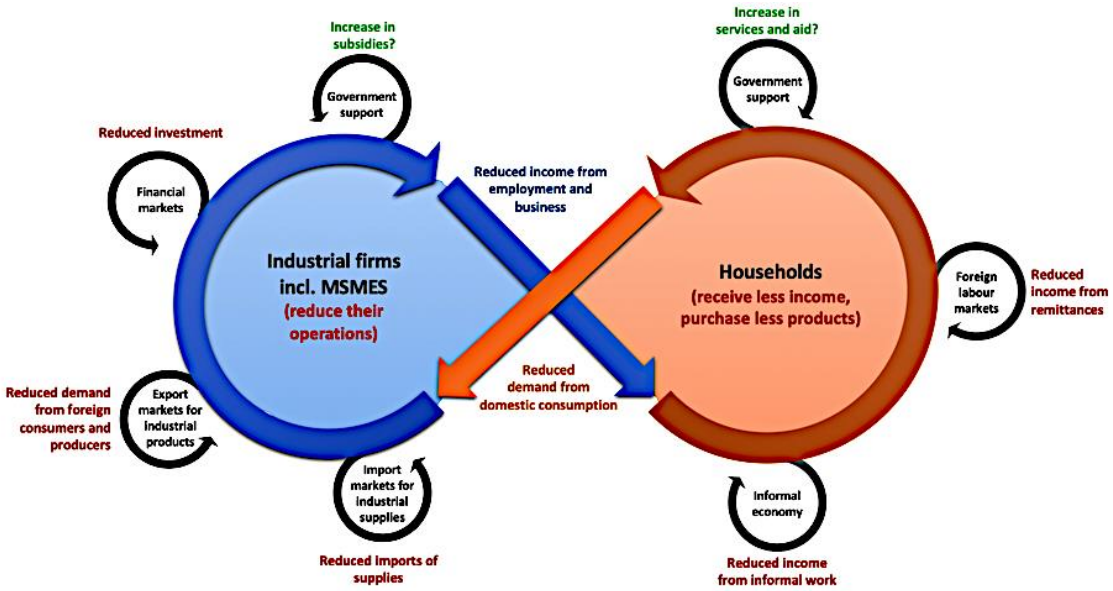
[2] Standing at $200 per capita PPP for SSA as compared to a global average of $1,409 in 2017 (World Bank, https://data.worldbank.org/indicator/SH.XPD.CHEX.PP.CD).
[3] Two-thirds of all people living with HIV – 25.7 million out of a global total of 33 million – were recorded in Africa in 2019 (WHO HIV Factsheet, July 2020, https://www.who.int/news-room/fact-sheets/detail/hiv-aids).
[4] In 2018, 93% of all global cases of malaria occurred in Africa while "six Sub-Saharan countries accounted for more than half of all malaria cases worldwide: Nigeria (25%), the Democratic Republic of the Congo (12%), Uganda (5%), and Côte d'Ivoire, Mozambique and Niger (4% each)" (WHO, World malaria report 2019. https://www.who.int/news-room/feature-stories/detail/world-malaria-report-2019).
[5] See ICNL, African Government Responses to COVID-19. https://www.icnl.org/post/analysis/african-government-response-to-covid-19

region's continued resilience against the virus. This would be expected to be further boosted by the fact that Africa has much experience and know-how in fighting and containing the spread of infectious diseases such as HIV and Ebola despite a relative shortage of resources.

2. COVID-19 expected impact on SSA economies

Against the above background, the most negative impact of the global COVID-19 pandemic for the SSA region would be expected in the economic realm, particularly for informal sector micro and small business traders and producers who cannot afford to abide by lockdowns, have lost remittances from their families abroad, and whose lowered income would further reduce local demand for manufactures, as described in Figure 1 (below).

Figure 1: Effects of COVID-19 on SSA industries and households.

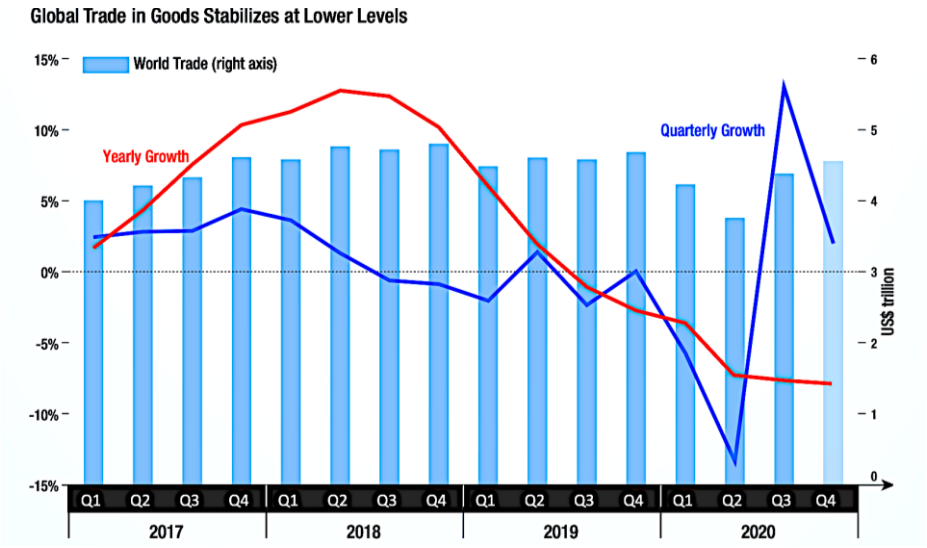


Source: Hartwich & Hedeshi, 2020.

The impact of the pandemic on global trade in goods has, in fact, been lower than feared: "Overall, UNCTAD expects a drop of 7-9% in world trade for 2020, depending on the severity of the pandemic" (UNCTAD, 2020). In fact, global trade in goods fell by a larger margin (around 12%) over 2018-2019, as Figure 2 below shows. Interestingly, trade among developing countries has been more resilient for both imports and exports, and South-South trade has been more resilient than among other country groupings. The latest UNCTAD data shows a record-breaking, global South-led trade recovery in 2021, particularly in the goods sector.[6]

[6] See https://unctad.org/news/global-trades-recovery-covid-19-crisis-hits-record-high

Figure 2: Global Trade Trends 2017-2020.



Source: UNCTAD Global Trade Update, Oct. 2020.

The severity of the pandemic's impact on the SSA region's industrial development, therefore, is unlikely to be as severe as initial concerns, in large part due to the relative inelasticity of demand for essential and comparatively cheap primary commodities, the production practices of which are often mechanised (particularly in extractive industries and industrial farms) and therefore 'socially distanced'.

As would be the case with most global recessions, the hardest hit sectors would be luxury goods and services, particularly tourism. Conversely, economic crises tend to favour low-cost, affordable goods and services due to the general population's lower purchasing power. The pandemic may, in fact, serve as a boost in demand for cheaper local produce and greater diversification in SSA's industrial production (e.g. in economic restructuring, prioritising industry above services, the local production of medical supplies and vaccines[7], infrastructure, and general, global recognition of the desirability of local and regional manufacturing and trade within shorter value chains, inter alia in relation to both climate change and emerging geopolitical shifts) once the initial shock of lower global trade is absorbed, as will be discussed below.

Due to their considerably lower rates of infection, the pandemic has not affected economic activity quite as much in most of Asia and Africa and has had little impact on the transportation of goods for most of these countries. According to UNIDO[8], Rwanda and South Africa had largely recovered their production level losses by July 2020, while Senegal's production remained under par. Moreover, the pandemic has presented a forced opportunity for increasing African intra-trade, South-South trade, and diversification in local production.

[7] See for example https://www.nature.com/articles/d41586-021-01048-1
[8] UNIDO's index of industrial production (IIP) measures the growth of the volume of industrial production in real terms, free from price fluctuations on a monthly or quarterly basis.

