If Nigeria's Economic Performance From 1960–2020 Resembled China's and South Korea's: Exploring the Counterfactual and Subjunctive in Economics

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This paper extends earlier work on Nigeria's failure to improve living standards for its population when compared with China and South Korea since 1960. The paper employs the use of counterfactuals (''alternate histories and contingent futures") -- what might have happened had a particular historical event not occurred or occurred differently -- that has long been the domain of historians, not economists. First, I present the main reasons for Nigeria's poor performance over the last 60 years. Then I consider the "fantasy world of the counterfactual": What living standards would Nigeria have today if Chinese or South Korean demographic and economic growth rates were applied over this 60 year interval? The value of this "invented scenario" lies in "assigning a cost" to decades of failures in governance and economic management.

Keywords: Nigeria, counterfactuals in economics, economic development

INTRODUCTION

According to projections by the United Nations Population Division almost half the growth in the world's population to 2050 is expected to take place in Africa, with the continent's population increasing from 1.26 billion in 2017 to 2.40 billion people by mid-century, or, from approximately 17% of the world's population today to 25% in 2050 (Cookson, 2019).

According to the World Bank (World Bank, 2021), from 1960-2020, global Gross Domestic Product (GDP) per capita (in constant 2010 US dollars) -- the most widely-used metric in economics for measuring material well-being -- increased by 1.75% per year, while the increase in Sub-Saharan Africa was 0.6% per year, less than 40% of the world growth rate (https://data.worldbank.org/indicator/NY. GDP.MKTP.KD? locations=1W-ZG). For Nigeria, annual per capita GDP grew at a rate of 0.9%, slightly more than half of the world's annual growth rate. The relatively poor performance of Nigeria in particular, and Sub-Saharan Africa in general, is in stark contrast with the more successful economic performance experienced by China and South Korea over a similar interval. (Please see Table 1 in the Appendix).

In part because of the increasing lack of both personal security and economic opportunity, African refugees account for a third of the world's population that is displaced abroad, and since 2010 more than 1 million Sub-Saharan Africans have migrated to Europe (Financial Times, 2019). A Pew Research Center survey revealed that more than 40% of Sub-Saharan Africans -- and almost 75% of Nigerians polled -- said they would live in another country if they had the means and opportunity to do so, while a Gallup poll revealed that the share of Nigerian adults who want to emigrate increased from 41% in 2012 to 48% in 2018 (The Economist, 2018; The Economist, 2021). The short section that follows, largely reproduced from

Sohn (2020), provides some background information about Nigeria and lists the reasons for the poor performance of Nigeria's economy since gaining independence in 1960. The objective of this paper -- by entering into the "fantasy world of the counterfactual/subjunctive" -- is to pose the following types of questions: What would living standards be in Nigeria today if Chinese or South Korean demographic and economic growth rates were applied over this 60 year interval? What educational levels would have been achieved? What poverty rates would Nigeria be confronting today? What would Nigeria's mortality and morbidity rates look like today? What "material amenities" would most Nigerians enjoy if only...?

Exploring counterfactuals (''alternate histories and contingent futures") -- what might have happened had a particular historical event not occurred or occurred differently -- has long been the domain of historians. In 1931, Sir John Collings Squire, a British writer, edited a collection of essays that included contributions such as "If Napoleon Had Won the Battle of Waterloo" and "If Booth Had Missed Lincoln" (Squire, 1931). The Routledge Encyclopedia of Philosophy defines a counterfactual as a "conditional statement in which the 'if' clause makes a claim contrary to fact, stated grammatically in a subjunctive mood, that is expressing a wish or desire" (Natarajan, 2021).

BACKGROUND INFORMATION ABOUT NIGERIA

Known as "the Giant of Africa", Nigeria is the world's 20th largest economy and -- since overtaking South Africa in 2014 -- is the largest economy in Africa. Nigeria's population grew by approximately 2.6% per year over the six decades since gaining independence in 1960, 1% more per year than world population growth over the same interval. By mid-century, Nigeria's population -- which is likely to exceed the population of the US -- is projected to increase by more than 2.2% per year, from 206m million people in 2020 to approximately 400 million (United Nations Population Division, 2019). A recently published study by the University of Washington's Institute for Health Metrics and Evaluation (IHME, 2021) projects in its reference scenario that Nigeria's mid-century population will exceed 490m, more than 22% above the UN's projected level (https:// www.thelancet.com/journals/lancet/article/ PIIS0140-6736(20)30677-2/fulltext).

Nigeria -- one of 51 countries classified by the International Monetary Fund as "resource-rich" -- has an abundance of oil and gas reserves, fertile soil, and untapped mineral wealth, while at the same time, according to the World Bank, more than half the country is living on less than $1.90 a day of income. Nigeria has more poor people than India, a country with more than six times its population (The Economist, 2019a). While Nigeria exports 1.7m barrels of oil a day, only about half the population has access to electricity and only about a third to reliable electricity. Agricultural output represents approximately 20% of Nigeria's annual GDP, but still employs more than 70% of the labor force. Though the oil sector accounts for only about 10% of annual GDP, Nigeria's earnings from oil represent 70% of government revenue and between 80 - 90% of total export revenue, greatly exposing Nigeria's economic stability to volatile international oil prices. Even though life expectancy in Nigeria increased by 42% from 1960 to 2019 (from 37.2 years to 54.7 years), it is still about 18 years below the world average.

As a student of long-term issues for over 50 years I can argue with a reasonable degree of confidence that a country's long-term economic prospects are predominantly driven by demographic and technological parameters, along with a country's institutional and political environment. For example, the level of corruption in Nigeria -- both in the State and private sectors -- is almost without parallel in its dimensions: the funds plundered between independence in 1960 and 1999 -- the end of military rule -- is estimated at more than $400bn (Time, 2007), and in 2015, President Muhammadu Buhari stated that between 2005 and 2015 corrupt officials stole $150bn of state revenue (BBC News, 2015). According to Transparency International (https://www.transparency.org/news/feature/cpi2018-subsaharan-africa-regional-analysis), a non-governmental organization (NGO) dedicated to fighting corruption around the world, Nigeria is among the most corrupt countries in the world, listed at 149 out of 180 countries in the organization's 2020 ranking. Needless to say, over the years, these diverted funds could have been used to reduce poverty levels and to finance development projects in the country that could have significantly improved living standards.

Readers who are interested in a summary of the views of scholars of African history and economics that "explain" the reasons for the relative lag in economic development in Sub- Saharan Africa, most of

which are also shared by Nigeria, and a brief review of Nigeria's pre- and post-independence history are referred to Sohn (2020). The main focus of the 2020 paper was to enumerate, describe, and analyze the current long-term issues that are adversely impacting the growth in living standards in Nigeria: demography and urbanization, insufficient infrastructure (including roads, access to clean water and sanitation, communications, and electricity), regional, ethnic and religious stresses that are contributing to the rising tide of violence and insecurity in the country and the region, the over-reliance on oil revenue to finance indispensable government services such as education and health, and the widespread level of public and private corruption. Readers who are interested in a more in-depth description and analysis of these critical issues facing Nigeria over the next 30 years are referred to Sohn (2020).

A DIGRESSION ON COUNTERFACTUALS AND THE SUBJUNCTIVE

While there is no shortage of short-, medium-, and even long-term economic forecasts and projections of the future, as a student of the "dismal science" for over 50 years I have come across only one article that hinted at the use of the counterfactual in economics. It was written by Professor Wassily Leontief, the 1973 Nobel laureate in Economic Sciences, entitled "When Should History Be Written Backwards?" (Leontief, 1966).

As mentioned above, exploring counterfactuals (''alternate histories and contingent futures") -- what might have happened had a particular event not occurred or occurred differently -- has long been dominated by historians, and, occasionally by novelists. Speculating on questions framed in the "subjunctive" allows historians and others to display not only their imagination, their creativity, and knowledge of their disciplines, but also the mischievous and playful side of their personalities. Historians have employed the "subjunctive" to speculate on how revisions of the facts surrounding momentous events might have changed the course of world history, while other writers have applied the "subjunctive" to minor incidents that may seem trivial to all, save those fascinated by the outcome introduced by engaging the "counterfactual" on a very parochial subject.

For example, Jonathan Steinberg (2011) in his masterful biography of Otto von Bismarck -- Prussia-Germany's Iron Chancellor from 1862-90 -- poses "counterfactuals" on at least five occasions. In 1852, a full decade before assuming power, Bismarck was involved in a parliamentary dispute that was somehow elevated into "a challenge to a duel of four bullets" that he accepted, and only at the last moment was the temperature (and the bar) lowered to a duel of just "one bullet". As fate would have it, the adversaries missed their targets (which may have been by design), and the two foes shook hands and left the scene (page 120). How would Germany have evolved without the "larger-than-life" character of Otto von Bismarck in office for almost three decades? We will never know.

Another of the "counterfactuals" suggested by Steinberg, this one occurring at the end of Bismarck's career in 1888, hints at the possibility that had the events in "the year of the three Kaisers" unfolded otherwise, the history of Europe -- and most likely the world -- would have taken a dramatically different course. Regarding this extraordinary set of events, Steinberg writes: "Within the space of a hundred days, William I died, his son Frederick III died also, and 29-year-old [William I's grandson] became Kaiser William II (1859-1941)... Frederick's illness and death have always been a great 'might have been' in German history. Had he arrived [on the throne] healthy and strong, would the course of events have been different? Obviously the question has no answer" (pages 425 and 435).

Then there is Voltaire's quip regarding the sudden death in 1740 of the Holy Roman Emperor, Charles VI, after eating one of his favorite dishes: "a pot of mushrooms changed the history of Europe" (Goldstone, 2021). Most recently, French novelist Laurent Binet (2021), in his book Civilizations, imagines the Incas of Peru invading 16th-century Europe, not the other way around, which is what happened in 1532. It depicts the conquering Incas as far more benevolent than their European counterparts. Atahualpa becomes known as "the Protector of the Poor" for his egalitarian policies. The Incas are horrified by the savagery of the Spanish Inquisition, in spite of their own traditions of human sacrifice. It certainly suggests an interesting read!

Once aware of the possibilities that the "subjunctive" can conjure up, readers are likely to encounter it with increasing frequency, as in my case. These final examples of counterfactuals "appeared to me" on successive days and, to be sure, are only of "parochial interest" for the aficionados of these subjects, for whom they are not only intriguing but could also have emotional consequences. According to Tina Brown (2007), the author of The Diana Chronicles, in 1997, Diana, Princess of Wales, expressed interest in finding a beachside mansion in Southampton, New York, a tony resort town on Long Island's East End, to spend the summer with her children, Princes William and Harry. Without going into details here, she was unable to secure the required permission from the Palace and the project was abandoned. In hindsight reconstituting this "fact" into the "subjunctive" would generate the following counterfactual: if she would been granted permission to spend the summer of 1997 on Long Island, in all likelihood, she would be alive today.

Finally, for American baseball fans of a "certain age", in an article about the increasing prospect of replacing the home-plate umpire with a robot to call "balls and strikes" (Helfand, 2021), we learn that according to many baseball experts the "perfect game" pitched by the New York Yankees' Don Larsen in the 1956 World Series was likely recorded prematurely. Helfand reports that Stephen Jay Gould (1941-2002), the distinguished American scientist and baseball maven, argued that as the game ended on a 'called third-strike', "most observers swear that the pitch was noticeably outside" (page 27). The implications of this "error" -- which presumably would have been flagged by the proposed "robot umpire" had it been operational at the time -- if transformed into a counterfactual could have been incalculable for Don Larsen's life after baseball and for the legendary position Larsen holds in the hearts of baseball aficionados everywhere. (Full disclosure: the emotional high that I experienced when I was introduced to Don Larsen by the owner of a Greenwich Village Italian restaurant in which, by chance, we were both having lunch about 25 years ago was equal to the feeling I had, when on a visit to Wisconsin, I stood outside Lambeau Field, the storied stadium of the Green Bay Packers).