On the other hand, for SSA countries that depend heavily on the export of crude oil/gas (e.g., Nigeria and Angola) and diamonds (Botswana, D. R. Congo and, to a lesser extent, South Africa), the picture is quite different. Countries most dependent on the export of crude oil and tourism have been hit the hardest by the pandemic. UNECA estimated that Nigeria's pandemic-related losses would amount to USD 19 billion and that the crisis would also hit certain African sectors hard in the short term, including the automotive industry (-44%), airlines (-42%), and energy and basic materials industries (-13%) (UNECA, 2020). However, the latest UNECA report on East African Trade attests to early and strong recovery in the subregion, stating: "Aggregate exports from the region declined sharply in April 2020 but picked up again in the ensuing months. By the third quarter, most of the EAC Partner States' exports surpassed their 2019 levels" (UNECA, 2021, p. ix)

However, SSA's industrial development faces far stronger and longer-term structural impediments than the coronavirus.

3. Economic vulnerability

The foregoing discussion has emphasised the temporary nature of the pandemic's impact on industrial development and trade globally and for Africa. This is particularly demonstrated by a strong commodities boom and record-breaking rise in global trade in goods in the first quarter of 2021 mentioned above. However, this is far from 'good news' for Africa's industrial development if long-term structural impediments are allowed to persist in a post-pandemic world.

While successive waves of infections may yet cause further acute damage to SSA's economies, pandemics are nevertheless by nature transient. And the severity of their impact is directly linked to the level of pre-existing vulnerability embedded in the region's industrial infrastructure.

African economies remain among the most vulnerable globally, traversing a difficult, uphill transition path from an agrarian base to an industrial one within a non-conducive, interventionist geopolitical and economic world order. Whether by design or not, intricate global value chains – long-established by often exploitative multinational corporations (MNCs) and backed up today by their countries of origin's multilateral and bilateral agencies as well as their coercive/military forces – encourage trade and investment in SSA primary commodities such as minerals and precious stones, crude oil and gas, coffee, uranium, tobacco, and cocoa rather than in locally manufactured goods.

This trend has emanated from centuries of unequal trade with Europe, the Americas and Asia (see Box 1 for a brief intro), which seek to open African (and other) markets for their value-added goods in exchange for minerals, labour, and agricultural commodities with minimal local processing content.
Detrimental terms of trade in primary goods in exchange for the importation of secondary goods over a prolonged period of time have hindered SSA's ability to invest in industry due to the simple fact that value-added goods are more expensive than primary goods, and thus

it is not possible for primary goods exporters to accumulate the requisite level of capital for reinvestment in local value addition and value chain development, as has been the case also in other regions, such as the Middle East and South Asia.

Box 1: Corporations as Pioneers of Colonialism

From the mid-sixteenth through the seventeenth century, there was an explosion in the number of joint-stock companies, particularly in the English Atlantic: the Guinea Company (1618) and later the Royal African Company (1672) in West Africa; the Somers Island (Bermuda) Company (1615) and the Providence Island Company (1630) in the https://www.encyclopedia.com/places/latin-america-and-caribbean/caribbean-political-geography/west-indies" West Indies; and the Newfoundland Company (1610), the "https://www.encyclopedia.com/history/united-states-and-canada/us-history/virginia-company" Virginia Company (1606), and the Plymouth (1606) and later https://www.encyclopedia.com/history/united-states-and-canada/us-history/massachusetts-bay-company Massachusetts Bay Company (1629) in https://www.encyclopedia.com/places/oceans-continents-and-polar-regions/oceans-and-continents/north-america North America. A good number of these companies lasted only decades, but they laid the foundations for the English slave trade, Atlantic commerce, and "foreign plantations" in the Americas.

Source: https://www.encyclopedia.com/history/encyclopedias-almanacs-transcripts-and-maps/colonization-and-companies"https://www.encyclopedia.com/history/encyclopedias-almanacs-transcripts-and-maps/colonization-and-companies

Consequently, agriculture remains the predominant sector in terms of employment and household incomes in SSA[9] while primary goods exports are the main source of government income and foreign exchange, and Africa's existing trade and transportation infrastructure today makes it 'cheaper' and faster for the region's countries to trade with or through non-African countries rather than with many of their neighbours.[10]

It has also resulted in overt dependence on imports of non-African production tools, inputs, intermediate goods, technologies and innovation, much in line with other predominantly agrarian economies of the world. As such, Africa's record of industrialisation over the past half a century has been one of deindustrialisation, often with MNCs at the helm, as will be outlined below.

4. Structural challenges for Africa: Multi-National Corporations as a deindustrialising factor

The global pandemic may temporarily run mayhem with the livelihood of a large section of the population due in large part to social distancing imperatives, which can be adapted relatively quickly with soft cultural adjustments in terms of social contact and gatherings. And it can be vaccinated against.

[9] According to the ILO, employment in agriculture as a percentage of total employment in SSA remained at 52% in 2020, representing a 10% fall over three decades since 1991. See ILO: https://data.worldbank.org/indicator/SL.AGR.EMPL.ZS?locations=ZG

[10] E.g., "When I import raw materials like leather from Hamburg in Germany to Lagos in Nigeria, I pay 850 euros [$986] for a 40-foot container. But the same container transporting our products from Lagos to Tema Port in Ghana costs 1,350 euros [$1566]." https://www.un.org/africarenewal/magazine/august-november-2018/infrastructure-key-intra-african-trade

But the debilitating impact of structural challenges to countries on the African continent has a much longer history which will remain long after the COVID-19 pandemic has gone. A case in point is the structural inequality often created by MNCs on African livelihoods and the global ecosystem and is likely to continue for decades unless their threat is confronted head-on. With a hard jab.

Conglomerates and corporations that had been the main drivers behind European colonial projects from the 17th century onwards[11] became even more prominent in the 20th century as they grew into multinational corporations once Europe was decimated by war and their centre of economic gravity shifted to North America. Often hailed as 'enterprising entrepreneurs' or 'champions of free trade' or 'agents of technology transfer', and usually in an overt or covert public-private partnership with various states and their military forces, corporations have a long history in global resource extortion and deindustrialisation[12], surplus extraction, and market penetration and monopolisation in predominantly agrarian economies.

This has been done usually at the direct expense of a majority of local traders and industries, driving them out of their traditional modes of production and trade and into the status of 'service providers' who might be lucky enough to link at some lower point to 'global value chains'[13]. To a lesser (slower) extent, this trend has also held true for industrialised countries that have seen a steady shift toward services, as manufacturing small and medium enterprises (SMEs) have gradually given way to privately owned corporate monopolies whose reach has extended into public utilities (natural monopolies) in many countries, much as was the case with the privatisation drive forced on heavily-indebted African countries in the 1980s and the 1990s by the Bretton Woods Institutions and various think tanks with equally poor results and similarly 'trickling-up', destabilising, and impoverishing effect.

Perhaps the most poignantly debilitating impact of MNCs is in their astounding level of licit and illicit wealth transfer from developing countries – SSA countries included – to offshore and onshore tax havens mostly established in European countries or their (ex-)colonies[14]. In effect, MNC practices have ensured that Africa cannot accumulate adequate indigenous capital for reinvestment and independent industrial development.

According to Global Financial Integrity reports, for the period 1980-2012, "developing countries lost USD 16.3 trillion dollars through broad leakages in the balance of payments, trade misinvoicing, and recorded financial transfers" (GFI, 2016, December 5). Figure 3 (below), shared from the organisation's 2016 report, provides a graphic representation of

[11] See for example https://www.encyclopedia.com/history/encyclopedias-almanacs-transcripts-and-maps/colonization-and-companies
[12] The deliberate destruction of India's textile industry by Britain's East India Company is a classic case in point.
[13] It should also be noted that this statement is in no way intended to support the implied, pessimistic conclusions of the Dependency or World Systems schools of thought. On the contrary, the heterogeneous and non-linear experiences of Asian and Latin American 'Tigers' or Emerging Economies and a rapidly changing world economic order today clearly dispel such deterministic, ahistorical approaches.
[14] See, e.g. The Guardian's reports on the Panama Papers: https://www.theguardian.com/world/panama-papers

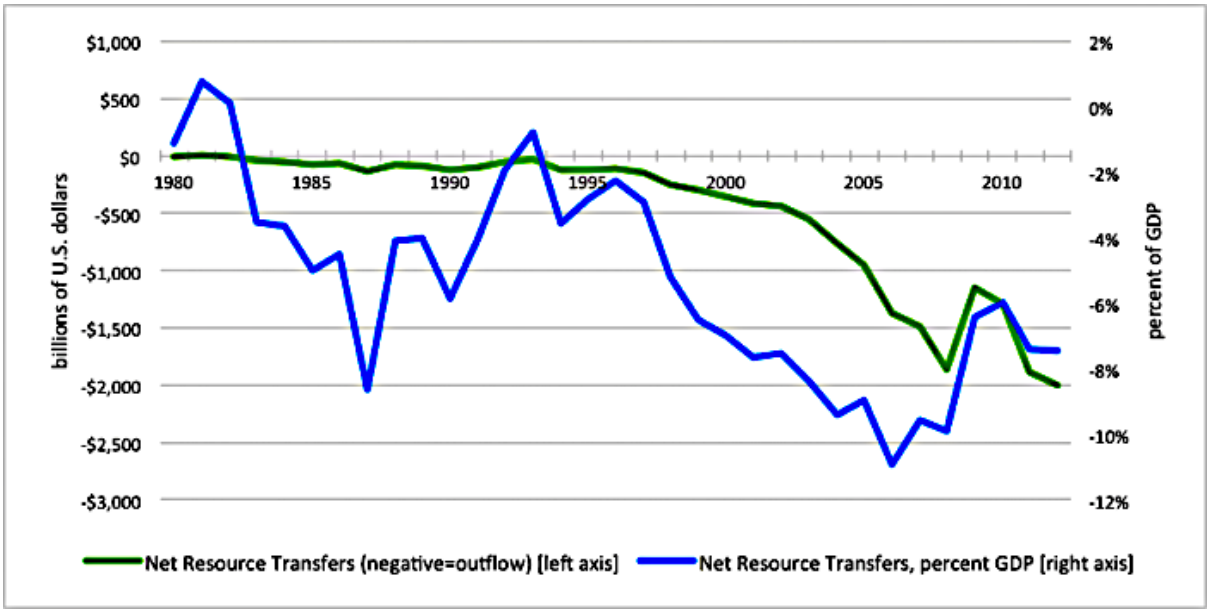
this accelerating trend since 1980 (GFI, 2016). The report does not mince its words on the main culprit in this trend:

> *"At the center of this most unfortunate development sit the offshore centers facilitating criminal, corrupt, and commercially tax evading financial flows, having their most damaging impact on the poor of the world." (GFI, 2016, p. iv).*

Furthermore, the report identifies Sub-Saharan Africa as having the fastest growth rate (at 20% a year) of assets held in offshore tax havens over the period 2005-2011 and declares:

> *"There is perhaps no greater driver of inequality within developing countries than the combination of illicit financial flows and offshore tax havens" (GFI, 2016, p. iv).*[15]

Figure 3: Net Resource Transfers from Developing Countries to High-Income Countries (1980-2012). Total: USD 16.3 trillion.



Source: Global Financial Integrity; https://gfintegrity.org/

MNC practices, at times effected using bribes and 'divide-and-rule' tactics, had already been highlighted in the African Union and UN Economic Commission for Africa's (ECA) 2015 report on Illicit Financial Flows:

> *"Despite the challenges of information gathering about illicit activities, the information available to us has convinced our Panel that large commercial corporations are by far the biggest culprits of illicit outflows, followed by organized crime. We are also convinced that corrupt practices in Africa are facilitating these outflows, apart from and in addition to the related problem of weak governance capacity." (AU/ECA, 2015, p.3).*

[15] http://www.gfintegrity.org/wp-content/uploads/2016/12/Financial_Flows-final.pdf

The same report refers to 65% of all illicit financial flows (IFFs) as being linked to "commercial activities" (i.e., MNCs), with the remainder being related to criminal (30%) and corrupt (5%) activities. The report also highlights several case studies, including a Danish government-funded study covering five of its priority countries (Ghana, Kenya, Mozambique, Tanzania, and Uganda), showing that "Kenya's tax loss from trade misinvoicing by multinational corporations and other parties could be as high as 8.3 per cent of government revenue" (AU/ECA, 2015, p.17).

Estimating IFFs (rather conservatively) at around USD 50-80 billion a year in 2019, the African Union makes a link between the predominance of such flows and the activities of extractive industry MNCs:

> *"From the evidence in the recent past, East and Central Africa have the lowest levels of IFFs, while the southern and West African region have the highest amounts of IFFs. Oil-exporting countries have a prominent share of IFFs, while higher levels of IFFs are linked to the size of economic activity in countries and regions. There is even a 'top ten' of countries in Africa, all of which are implicated in approximately 75% of total IFFs. Dominant on this list are several resource-rich countries" (African Union, 2019, p.2.*[16]

The above mentioned 2015 AU/ECA report refers to estimated annual illicit flows ranging from USD 50 billion to USD 148 billion (which in the 21st century alone so far would amount to a range of between USD 1 trillion and almost USD 3 trillion) and concludes:

> *"These cross-border transfers of illicit money have a considerable detrimental impact on Africa's development and governance, especially in the transnational context. Among other things, illicit financial flows stifle Africa's socioeconomic progress by draining scarce foreign exchange resources, reducing government tax revenues, deepening corruption, aggravating foreign debt problems and impeding private sector development" (AU/ECA, 2015, p. 2).*

One of the starkest examples of exploitative practices by some MNCs in SSA is in Nigeria's petroleum sector[17], which has consistently accounted for over 90% of the country's export earnings but has failed to help diversify its economy despite several decades of foreign investment and trade in the sector since the late 1950s. In fact, much of the conflict and poverty in the oil-rich Niger Delta region has been directly attributed to the industry's repeated oil spills and resultant environmental degradation for decades (Babatunde, 2020; April).

In terms of the opportunity cost to the continent, the above-mentioned African Union report states:
"Some authors have shown that Africa's capital stock would have increased by over 60% if funds leaving Africa illegally had remained in the continent, while GDP per capita would have

[16] Source: https://au.int/sites/default/files/documents/37326-doc-k-15353_au_advocacy_brief_brochure_devv3.pdf
[17] See e.g. a recent report on a USD 1.3 billion corruption scandal involving Shell and Eni oil conglomerates and a former Nigerian oil minister: http://north-africa.com/2020/01/africa-corruption-in-nigerias-oil-sector/

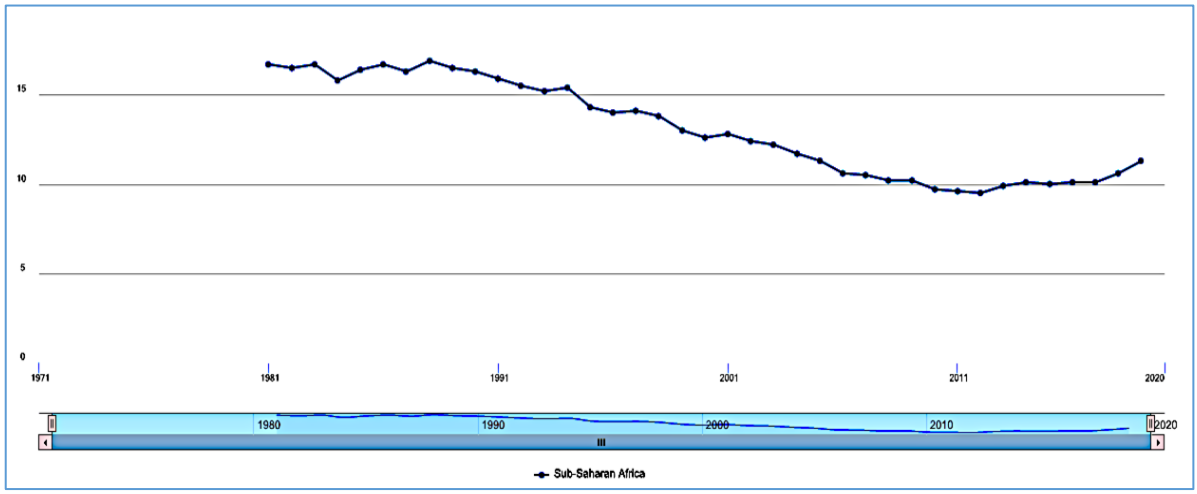
increased by 15% (Boyce and Ndikumana, 2012). The ratio of domestic investment to GDP in Africa would have increased from 19% to 30% if the capital stock leaving Africa remained available for investment within the continent (African Economic Outlook, 2012)." (African Union, 2019, p.20[18]).