APPLYING THE COUNTERFACTUAL IN ECONOMICS: THE CASE OF NIGERIA

> *"Though you want economic development to happen in 10 years, 'you have to realize that development takes 100 years'" (Hans Rosling (Pilling, 2018))*

The exercise that unfolds below partly follows in the footsteps of four of the leading "data-using" experts of our time, the late Swedish physician and statistician, Hans Rosling (1948-2017); the late British economist Angus Maddison (1926-2010); the 2015 Nobel laureate in Economic Sciences, Angus Deaton (1948-); and the distinguished American economist Robert Gordon (1940-). Their intellectual firepower and unbounded curiosity combined with their extensive utilization of large data bases extending over many decades to address a common research interest: documenting economic growth and development and, as a result, tracking the improvement in living standards that enabled the "great escape" from poverty for hundreds of millions of people around the world. My more confined study -- focused on Nigeria, also facilitated by engaging large, long-term databases -- explores the same subject albeit through the use of counterfactuals.

Exploiting the decades-rich data-bases of the United Nations (its Population Division, Food and Agriculture Organization, and Development Programme), The World Bank, and the "new-kids-on-the-block" -- the Oxford University-based "Our World in Data" and the University of Washington-based Institute for Health Metrics and Evaluation (IHME) websites (for demographic, health and disease metrics) -- I enter the "fantasy world of the counterfactual/subjunctive" to pose the following questions in light of the above-described development trajectories that are summarized in the data from Table 1 (reproduced from Sohn (2020)) and expanded on in Table 2, in the Appendix: What would living standards be like in Nigeria today if Chinese or South Korean demographic and economic growth rates were applied over this 60 year interval? What educational levels would have been achieved in Nigeria? What poverty rates would Nigeria be confronting today? What would Nigeria's mortality and morbidity rates look like today? What "material amenities" would most Nigerians enjoy if only...?

The value of this entirely "invented and fictional scenario" lies in "assigning a cost" for the decades of failure of successive national governments in particular, and Nigerian society in general. Nigeria's problems -- that are listed at the end of the previous section and described in greater detail in Sohn (2020) -- do have solutions as demonstrated by the developmental "success stories" achieved by China and South Korea over a similar interval. By asking what would life look like today for the average Nigerian if the Chinese and South Korean experience would have -- or could have -- prevailed in Nigeria, we are able to put a "price" on the failures of Nigerian governance and economic performance since 1960.

Using the most recent data made available by the World Bank, Table 2 displays (where necessary) two data points -- the actual data for 1960 and 2020 -- for the following demographic and economic metrics for three countries, China, Nigeria, and South Korea: population levels; Gross Domestic Product (GDP) levels; per capita GDP levels; along with annualized growth rates of population and per capita GDP for the three countries over the 60-year interval. (The "dollar" metrics are all denominated in constant 2010 US dollars). It is important to note that "averages" do not tell the whole story, a point that will be discussed at the conclusion of the paper. In anticipation of this, also included in Table 2 are the evolving annual growth rates in population for China, Nigeria, and South Korea in 1960, 1990 and 2020. (For China, 1963 is the initial year for presenting the data on the annual population growth rate because of the distortions introduced by the 1959-61 famine than led to the death, mostly by starvation, of an estimated 36-45m people).

A few comments about some of the cells in this table are warranted. First, readers should note the significant differences in the annualized population growth rates between the two Asian countries and Nigeria over the elapsed six decades. The tremendous run-up in Nigeria's 2020 population level relative to its 1960 level is simply the power of "compounding" over 60 years! Ditto for the relatively (very) high annualized GDP growth rates experienced by the two Asian countries compared to Nigeria's annualized GDP growth rate over this interval of six decades. The very large increases in 2020 per capita GDP levels -- the most widely-used (however imperfect) metric economists employ as a proxy for the "standard of living" -- for both China and South Korea (44 and 30 times their 1960 levels, respectively), relative to the very modest increase in per capita income in Nigeria over the 60-year interval (2020 per capita GDP was less than twice its 1960 level) reveals the powerful dynamics resulting from a combination of demographic change and economic performance over a long period of time. Both Asian countries experienced very modest population growth and very strong economic growth over the six decades while Nigeria's record displayed the reverse.

Before examining in more detail the evolution of some of the constituent parts that comprise a "standard of living" that include metrics on health, education, poverty, infrastructure, and the consumption of what are considered today as "must have" consumer goods, I pose the first set of "counterfactual" questions: Suppose we applied the annual population and GDP growth rates of China and South Korea to Nigeria for the 1960-2020 interval, what would the "standard of living" , that is, per capita GDP, look like in Nigeria and vice versa?

Table 3 in the Appendix contrasts the historical (that is, actual) 2020 data of the population and per capita GDP levels for these three countries with the "fantasy" data for the same year, after applying the Nigerian rates of both to China and South Korea and the Chinese and South Korean rates to Nigeria. Once again, the power of "compounding" over six decades is revealed as a "game changer"! Applying Nigeria's annual population growth rate to China and South Korea from 1960-2020 would have increased China's 2020 population to over 3 billion people and South Korea's to 114 m, both more than double their actual 2020 levels. To be sure, both of the Asian countries' actual population growth rates were, in part, the result of determined government policies regarding fertility, with varying degrees of severity. (More about this below). Nigeria's population in 2020 under the "fantasy" scenario would be less than half of its actual 2020 level.

Currently the World Bank -- using gross domestic income as its metric (https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups)--classifies China as an upper-middle income country; Nigeria as a lower-middle income country; and South Korea as a high-income country even though the dollar income brackets used in the World Bank classification system do not reflect the same "dollar denominations" that appear in Tables 1-3. However, from the differences in the

1960, 2020 actual, and 2020 "fantasy" per capita income data for the three countries, one can easily discern the ranking of these countries.

Turning to the 2020 per capita income levels in Table 3 for the counterfactual (or "fantasy") data -- that is after applying the annual growth rates in per capita income of Nigeria to China and South Korea, and Chinese and South Korean rates to Nigeria -- China is once again as "dirt poor" as it was in 1960, as if the greatest economic transformation in world history never happened! South Korea's standard of living today would not be much higher than Nigeria's in 1960, given that Nigeria's per capita income was almost 50% higher than South Korea's in 1960, according to World Bank data in Table 1. But, after applying the actual 1960-2020 population and per capita GDP growth rates of China and South Korea, respectively, to Nigeria, the latter country's per capita income -- would be either $59,500 or $42,393 -- more than 25 or 18 times, respectively, its actual 2020 level, or slightly higher than Sweden's or France's actual 2020 per capita income, respectively, according to World Bank data (https://data.worldbank.org/indicator/NY.GDP.PCAP.KD?locations=SE-FR).