The opportunity cost of such capital flight to the continent's manufacturing performance is reflected in around four decades of deindustrialisation, as described below.

5. Characteristics of four decades of deindustrialisation

Manufacturing Value Added (MVA) as a percentage of GDP for the SSA region has been almost constantly falling over the past four decades, save for a slight improvement since 2012, as seen in Figure 4.

Figure 4: Sub Saharan Africa Manufacturing Value Added as a Percentage of GDP 1980-2020.



Source: World Bank Development Indicators, generated on November 23, 2020; https://databank.worldbank.org

Measured as industry's share of GDP against services and agriculture, Africa has been deindustrialising for decades.

Disaggregated by subregion, as shown in Figure 5 below, covering the entire continent for the period since 1990, Southern and Western Africa have seen the largest falls in their MVA shares of GDP (by around 9 and 7 percentage points, respectively) (UNIDO, 2020), while Middle Africa has uniquely seen a slight net growth (at around 1 percentage point) over the period[19]. Southern and Western Africa have also been identified in the above-mentioned African Union report as resource-rich regions with the highest levels of illicit financial flows out of the continent (as detailed under Section 4 above). Other things being equal, the

[18] African Union, 2019: "Domestic Resource Mobilisation: Fighting Against Corruption and Illicit Financial Flows", https://au.int/sites/default/files/documents/37326-doc-k-15353_au_illicit_financial_flows_devv10_electronic.pdf

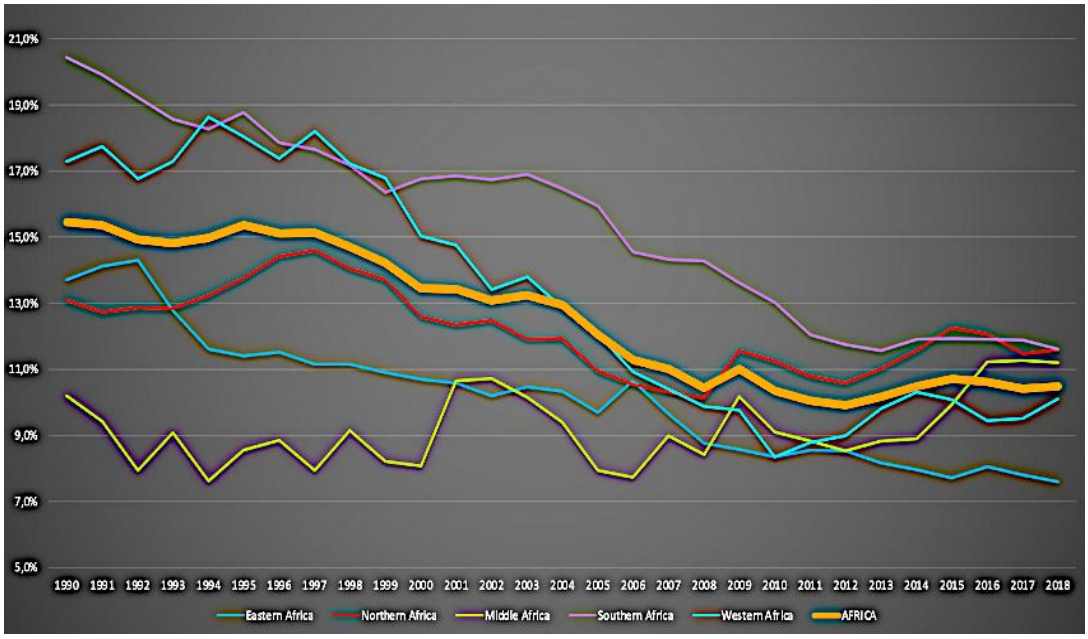
[19] Largely due to a more recent oil boom in Angola taking off around 2005.

debilitating effect of MNCs on their industrial development, therefore, cannot be overstated.

Closer examination of the MVA graphs also reveals the dominant impact of these two subregions' performance on the picture for the continent as a whole, which fairly closely correlates with their trends, while Middle Africa's MVA/GDP trends appear to have fluctuated rather independently of the rest. Furthermore, 2012 marks a positive turning point for the continent as a whole except for in Eastern Africa.

The relative strength in African manufacturing measured as MVA growth per capita in the period since the year 2012 (as compared to the previous two decades) is most likely due to a significant and steady shift in Africa's trade partnerships in favour of South-South trade and foreign direct investment in the continent.

Figure 5: Relative decline in industrialisation in MVA/GDP by region in Africa (current USD).



Source: UNIDO, 2020; https://stat.unido.org/database/MVA%202021,%20Manufacturing;jsessionid=0A203E05AE665D955B0EABF5A293F84C

This trend has gradually overtaken North-South investments in Africa since the turn of the century with a focus on infrastructure development, banking services, digitalisation, and retail as against extractive industries alone and with a significant role by investors from China, India, Kenya, and South Africa.

Despite these positive trends, foreign direct investments (FDI) in Africa have averaged at 2.8% of the global total since the 1970s and stood at only 3.1% in the 2010s, while developing economies and Asia have averaged over 33% and 26% of the total respectively over the period 1970-2019, as outlined in Table 2 (below).

Table 2: Foreign direct investment: Inward flows and stock, annual (USD millions current prices).

	1970s			1980s			1990s			2000s			2010s			1970-2019		
	Average Annual FDI for period (mil. $)	Share of Global FDI	Share of Total FDI for Africa	Average Annual FDI for period (mil. $)	Share of Global FDI	Share of Total FDI for Africa	Average Annual FDI for period (mil. $)	Share of Global FDI	Share of Total FDI for Africa	Average Annual FDI for period (mil. $)	Share of Global FDI	Share of Total FDI for Africa	Average Annual FDI for period (mil. $)	Share of Global FDI	Share of Total FDI for Africa	Average Annual FDI for period (mil. $)	Share of Global FDI	Share of Total FDI for Africa
World	23,800	100.0%		92,931	100.0%		397,497	100.0%		1,093,156	100.0%		1,612,612	100.0%		631,838	100.0%	
Africa	1,124	4.7%	100.0%	2,202	2.4%	100.0%	6,636	1.7%	100.0%	30,986	2.8%	100.0%	49,457	3.1%	100.0%	17,749	2.8%	100.0%
Northern Africa	184	0.8%	16.4%	895	1.0%	40.6%	2,014	0.5%	30.3%	12,084	1.1%	39.0%	13,209	0.8%	26.7%	5,569	0.9%	31.4%
Sub-Saharan Africa	940	4.0%	83.6%	1,307	1.4%	59.4%	4,622	1.2%	69.7%	18,903	1.7%	61.0%	36,248	2.2%	73.3%	12,179	1.9%	68.6%
Eastern Africa	126	0.5%	11.2%	151	0.2%	6.8%	749	0.2%	11.3%	3,556	0.3%	11.5%	12,926	0.8%	26.1%	3,435	0.5%	19.4%
Middle Africa	174	0.7%	15.5%	337	0.4%	15.3%	704	0.2%	10.6%	3,909	0.4%	12.6%	4,769	0.3%	9.6%	1,943	0.3%	10.9%
Southern Africa	120	0.5%	10.7%	114	0.1%	5.2%	1,041	0.3%	15.7%	4,939	0.5%	15.9%	5,179	0.3%	10.5%	2,236	0.4%	12.6%
Western Africa	520	2.2%	46.3%	705	0.8%	32.0%	2,127	0.5%	32.1%	6,499	0.6%	21.0%	13,374	0.8%	27.0%	4,564	0.7%	25.7%
Developing economies	5,941	25.0%		18,892	20.3%		125,450	31.6%		345,920	31.6%		653,367	40.5%		209,553	33.2%	
Northern America	6,354	26.7%		37,463	40.3%		99,692	25.1%		215,732	19.7%		318,620	19.8%		133,038	21.1%	
Latin America & Carib.	2,654	11.2%		6,363	6.8%		37,631	9.5%		81,568	7.5%		167,075	10.4%		57,952	9.2%	
Asia	2,094	8.8%		12,077	13.0%		75,525	19.0%		247,540	22.6%		493,656	30.6%		162,961	25.8%	
Europe	10,259	43.1%		30,518	32.8%		169,808	42.7%		494,993	45.3%		529,742	32.8%		242,421	38.4%	