A few caveats regarding the World Bank data are warranted. Ideally, it would be more accurate to account for the "purchasing power" differences, that is, comparing per capita income levels on a "purchasing power parity (ppp)" basis but this was not possible for the entire 60-year interval in this exercise since the World Bank's per capita GDP in "ppp constant 2017 international dollars" data only began in 1990. A quick glance at that graph (https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.KD?locations=SE-CN-NG-KR-FR) would confirm that the rankings were preserved for the 2020 data, even though the actual per capita income levels for 2020 are different (https://data.worldbank.org/indicator/NY.GDP.PCAP.KD?locations=SE-CN-NG-KR-FR). (The only exception is the greater decline in per capita GDP (ppp) in France in 2020, almost certainly caused by the Covid-19 pandemic that will likely be reversed as the economic effects of the pandemic dissipate).

A TALE OF TWO COUNTRIES: NIGERIA AND SWEDEN

> *"It's rare for any country to make the climb from poverty to wealth. The IMF tracks 195 economies and counts just 39 as "advanced." Only 18 nations have graduated into the advanced class since the end of the second world war." (Sharma, 2021)*

This section provides statistical data beginning with a few generally-accepted development metrics that is followed by more specific data that display the glaring disparity in "living standards" between Nigeria and Sweden today. Readers are now firmly in the "fantasy world of the counterfactual" as described in the previous section. Since we are operating in the world of fantasy I have elected to employ the more extreme case -- applying China's low population and high income growth rates to Nigeria over the 1960-2020 interval -- to generate Nigeria's 2020 "counterfactual" population of 93.4m people and per capita income of $59,500, a level similar to Sweden's. The tables that follow track demographic, economic, health, and educational data for these countries and are often accompanied by statistics for China and South Korea, since the latter countries are "cohorts" of Nigeria in the continuing march to economic development over the last six decades. That is, both of these countries, in the 1960s and 1970s, had similar metrics to Nigeria's for per capita income, life expectancy, fertility rates, infant mortality rates, etc. (Please see Table 1). Readers will notice that for some of the indicators that follow, both China and South Korea -- with the latter country displaying "better" metrics than the former since it has already been categorized by the International Monetary Fund as an "advanced country" (Sharma, 2021) -- have reached developed country levels, while for other indicators these two countries are firmly "en route" to reaching developed country norms. Nigeria, on the other hand, seems in many cases, to be "treading water", at best and "listing", at worst.

It is important to stress that the data presented in the tables are designed to upset, provoke, alarm, and even shock readers when observing the differences in living standards between Nigeria and Sweden that are displayed and -- when comparing the "development experience" in China and South Korea over a similar interval of time -- to highlight the very high "price" that Nigeria is paying for its failures in

governance and economic performance over the last six decades in terms of the well-being of tens of millions of its citizens.

Table 4 provides a sample of some generally-accepted development data for the four countries for various years: the share of the labor force in agriculture, homicides, the percentage of total employment that is considered to be in "vulnerable employment", the concentration index of exports, the share of the population living in extreme poverty, the degree of urbanization, and Transparency International's corruption perception index and country rankings. Almost without exception all of these metrics are either causally connected to GDP per capita or statistically correlated with it, therefore it is easy to discern where Nigeria should be with these data with its now "Swedish" standard of living (per capita GDP), in contrast to where it currently is. In addition, readers should note the steady progress made by China and South Korea in reducing their poverty rates and the share of the labor force engaged in agriculture, and contrast this with Nigeria's lackluster performance over the last 30-40 years.

As mentioned above, acknowledging that per capita income is only an imperfect metric for measuring economic well-being and the quality of life, in 1990, economists Mahbub ul Haq and Amartya Sen created the Human Development Index (HDI) to address this concern. In addition to per capita income, standardized country data on health and education are included with assigned weights to generate a composite, annually published HDI, along with country rankings. Table 4 also includes this data from the 2020 Human Development Report (UNDP, 2020).

Tables 5, 6, and 7 provide much more detailed multi-decade data for these four countries on critical demographic, health, and education metrics that represent a country's level of development, while the last table, Table 8, describes the "degree of diffusion or adoption" in these countries of selected popular consumer products, and, of course, the percentage of their populations that have access to the electricity that is needed to enjoy most of these modern-day amenities.

The demographic statistics for the four countries in Table 5, most of which span six decades in coverage, include: annualized population growth rates and population levels, years of life expectancy, child mortality rates, contraceptive prevalence for women, and fertility rates. Once again, the very slow progress displayed by Nigeria -- as compared with China and South Korea -- in moving these metrics to "developed country" levels can, in part, be explained by the equally slow progress in improving the health and education metrics presented in Tables 6 and 7 that follow. For example, in 1960 China's 1960 fertility rate was 5.8 births per woman and Nigeria's was 6.4. However, by 2020, China's fertility rate -- which declined by more than 70% -- was the same as Sweden's, while Nigeria's declined by less than 20%. To be sure, child mortality rates and contraceptive use by women, in part, explain fertility rates, and here, too, Nigerian percentages are conspicuously "out of sync" with these metrics of the other three countries. Life expectancy in Nigeria today is the same that it was in South Korea 60 years ago!

The physical health profile of a nation's population is increasingly being recognized as a critical ingredient of a country's economic health and well-being. For this reason, it is included as one of the components that comprises the "catch-all" UNDP's Human Development Index, discussed above. Table 6 provides an over-view of the striking gaps in the health-related statistics between these two rich (sic) countries in our counterfactual world, Nigeria and Sweden, along with Nigeria's cohort countries, China and South Korea.