Source: UNCTAD Trade Statistics https://unctadstat.unctad.org

Given the fact that Africa accounts for 17% of the global population, the continent's 50-year long deindustrialisation and comparatively low FDI trends clearly demonstrate that external sources alone are highly unlikely to meet the financing needs of Africa's industrial development. On the contrary, Africa's FDI balance sheet is strongly negative with enormous capital flight (much of which is directly linked to MNCs), a deteriorating share of manufacturing, rising environmental degradation, and conflict in some areas, as described above. Put differently: Not only has FDI failed to support Africa's industrialisation, but it has also led to the loss of local capital needed for reinvestments and turned the continent into a net exporter of capital to other regions.

6. Lessons from old and newly industrialised countries

Having identified that MNCs are central players in wealth extraction in many African countries with poor industrialisation results, it is also important to highlight and acknowledge their positive potential for industrial development, as has been the case in a number of old and newly industrialising countries. Accelerated industrial recovery and growth in the post-pandemic context could be aided by the know-how and technology that MNCs may be able to bring to the table for local decision-makers, investors, and entrepreneurs.

However, and contrary to the dominant discourse by various agencies and think tanks, the success of newly industrialised countries in leveraging this particular potential has not been achieved merely through technical refinements such as technology transfer, productivity improvements, management practices, free trade, special economic zones, laissez faireism, tax incentives, private property rights, or similar policy prescriptions however useful some of them may be.[20]
Rather, their success has been primarily due to their treatment of foreign MNCs in the same manner that they would treat their geopolitical rivals, namely, in identifying and protecting

[20] See for example the IMF, 2019, on "Industrial Policy": https://www.imf.org/-/media/Files/Publications/WP/2019/WPIEA2019074.ashx. The IMF has finally admitted the "Leading hand of the State" as a key factor in planning but remains analytically oblivious to any mention of geopolitical imperatives, focusing solely on internal challenges – an approach that effectively favours big powers.

their national interests and security concerns, maintaining local ownership, establishing red lines, and collaborating in areas of shared interest while being ready to use their coercive/punitive tools in defence of their rights and against MNC infringements. This is highlighted by the quote from the UNCTAD 2019 World Investment Report in Box 2.

Box 2: Recent approaches to FDI inflows

"New national investment policy measures show a more critical stance towards foreign investment. In 2018, some 55 economies introduced at least 112 measures affecting foreign investment. More than one third of these measures introduced new restrictions or regulations – the highest number for two decades. They mainly reflected national security concerns about foreign ownership of critical infrastructure, core technologies and other sensitive business assets. Furthermore, at least 22 large M&A deals were withdrawn or blocked for regulatory or political reasons – twice as many as in 2017."

Source: UNCTAD, 2019 World Investment Report

Beyond these ownership and security concerns, the experience and policies of newly industrialising countries with corporations have been diverse and heterogeneous. At the same time, the presentation of success stories and their factors of success as reflected in the policy prescriptions of various development agencies have been less than fully in line with reality and have proven insufficient for countries that have prioritised such policy impositions in Africa (Kirkpatrick, et al., 2019; Power, 2019).

Put differently: One would have to look very hard to find an example of an industrialised country anywhere in the world that has followed Washington Consensus' policy prescriptions in its transition from an agrarian economy to a technologically advanced industrial one with success. In fact, a majority of (if not all) high-income, industrialised nations today have followed interventionist, anti-market, state-led paths that sought to create comparative advantages, often through surplus-extracting colonialism and war in close collaboration with (and often led by) mega-corporations. This was usually also accompanied by the mass emigration of European 'surplus labour' out to other regions of the world during the entire period of the Industrial Revolution, which fully coincided with European colonial projects in the 1700s and beyond – a 'luxury' that is not available to other countries today.

From this perspective, industrial development and other economic policy prescriptions espousing a 'free market' approach designed by Western institutions and aimed at 'guiding' other countries could be fairly described as irrelevant or even counterintuitive due to their contextual and experiential inappropriateness.

A common feature of the most successful newly industrialising countries in the world (such as China, India, Iran, Malaysia, Mexico, Thailand, Turkey, and Vietnam) in recent decades is in the fact that they have had relatively few interactions with international financial or 'aid' entities in their national planning processes or their policy space, choosing instead to handpick specific elements (e.g. land reform, development banks, investments in power plants and other infrastructure, special economic zones, industrial parks, value chain development action plans for specific sectors, technology, acquisition strategies, vocational training, and selective, time-bound tax incentives) that suit their contextual needs.

By a combination of maintaining control over the management and ownership of their means of production – particularly vis-a-vis MNCs – and keeping the "free market" or "Washington Consensus" gurus[21] at bay, they were not only successful at industrialisation, but they were also the only countries that met their 50% target in poverty reduction set out in the Millennium Development Goals as outlined in Figure 6.

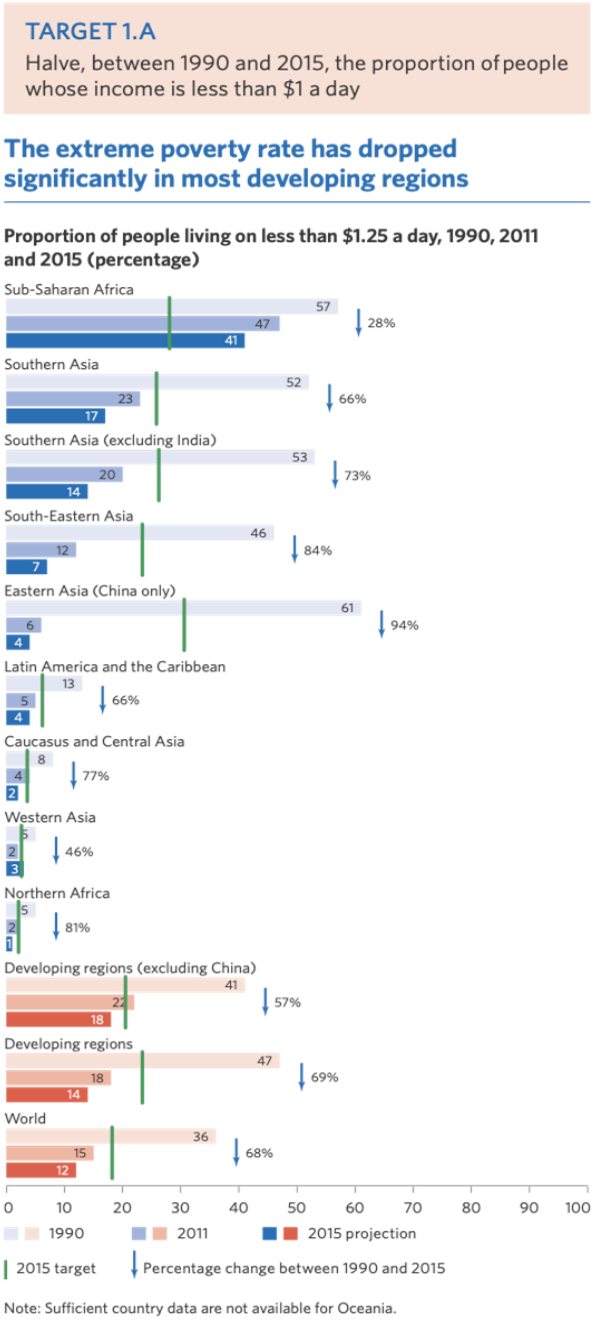
As the UN chart shows, the most successful developing regions in the world were the ones furthest away from the influence of the UN and other multilateral and bilateral aid agencies, Bretton Woods Institutions, and international NGOs.