Beginning with some macro-health data such as health expenditure per person and national health expenditure as a percent of national GDP, the table continues with metrics on preventive immunizations of infants against DPT and child malnutrition. These are followed by diet and nutrition statistics: average daily protein consumption and the percentage of the population that is incapable of affording a healthy diet because it would require expenditure in excess of 63% of household income. Also included in Table 6 is a composite index called the Global Hunger Index (GHI, 2020), a tool that is designed to comprehensively measure and track hunger at global, regional, and national levels. GHI scores are calculated each year to assess progress and setbacks in combating hunger (http://www.globalhungerindex. org/download/all.html). Finally, a discussion about national health would be incomplete without including the state of safely managed water and sanitation services, especially in a world that is increasingly urbanized, since unsafe water and sewage infrastructures are leading risk factors for infectious diseases, including cholera, diarrhea,

dysentery, hepatitis A, typhoid and polio. Unsafe water and sewage exacerbate malnutrition, and in particular, childhood stunting. Once again, the reported differences between Nigeria and Sweden in these statistics are jarring, while the progress made by China in its attack on hunger and malnutrition, along with the improved state of sanitation over the last 20-30 years is extraordinary, especially given China's large population.

Other critical components of a modern-day standard-of-living that are characteristic of successful countries are their high literacy and other education metrics. These indicators provide information on the skill and proficiency of a country's labor force, especially in navigating the "migration" of economic activity of national economies out of agriculture and manufacturing into services, and especially into service sectors whose "products" are increasingly delivered digitally through the internet and computers. It is well-known in economics that the most important determinant of the rise in living standards in the 20th century was the increase in labor productivity. To be sure, the increase in the productivity of labor is complemented by the increasing capital intensity of the work place, but without rising literacy and educational levels for the population over time it is unlikely that the labor force could acquire the necessary skill sets to efficiently operate the increasingly sophisticated machinery.

Because of the overwhelming responsibility of the State in financing education, Table 7 in the Appendix, begins by tracing the increasing percentage of GDP dedicated to expenditure on education over the 1979-2019 interval for China, South Korea, and Sweden. Regrettably, no statistics were available for Nigeria over the 40-year period. Over this period, both China and South Korea have significantly increased state expenditure on education as a percent of GDP, in line with standard economic development theory, though not yet reaching Sweden's rate of almost 8% of GDP in 2017.

According to the UNDP's 2020 HDR, in 2019, Nigeria's literacy rate was well below China's (and, needless to say, the rates in South Korea and Sweden, which are not reported since they are close to 100%). Readers can see that the percentage of the population over the age of 25 with some secondary education in China is approaching the levels of rich countries such as South Korea and Sweden. Regrettably, there were no comparable available data for these metrics for Nigeria.

The "quantity of years of schooling" does not necessarily translate into the "quality of education". Reported scores on 2015 PISA exams ranks South Korea first, followed by Sweden, and China, in that order, with no data reported for Nigeria. As a proxy for this metric it is useful to employ the data on the percent of school teachers trained to teach. In 2019, according to the HDR, while these data are not reported for China, South Korea, and Sweden (because, again, they presumably approach 100%) while for Nigeria the metric was only 66% in 2010, the most recently reported year (https://data.worldbank.org/indicator/SE.PRM.TCAQ.ZS?locations=CN-NG-KR). Returning to the issue of the "quality of education", a study by the Washington-based Brookings Institution reported that "44% of Nigerian children who completed primary school were unable to read a full sentence", and when one Nigerian state required its teachers to take basic numeracy and literacy tests, most of the teachers failed (Fielding, 2014).

One indicator that serves as a proxy for some insight into the future productivity of the national labor force is the share of the youth population that is not in education, employment or training. These "incubators" for acquiring vocational and professional skills in a modern economy indicate that a troubling 31.4% of Nigeria's youth are not engaged in any formal training versus only 5.5% of the youth population in Sweden, according to World Bank data. (No data were available for China or South Korea).

Finally, over time, in addition to improving the national metrics of health, education and physical infrastructure (including water and sanitation services), a sure sign of economic development is the steady increase in the other key -- some would argue, the principal -- ingredient in the UN's Human Development Index, per capita income. It is per capita income that ultimately translates into consumer expenditures on housing, transport, consumer durable and non-durable goods, and services. In other words, purchases of the "stuff" we fill our houses with and spend our time on -- when not working -- that enhances material well-being.

Regarding the relationship between automobile ownership and economic development, as one-time Chief Executive Officer of Renault-Nissan -- and current fugitive from Japan's justice system -- Carlos Ghosn said: "Nothing can stop the car from being the most coveted product that comes with development"

(The Economist, 2008). In addition to the personal automobile, today, the widespread availability and ease of affordability of other "must have" consumer goods certainly confirms the relationship of the ownership of modern-day appliances and economic development throughout the world.

More than half-a-century ago I recall asking my maternal grandparents, both born in the last decade of the 19th century, if they could identify a product that was primus inter pares for improving their material lives, given the vast array of new consumer goods that they were exposed to, experienced, and enjoyed over the course of their lives. For my grandmother, it was without question, the washing machine. For my grandfather, it was the personal automobile. About 25 years ago I posed the same question to my parents, both of whom were then approximately at the same age as my grandparents when I asked them that question. Without thinking twice my mother quickly said the dishwasher and the clothes dryer, and for my father it was television and air conditioning. Born in the middle of the 20th century, I am now about the same age as my grandparents and parents when this question was posed to them, and for me the personal computer and the internet are the centerpieces at this time. (To readers belonging to the "Millennial" demographic -- or the younger "Generation Z" cohort -- I encourage the following experiment: observe how quickly and to what degree normal life deteriorates within a three-day moratorium on the use of smartphones)! All of these goods or services economize on physical effort and expenditure of time, and/or enhance material well-being by relaxing constraints, increasing personal freedom, and providing more choice.

Table 8 in the Appendix provides data for these four countries on the level of adoption of the following "life enhancing" appliances over the last two or three decades: ownership of motor vehicles, refrigerators, washing machines, televisions, computers, and internet connection. Needless to say, in order to enjoy the benefits conferred from owning these appliances, access to electricity is a necessary condition, for which residents of rich countries born after World War II take for granted, save during occasional outages caused by weather-related events or temporary service suspensions due to technical glitches. Therefore, Table 8 also includes data on access to electricity for these countries over the last 30 years.

After considering the data in Table 8, it is not great leap in logic to understand one of the reasons for the low levels of adoption of these appliances in Nigeria, not only relative to rich countries such as South Korea and Sweden, but also when compared with a fast-developing China. It is important to note from the data in Table 8 that at the end of the second decade of the 21st century, about three-quarters of Nigeria's rural population -- and almost half of its total population -- have no access to electricity. In 2019, because extensive outages are the norm, only 33% of Nigerians who were connected to the grid had reliable electricity usage (Feng and Pilling, 2019). Curiously, over the 25 years ending in 2015, the number of people living without access to electricity in Africa south of the Sahara increased steadily from 400 million to 600 million, likely the result of rapid population growth (World Bank, 2018). Whether the decline, finally registered in 2016, continues in the future is uncertain (World Bank, 2018).

THE "DEVELOPMENT ROADS" NOT TAKEN: A RECKONING

The use of the counterfactual/subjunctive in this paper was introduced to highlight the disparity in living standards -- incorporating not only per capita income, but the availability and affordability of goods and services that enhance the well-being of people -- between a rich, developed country, Sweden, and a developing, lower middle-income country, Nigeria. Sweden was selected as the representative rich country after applying the "counterfactual" data to Nigeria described earlier which is presented in Table 3. The counterfactual data -- GDP and population growth rates -- applied from China and South Korea were chosen because these countries represent -- regrettably -- all too rare examples of successful development stories that have been ongoing for over half a century. In 1960, the latter country had an annual per capita income of less than $1000 (less than $3 a day) but since 1996 has become a fully-fledged member of the Organization for Economic Cooperation and Development, the Paris-based "club of rich-countries". China's nearly five-decade long transformational development program has lifted tens -- if not hundreds -- of millions of people out of abject poverty en route to middle-class living standards, able to enjoy the health, educational, and material benefits that accompany this modern standard of living.

On the other hand, had it somehow been able to adopt a development template to emulate the experience of China or South Korea, Nigeria, according to the "counterfactual" assumptions applied over the six decades since assuming independence, today, would be enjoying most of the metrics characteristic of Sweden. While China, in contrast to South Korea, may not yet have reached those metrics in some health and education benchmarks or in the degree of ownership of modern household appliances, the progress over the last 30 years is palpable as the data in the various tables attest.

Regarding Nigeria, the cost incurred for its failed economic performance can be unequivocally assigned to poorly designed and implemented economic and social policies and by equally appalling governance and institutional failures, all compounded over six decades. More specifically, the inability and/or unwillingness of successive governments to manage their demographic metrics; the sluggish progress in the provision of indispensable physical and social infrastructure that includes transport, electricity, health, and education; the governments' repeated failures to contain the endemic regional, ethnic and religious stresses that are contributing to the rising tide of violence and insecurity in the country; the country's continued over-reliance on its oil sector for much-needed foreign exchange, and, not least, the egregious levels of widespread public- and private-sector corruption that are not being addressed at the scale and pace required to "turn the corner" on the development conundrum. (Please see Sohn (2020) for a detailed discussion of these issues).

With regard to addressing these issues, China and South Korea -- despite having very different political and economic systems -- both serve as models to emulate in the quest to "escape poverty" on a national scale. On the long march to development, this study has emphasized the pre-eminent positions that demography (population growth, fertility, etc.) and public health and education resources play in this long-term project. On the subject of managing population growth, much criticism has been directed at China for its harsh "one-child" policy -- including forced sterilization, contraception and abortions -- that was in force from the late 1970s to 2015, but South Korea and other countries, such as Costa Rica, have been able to manage their population growth and fertility metrics as successfully with much more benign policies.

For example, while Costa Rica's population growth rate averaged 2.3% over the 60-year interval, not much lower than Nigeria's 2.6%, over the last six decades Nigeria's annual rate has been relatively constant -- ranging between 2-3% per year -- while Costa Rica's annual growth rate of 3.7% in 1960, declined to 0.9% by 2020 (https://data.worldbank.org/indicator/SP.POP.GROW?locations=CR-NG). With respect to fertility rates, Costa Rica's fertility rate in 1960 was 6.7, higher than Nigeria's rate of 6.4, but by 2020 its fertility rate fell to 1.7, while Nigeria's declined only modestly to 5.4 (https://data.worldbank.org/indicator/SP.DYN.TFRT.IN?locations=CR-NG).

Ditto for Costa Rica's record on improvements in public health and education. The decision taken decades ago to upgrade the quantity and quality of its public health and education systems by consistently allocating high percentages of GDP to these two sectors over the last 25 years has delivered "first-world" metrics for life expectancy, mortality and morbidity rates, immunizations, literacy rates, primary school teachers trained to teach, etc. (Gawande, 2021; https://data.worldbank.org). Despite having a per capita income that is one-sixth of the United States, Costa Rica, which was admitted to the OECD in May 2021 as its 38th member, enjoys life expectancy higher than the United States (OECD, 2021; Gawande, 2021).

Leaving aside the "fantasy scenario" explored in this paper and returning to reality, what are the future prospects for living standards in Nigeria? While I have not extrapolated the population and fertility trajectories of Nigeria to the (very) long-term future, others have done so. For example, in addition to the United Nations Population Division's well-established program of publishing long-term population projections under alternative assumptions, (https://population.un.org/wpp/Download/Standard/Population/), a team of researchers at the University of Washington-based Institute for Health Metrics and Evaluation (IHME) recently released population projections to 2100 that are heavily dependent on alternative sets of assumptions regarding education, health, and fertility metrics (https://vizhub.healthdata.org/population-forecast/).

In their reference scenario they project Nigeria's population in 2100 to increase by almost a factor of four from its 2020 level, to 789m, and China's population to decline to 739m, almost half of its 2020 level.

That is, in 2100, according to the team's projections, Nigeria's population will be greater than China's, while the UN Population Division, in its medium variant, projects Nigeria's 2100 population at 739m.

With respect to fertility rates, the IHME reference scenario projects Nigeria's fertility rate to decline to only 4.1 by mid-century, a rate of 2.1 (referred to as the "replacement rate" by demographers) by 2067, and reaching Sweden's 2020 fertility rate of 1.7 in 2100, 80 years from now (https://vizhub.healthdata.org/population-forecast/).