These include Eastern Asia (94% poverty reduction rate); South-Eastern Asia (84%), Northern Africa (81%), Caucasus and Central Asia (77%), and Southern Asia excluding India (73%).

In contrast, the region with the highest concentration of aid agencies and NGOs for decades, namely SSA, was also the least successful in poverty reduction (28%), together with Western Asia (46%) with the latter having been mired in long-term "resource curse" conflicts despite being among the richest regions in the world in terms of per capita export earnings. It is important to also note that both of these regions have also been deindustrialising for some decades.

The most striking feature of the large group of countries with high industrial development and poverty reduction rates is its political, social, and economic heterogeneity. Hong Kong could be argued to have benefitted from an authoritarian British colonial regime that safeguarded private property rights and has continued to flourish since it was handed back to China, which itself has

Figure 6: UN MDG Report 2015 – Halving Poverty.



Source: United Nations 2015 MDG Report: https://www.un.org/millenniumgoals/2015_MDG_Report

[21] See for example the case of Malaysia's Prime Minister famously railing against the IMF during the 1997 Asian Financial Crisis, from which Malaysia was also the first country to recover with strength: https://www.wsj.com/articles/SB883586713304528000

emerged strongly through pragmatic central planning and with less regard for private ownership of the means of production.

Chinese Taipei and South Korea, on the other hand, could be argued to have flourished under US tutelage with enormous levels of geopolitically driven foreign investment, starting with land reform under military rule and transitioning to democracy over time. Malaysia and Thailand also show contrasting paths to industrial development, with Malaysia being a foreign protectorate with a multicultural population for much of its modern history before transitioning to an independent democracy, while Thailand was never colonised and retains a more homogenous culture that also transitioned to democracy.

This heterogeneity attests to the fact that successful industrialisation and poverty reduction have no specific political or policy characteristics other than what is made imperative by the local and regional geographic, political, and cultural contexts. It is, therefore, logical, if this line of argument is continued, to also infer that externally imposed policies and conditionalities are likely to do more harm than good.

It is clear that the policies imposed on and/or adopted by Sub-Saharan Africa since the early 1980s coupled with the foreign aid agencies' expensive social services, human rights, and human development agendas (comprising over 90% of all 'aid' for Africa) did not only fail to alleviate poverty but have also indirectly helped to deindustrialise the region by ensuring that the most basic elements needed for industrialisation (such as savings for long-term local investments) and indigenous wealth generation (such as the construction of industrial production units) were largely removed from the list of funding priorities for donors. There are signs that this is changing on a rhetorical level (as Goal 9 of the SDGs attests to being focused on infrastructure and industrialisation), but FDI (as discussed above) and/or aid for Africa's industrial and infrastructure development remain far below the requisite levels. In relation to aid, this is demonstrated by the OECD/DAC's 2019 report on donor aid to Africa (OECD/DAC, 2019). Of all donor aid in 2017, including bilateral and multilateral assistance, the 'industry, mines and construction' sector's share ranged between 1.7 and 4.1% of the total, while social sector support's share ranged between 37 to 49% across various types of aid modality.

7. Geopolitics, threats and control over essential factors of production

The global pandemic does not only highlight the need for indigenous production and know-how for human security in every country, it also presents pandemics as another potential external threat – and one that can exacerbate geopolitical rivalries and trade disputes – to Africa's sustainable industrial development.

More soberingly, and in the final analysis, a technologically advanced, industrialised, and competitive Africa is likely to be viewed as a threat to the dominant economic and political position of existing powers. The currently growing Western antagonism toward China, the intense sanctions regimes (re-)exacted against energy resource-rich countries such as Venezuela and Iran during a global pandemic, which should be a time of global collaboration, and the halting of exports of vaccines by some countries in 2021, all impact

the ability of the affected countries to industrialise; as well as have a knock-on impact for other countries.

In addition to material inputs, a key determinant of successful long-term industrialisation is, therefore, political in nature. From this perspective, the critical role of the African Union and the newly operationalised (January 2021) African Continental Free Trade Area (AfCFTA) in building and strengthening Africa's political and industrial power should be apparent. The Economic Commission for Africa estimates that AfCFTA could increase intra-African trade by 52% within a year.[22]

The African Union can also play a central role in enhancing the terms of trade for its member states. The dynamism and evolving nature of the world economic order since the turn of the century have led some countries to tear up old trade agreements and alliances in order to establish new ones. In the same manner, and given the region's accelerating capital flight and slow economic performance overall for the past half a century, SSA countries should not feel beholden to the limitations of existing trade agreements and regimes with the rest of the world and treat all such bilateral and multilateral 'obligations' as fully and justifiably negotiable. Indeed, such a step in revising or revisiting all existing trade agreements may be long overdue, and the recently launched AfCFTA provides the opportunity for their comprehensive review.

One area where these issues can be highlighted relates to energy production and its relationship with industrial development in Africa. The next section of the paper discusses this in more detail.

8. Energy poverty and the dilemma of CO_2 emissions vs. industrialisation

What good is a highly sophisticated COVID-19 hospital ward with the latest high-tech equipment, ventilators, diagnostic tools, and plentiful supplies of vaccines if there is no reliable power source to run its machines and refrigerators?

A dearth of access to electricity is commonly perceived as a consequence of a country's relative poverty[23], whereas the reverse is perhaps closer to the truth: Poverty is caused by a lack of access to abundant and affordable electricity. Africa's energy poverty is the main cause of its economic poverty.

This seeming contradiction is exemplified by the record of Nigeria, whose citizens and manufacturers remain highly dependent on imported diesel for the operation of imported electricity generators due to the lack of a functional national power grid.[24] The lack of affordable electric power undermines the country's production capacity as well as its

[22] "The new agreement that comes into effect today will take some time to be fully operational but has the potential to be transformative for Africa, breaking our dependence on a neo-colonial pattern of trade that characterised trade" (South Africa's Trade and Industry Minister Ebrahim Patel)". Source: https://www.vanguardngr.com/2021/01/south-africa-urges-manufacturers-farmers-to-expand-exports-through-afcfta/

[23] See for example G. Nzobadila, African Energy Commission, "Energy Poverty in Africa".

[24] See for example https://guardian.ng/opinion/incessant-collapse-of-national-power-grid/

balance of payments, causing major opportunity costs in terms of productivity and investments.

Africa's energy output and carbon emissions are negligible as compared to the rest of the world. Measured in terms of millions of tonnes of oil equivalent (Mtoe), the International Energy Agency (IEA) describes the global energy production and consumption levels in 2018 as follows:

> *"World energy production was 14,421 Mtoe in 2018 – a 3.2% increase compared to 2017. It was mostly driven by fossil fuels: natural gas (+5.0%), coal (+3.3%) and oil (+2.0%), increasing together by more than 370 Mtoe in 2018. All renewables and nuclear also increased, by 60 Mtoe and 19 Mtoe respectively. Fossil fuels ultimately accounted for more than 81% of production in 2018, as was the case in 2017" (International Energy Agency, 2020, p. 4[25]).*

It is important to note that the increase in global energy production alone (449 Mtoe) represented close to 40% of Africa's total energy output, which stood at 1,169 Mtoe in 2018 (International Energy Agency, 2020, p. 2). Furthermore, and despite all the Climate Change warnings, fossil fuels continue to dominate energy production globally, with coal remaining as the leading global fuel for electricity generation. The increase in renewable energy production in 2018 as compared to a year earlier amounted to 60 Mtoe, accounting for a mere 13% of new energy production or 0.4% of total energy use.

In 2019, global CO_2 emissions stood at 4.93 tonnes on a per capita basis. Only 2 African countries (South Africa with 8.52 tonnes and Libya with 7.92 tonnes) exceeded this average while the EU's average stood at 6.47 tonnes, China's at 8.12 tonnes, and USA's at 15.52 tonnes. The great majority of SSA countries produced between 0.1% and 10% of the global average in CO_2 emissions (i.e. ranging from 0.03 to 0.5 tonnes per capita per year).[26]

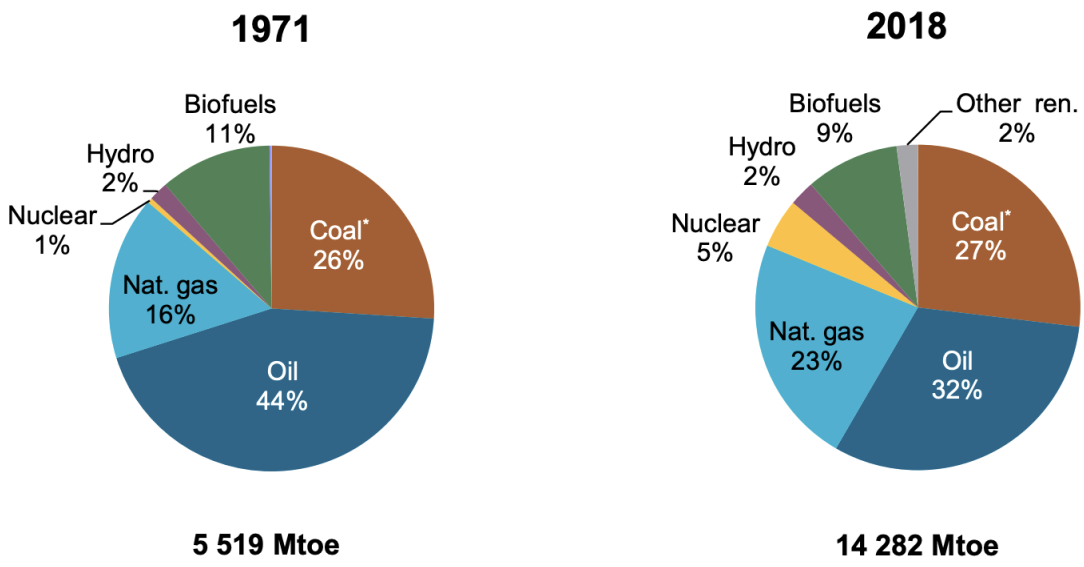
On average, one single US citizen emits as much CO_2 into the atmosphere as 517 citizens of the Democratic Republic of Congo. Canada, with a population of 38 million people, currently emits around 580 million metric tonnes of CO_2 into the Earth's atmosphere every year from fossil fuel and cement production alone, up from 495 in 1995[27] while Africa's total CO_2 emission in 2008 was estimated at 311 million tonnes for a population of over 1 billion.[28]

Within the above context, it is rather surprising to note the extent to which the Climate Change debate has skewed the current discourse on Africa's current and future energy production. There appears to be an unrealistic demand, particularly among development/aid agencies, for renewable sources to take centre stage for Africa when no other country or region in the world is anywhere near such a target. In fact, the share of global fossil fuels versus renewables in energy production has hardly changed over the past

[25] International Energy Agency 2020 Statistics Report, World Energy Balances Overview.
[26] European Commission's Emissions Database for Global Atmospheric Research, https://edgar.jrc.ec.europa.eu/
[27] https://www.statista.com/statistics/209619/canadian-co2-emissions/
[28] https://cdiac.ess-dive.lbl.gov/trends/emis/tre_afr.html

five decades while overall energy production has increased 2.6 times over the period, as IEA's comparative graphs for 1971 and 2018 demonstrate (Figure 7 below):

Figure 7: Total Global Energy Supply by Fuel in 1971 & 2018.



Source: IEA World Energy Balances, 2020.

IEA figures indicate that the shares of renewables and coal (which includes peat and shale oil in Figure 7 above) in total global energy production have remained stagnant at 13% and 26-27%, respectively over the period while the shares of natural gas (up by 7%) and nuclear energy (4% increase) have increased at the expense of oil with concomitant greenhouse gas benefits.

The share of renewable biofuels (such as corn-based bioethanol and fuelwood) has fallen by 2%, as they have proven more harmful than fossil fuels both environmentally and health-wise[29], and can threaten food security[30].

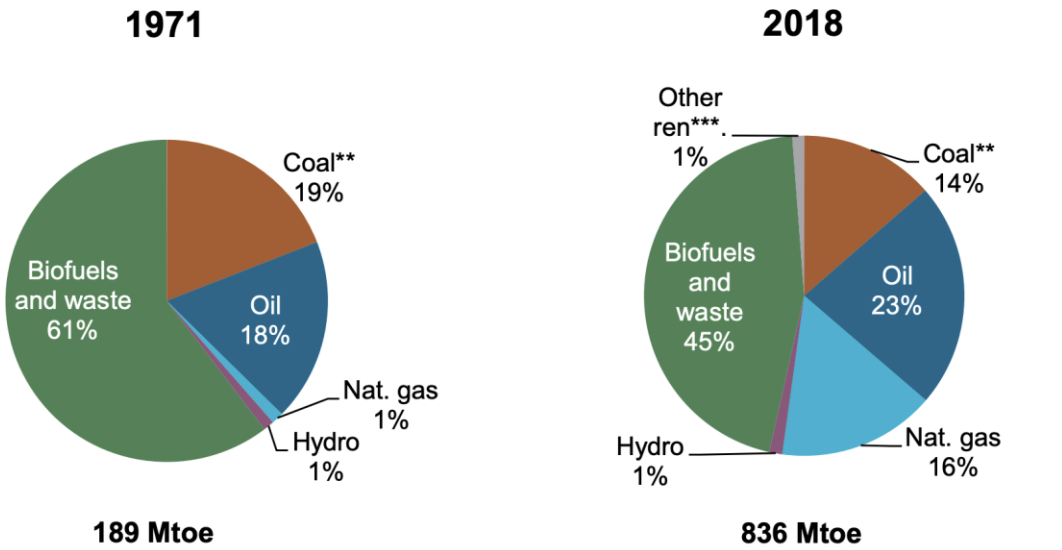
It is, therefore, ironic to note that this renewable source of energy, which in its fuelwood form is also the cheapest and most common source of energy in Africa, is also the least 'green' and most harmful among major energy sources.

Between 1971 and 2018 (see Figure 8 below), the share of biofuels in Africa's total energy supply fell by 16%, though its total volume rose from 115 Mtoe in 1971 to 376 Mtoe in 2018 – a rise of over 320%, which is directly proportional to the continent's population increase (340%) over the same period.

[29] See for example https://www.theguardian.com/environment/2017/dec/31/biomass-burning-misguided-say-climate-experts
[30] UN Economic Commission for Africa, 2016, Policy Brief 9, "Bio-Energy for Africa: Opportunities, Constraints and Trade-Offs". See also: International Economics, December 2019 "The impact of biofuels on food security".

Figure 8: Total African Energy Supply by Fuel in 1971 & 2018.

* Excluding electricity trade.



** In this graph, peat and oil shale are aggregated with coal

Source: IEA World Energy Balances, 2020.