Given the above demographic projections and the continuing failure by Nigeria's government and the international community to address Nigeria's other major issues mentioned above and described in Sohn (2020) that are plaguing the economy in particular, and Nigerian society in general, living standards will continue to stagnate, increasing the likelihood of increased insecurity, civil strife, and migration, especially by younger, educated Nigerians.

On the subject of (very) long-term problems confronting Nigeria to the end of the century in addition to its high population growth and fertility rates, two other "front-burner" issues should be mentioned: First, Nigeria's continuing over-dependency on oil sector revenue to finance government spending and oil's oversized position in the country's export structure (Table 4, and Sohn (2020)). It is important to note that the emerging plan to decarbonize the global energy system -- likely by 2100 -- could imply that Nigeria's "crown jewel" -- its endowment of oil -- will be a "wasting" and possibly a "wasted" asset by the end of the century. Second, until decarbonization is realized, because of its topography and latitudinal position, the conventional wisdom is that Africa -- including Nigeria -- will be one of the regions hardest hit by global warming (Sengupta, 2019). For those countries situated "in temperate zones, rising temperatures may bring milder weather and a longer growing season". But for countries like Nigeria, "in the tropics, the effects are not likely to be so benign" (The Economist, 2019b).

Finally, one unintentional spillover effect from the intersection of Nigeria's unrestrained population growth, anaemic growth in living standards, and the expected global climate change to mid-century and beyond is the prospect of massive emigration -- especially of young, educated Nigerians -- to developed countries in Europe, North America, and possibly the Asian-Pacific region as well, given the projected population "busts" in these rich countries (Khanna, 2021).

CONCLUDING REMARKS

> *"Ne saurait faire d'omelette sans casser des œufs", ["One can't make an omelette without breaking some eggs"], attributed to François Athanase de Charette de la Contrie (1763 – 96), a Breton Royalist soldier and politician).*

It is clear from the discussion so far that the development trajectory followed by Nigeria over the course of many decades is failing. Barring a more authoritative approach as was implemented by China, perhaps the country, with the approval by referendum, should be governed as a UN Trusteeship, with technocrats from countries with proven successful development programs such as Costa Rica, South Korea, China, Poland, and Chile having renewable 10-year "concessions" to implement far-reaching reforms to address the past failures that span the spectrum including economics and finance, population and fertility, education and health, corruption and gang-related crime and violence?

Alternatively, since Nigeria is anyhow a "manufactured" country that was assembled by Great Britain, perhaps it should be dismembered to the end of reducing the level of violence and lawlessness that is impeding the effort to forge national cohesion in order to confront the country's major development issues?

It is appropriate to conclude a paper that is centered on the "counterfactual -- usually the domain of novelists and historians -- by quoting some of the impressions and sentiments about the future of his country made by the Nigerian writer, Wole Soyinka, who was awarded the Nobel Prize in literature in 1986. These remarks were part of an interview in connection with the publication of Mr. Soyinka's 2021 novel, *Chronicles from the Land of the Happiest People on Earth*,"a brutally satirical look at power and corruption in Nigeria" (Munshi, 2021).

"What — as an observer, as a citizen, as a human being — appalls me is quote-unquote 'man's inhumanity to man' " ... " And this has become the thesis, the essence of Nigeria at present on all levels, whether you're talking about the consequences of corruption, whether you're talking about the degradation of human life physically, whether you're talking about kidnapping."

"The result is an image of Nigeria that he felt the country needed to see. What was that image? 'In some sense, cannibalism, if you like, of a strange kind, of a society which is actually eating itself, sort of self-directed cannibalism and the total deterioration of our humanity'... 'That's really what, just year after year, decade after decade, I have just seen what I considered as the true Nigerian humanity vanishing.'"

And finally:

"Soyinka comes back repeatedly to the fact that Nigeria is an artificial nation state — 'the British came and slapped some chunks together and said, that's yours — and that the secessionist impulse has always been part of the country's DNA'".

"Now, can Nigeria hold? I honestly don't know." ... "I hope we manage to stay together because I have a feeling that the problems might be even more compounded if we break up. But it's not from any sense of attachment to the concept of Nigeria. No, it's just a pragmatic position that I hold."

ENDNOTES

1. Table 1 is reprinted from Sohn (2020).
2. Many cells in Tables 1-8 have the abbreviation, NA, entered. Most of the time, NA refers to "not applicable", usually because the value approaches 100%, such as "the literacy rate (the percent of the population aged 15 and greater who are literate") in, for example, Sweden. In other cases, the NA refers to "not available", such as "public expenditure on education as a percent of GDP" in Nigeria. I do not know the reason why these data are unavailable.
3. Since the data in Tables 1-8 are taken from multiple data bases, I used the following abbreviations in the tables for the data sources that are cited in the References:
    - FAO= Food and Agriculture Organization (United Nations)
    - GDL= Global Data Lab
    - IHME= Institute for Health Metrics and Evaluation
    - NM= Nation Master
    - OWID= Our World In Data
    - TI= Transparency International
    - HDR= Human Development Report (United Nations Development Programme, UNDP)
    - WB= World Bank Open Data

REFERENCES

BBC News. (2015, July 28). *Nigerian former minister "stole $6bn of public money"*.

Binet, L. (2021). *Civilizations*. New York: Farrar, Straus and Giroux.

Brown, T. (2007). *The Diana Chronicles*. New York: Random House.

Cookson, C. (2019, June 18). Africa to propel world's population towards 10bn by 2050. *Financial Times*.

Food and Agriculture Organization (FAO). (2021). Retrieved from https://www.fao.org/statistics/en/

Feng, E., & Pilling, D. (2019, March 28). African economy, FT Big Read. *Financial Times*.