The IEA report cited above describes recent (though modest and not necessarily sustainable) reductions in CO_2 emissions by OECD countries as a consequence of a) improved efficiencies in industry (cleaner, more efficient production), b) greater use of natural gas, solar, wind, and nuclear energy at the expense of oil and coal, and c) milder weather (lower demand for electricity generation) (International Energy Agency, 2020). One can also safely propose improved construction and insulation materials together with increased use of electric and hybrid engines in transportation as other positive factors. In other words, a large share of recent reductions in OECD's CO_2 emissions has come from the use of more advanced technologies associated with higher stages of industrialisation.

This suggests that, given time, science and technology hold the key to industry's polluting practices. Other things being equal, the solution to industrial pollution is embedded in more advanced technologies and efficiencies that evolve in tandem with greater mechanisation, digitalisation, automation, and artificial intelligence.

Current lessons from 'learning by doing' and trials of various alternative energy approaches indicate that some of the most effective actions for reducing CO_2 emissions may be reforestation (likely the most effective and cheapest remedy of all (Bastin, et al., 2019)), cleaner and more efficient production, waste reduction and management (including rationalising consumerism), and switching as far as possible away from biofuels, coal, and oil to natural gas, geothermal, hydro, and nuclear energy, etc. In the case of SSA countries, as with most countries, cutting energy and water loss in distribution systems can go a long

way toward cutting current and future emissions and saving scarce resources at the same time[31].

SSA has tremendous potential for leveraging its resources for its own energy production and prosperity. According to the African Natural Resource Centre, and with around 17% of the total global population, Africa is:

> *"home to the world's largest arable landmass; second largest and longest rivers (the Nile and the Congo); and its second largest tropical forest… its fisheries and aquaculture sector alone is estimated at USD 24 billion. In addition, about 30% of all global mineral reserves are found in Africa. The continent's proven oil reserves constitute 8% of the world's stock and those of natural gas amount to 7%. Minerals account for an average of 70% of total African exports and about 28% of gross domestic product." (African Development Bank, 2016).*

Given this natural resource endowment, the continent is well placed to harness technology and scientific advance – if the geopolitical and governance issues can be successfully navigated – to reverse or at least halt the effects of climate change while still industrialising. In fact, such technological advances in the energy field are essential for accelerated industrial development. In the author's opinion, some sources such as solar, geothermal, and hydro are particularly suited for decentralised electricity generation for both domestic and small-scale business and manufacturing while others such as coal, oil, gas, and nuclear (as well as large-scale hydro and geothermal) are essential for accelerated industrial development and can help power whole cities and regions on the scale needed[32].

9. Conclusions and policy recommendations

The global pandemic has not only highlighted the need for indigenous production and know-how for human security in every country, but it also presents pandemics as another potential external threat to sustainable industrial development. In Africa, the COVID-19 pandemic has had an acute impact on market demand and informal micro-enterprises and traders in several countries of the region, but in terms of industrial production and/or development, it is unlikely to have a major negative impact due to a) pre-existing and more serious economic vulnerabilities, and b) its economic diversification effect (see below).

While successive waves of infections may yet cause further acute damage to SSA's economies, pandemics are nevertheless by nature transient. And the severity of their impact is directly linked to the level of pre-existing vulnerability embedded in the region's industrial infrastructure. The greater threat to SSA's industrial development emanates from

[31] The prevalence of regularly inaccessible, expensive, low-quality, and highly privatised infrastructure in USA today should be a warning sign for African countries implementing major infrastructure projects in partnership with or through the private sector. The profit motive does not always encourage the use of high quality, durable materials in immediate construction, or long-term maintenance work. Nor does it include incentives for saving lives and protecting the health of citizens.

[32] For an in-depth review of the utility of various energy sources, see: "Chapter 2: Energy Sources" in Dincer & Abu-Rayesh, 2020, "Energy Sustainability", published by Olive Walter.

longer standing structural inequalities created by inadequate investment and the domination and exploitation of Africa's natural resources by MNCs, which in turn siphon the continent's wealth off to their offshore and onshore tax havens at staggering levels that dwarf the continent's total external debt.

Given the fact that African countries are among the youngest nation-states in the world, it is perhaps of no surprise that their "mobilisation" has come somewhat later than in other regions. However, all the ingredients are in place, and some strong moves have been made in the expected direction already for there to be plenty of optimism for the region's future as a powerhouse.

Key among these are the fledgling regional Free Trade Area (AfCFTA), Electricity Power Pools, and major intra-African transportation infrastructure development efforts, which, despite their challenges, are precisely what would be needed as the next steps to augment already existing Regional Economic Commissions.

The fact that SSA's energy resources are spread all across the region is in itself a potentially unifying force for greater regional integration and the pooling of resources. Moreover, and given the violent, anti-market behaviour of major powers and some oil producers in the Middle East keeping oil prices artificially high, there is no reason why Africa's oil producers should not manage their own oil and gas reserves and set their own prices for Africans alone even if this results in technological and inevitable geopolitical issues in the initial phase.

With so much 'financial terrorism', sanctions, and outright bullying by global powers with their control over global financial transactions, bartering or trading in local currencies (or a single African currency) can also have major economic security and stability benefits.

The single most common hindrance to such large investment needs that one hears about is 'budgetary constraints'. A UNIDO Working Paper based on a survey of African policymakers lists this constraint as the biggest one for the region's governments and manufacturing companies alike (Hartwich & Isaksson, 2020). And the COVID-19 recovery solution that is most commonly applied by African governments to help affected firms boils down to tax relief and debt relief. Companies need to be relieved of their external debts and taxes to be able to function during the crisis. In the same vein, highly indebted countries' governments cannot fulfil their basic industrialisation goals without debt relief.

In fact, given the ever-worsening problem of debt for so many Least Developed Countries, it is suggested that they should simply demand debt forgiveness with immediate effect during the pandemic (and beyond) under the leadership of the African Union. Without such a move, there is little scope for capital accumulation, independent growth, political stability, and industrialisation.

If SSA countries can achieve an adequate level of political alignment and coherence, they may be able to relieve many existing industrialisation bottlenecks in the region through:

- Devising a region-wide energy strategy that leverages all existing energy potentials from wind and solar to fossil fuels, geothermal and nuclear energy
- Formulating a strong technology acquisition and management strategy through pooling of resources
- Establishing a common, region-wide policy front vis-a-vis MNCs with standardised conditionalities and oversight, their management, taxation, technology and know-how transfer, waste management, environmental practices, etc.
- Securing local food supplies through effective land reform/redistribution favouring small-medium farmers in order to halt food imports from outside the region and to help accumulate savings and surplus capital for investment
- Securing water access and distribution for the entire population and for industrial and agricultural production
- Diversifying the region's economy through intra-African trade, import-substitution, and use of shorter value chains in the post-COVID-19 era
- Strengthening regional institutions that aim to promote regional solidarity
- Expanding regional transportation infrastructure (already underway)
- Favouring intra-regional trade with discrimination against imports (European Union-style), focussing on the consumption of local and regional products (per the AfCFTA)
- Renegotiating and signing new trade regimes with the rest of the world without feeling beholden to current, disadvantageous, and externally imposed terms of trade
- Increasing local and regional tax revenues
- Incorporating social distancing, digitalisation, and automation in industrial design
- Taking greater ownership control over the information technology industry in order to avoid a repetition of past "technology (non)leaping" and ownership mistakes made with the minerals & energy sectors.

In conclusion, while taking into account the devastation that the COVID-19 pandemic has caused on the continent, the key to sustainable industrialisation for SSA countries is first and foremost in taking full ownership of their means/factors of production and distribution in a collective manner. In short: the alleviation of longer-term structural inequalities in industrialisation efforts. Success in such an ambitious endeavour would hinge on a political mobilisation strategy that focuses on leveraging the energy and dedication of young people with local and regional cultural characteristics. SSA's young population is perhaps the strongest and most under-utilised asset that the region possesses. The role of the African Union and Regional Economic Commissions is crucial in this regard.

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