Fielding, A. (2014, May 5). Fear that youth unemployment will foment unrest, Investing in Nigeria (Special Report). *Financial Times*.
Financial Times. (2019, June 17). *Datawatch: Africa's Refugees*.
Gawande, A. (2021, August 30). The Costa Rica Model. *The New Yorker*, pp. 30–41.
Global Data Lab.org. (2021). Retrieved from https://globaldatalab.org/areadata
Global Hunger Index (GHI). (2020). Retrieved from https://www.globalhungerindex.org/download/all.html
Helfand, Z. (2021, August 30). Kill The Umpire, The Sporting Scene. *The New Yorker*, pp. 24–8.
Goldstone, N. (2021). *In the Shadow of the Empress: The Defiant Lives of Maria Theresa, Mother of Marie Antoinette, and Her Daughters* (p.35). New York: Little, Brown and Company.
Institute for Health Metrics and Evaluation (IHME). (2021). Retrieved from https://vizhub.healthdata.org/population-forecast/
Khanna, P. (2021, October 4). Migration will soon be the biggest climate challenge we face, Opinion. *Financial Times*.
Leontief, W. (1966). When Should History Be Written Backwards? In *Essays in Economics: Theories and Theorizing* (pp. 12–23). New York: Oxford University Press.
Munshi, N. (2021, September 25). Something has broken, Interview. *Financial Times*.
Natarajan, P. (2021, August 5). In a Subjunctive Mood, Bookshelf. *The Wall Street Journal*.
Nation Master.com. (2021). Retrieved from https://www.nationmaster.com.
Organisation for Economic Co-operation and Development (OECD). (2021). Retrieved from https://www.oecd.org/about/members-and-partners/
Our World In Data.org (OWID). (2021). Retrieved from https://ourworldindata.org
Pilling, D. (2018, July 19). Reasons to be optimistic about Africa's future. *Financial Times.*
Sengupta, S. (2019, April 23). Poor Nations Lose as Planet Warms, Study Finds. *The New York Times*.
Sharma, R. (2021, September 13). The Rise of Eastern Europe is a Forgotten Development Success Story. *Financial Times*.
Sohn, I. (2020). Why Is Nigeria -- The "Giant of Africa" -- Still Poor? *Journal of Applied Business and Economics*, *22*(5), 11–41.
Squire, J.C. (1931). *If It Had Happened Otherwise*. London: Longmans, Green and Co.
Steinberg, J. (2011). *Bismarck: A Life*. New York: Oxford University Press.
The Economist. (2008, November 15). A global love affair (A special report on cars in emerging markets) (p.4).
The Economist. (2018, March 31). *Returning migrants: Homeward bound* (p.50).
The Economist. (2019a, April 6). *Welfare in India: The Beauty of Breadth* (p.14).
The Economist. (2019b, April 20). *Climate change and crop disease: Blocking the road to rusty death* (p.69).
The Economist. (2021, October 23). *Nigeria: When things fall apart* (p.59).
Time. (2007, April 23). *A Failure of Democracy in Nigeria*.
Transparency International. (2018). *Corruption Perceptions Index*. Retrieved from https://www.transparency.org/news/feature/cpi2018-subsaharan-africa-regional-analysis
United Nations Development Programme (UNDP). (2018). Retrieved from http://hdr.undp.org/en/2018-update
United Nations Development Programme (UNDP). (2020). Retrieved from http://hdr.undp.org/en/2020-report
United Nations Population Division (UNPD). (2019). Retrieved from https://www.un.org/en/academic-impact/97-billion-earth-2050-growth-rate-slowing-says-new-un-population-report
United Nations Population Division (UNPD).(2021). Retrieved from https://population.un.org/wpp/Download/Standard/Population/
Wikipedia.org (WIKI). (2021). Retrieved from https://en.wikipedia.org/wiki/List_of_countries_by_vehicles_per_capita

World Bank. (2018). *International Energy Agency: Tracking SDG7, The Energy Progress Report*. Washington, D.C.
World Bank (WB). (2021). World Bank Open Data. Retrieved from https://data.worldbank.org

APPENDIX

TABLE 1
COMPARATIVE DEVELOPMENT STATISTICS

Indicator	Source	China	Nigeria	South Korea	Sub-Saharan Africa
Population					
2017 Level (millions)	WB	1,386.00	190.9	51.5	1,061
Annual Percentage Growth:1960-2017	HDR	1.3	2.56	1.30	2.73
Projected Annual Percentage Growth: 2015-2020	HDR	0.4	2.6	0.4	2.7
Life Expectancy					
Life Expectancy at Birth:1960	WB	43.8	37.0	53.0	40.4
Life Expectancy at Birth:2017	WB	76.4	53.9	82.6	60.8
Avg. Annual Increase in Life Expectancy (years 1960-2017)	WB	0.57	0.30	0.52	0.36
Fertility Rate (Births per woman)					
1960	WB	5.8	6.4	6.1	6.7
1990	WB	2.4	6.5	1.6	6.4
2017	WB	1.6	5.5	1.1	4.8
Infant Mortality Rate (Per 1000 live births)					
1960	WB	82.9 (1969)	193.7 (1964)	79.2	na
1990	WB	42.1	125.6	13.3	107.8
2017	WB	8.0	64.6	2.8	57.5
2017 rate / 1960 rate	WB	0.10	0.33	0.04	na
Gross Domestic Product					
GDP per Capita: 2017 (In 2011 dollars, ppp)	HDR	15,270	5,231.00	35,945.00	3,399
GDP per Capita: (In constant 2010 dollars):1960	WB	191.8	1,367.60	944.30	1,103.70
GDP per Capita: (In constant 2010 dollars):1990	WB	730.8	1,514.10	8,464.90	1,286.90
GDP per Capita: (In constant 2010 dollars):2017	WB	7,329.10	2,412.00	26,152.00	1,652.20
Annual Percentage Change:1960-2017	WB	6.6	1.0	6.0	0.7

TABLE 2
HISTORICAL POPULATION AND GROSS DOMESTIC PRODUCT LEVELS AND GROWTH RATES, 1960-2020: CHINA, NIGERIA, AND SOUTH KOREA

Indicator	Source	China	Nigeria	South Korea
Population Levels (millions)				
1960	WB	667	45.1	25.3
2020	WB	1402	206.1	51.3
Annual Percentage Growth (per cent):1960-2020:		1.25	2.57	1.22
Population Growth Rate (change from previous year) : 1960	WB	2.5 (1963)	2	3
1990	WB	1.5	2.6	1
2020	WB	0.3	2.5	0.1
Gross Domestic Product				
GDP per Capita: (In constant 2010 dollars): 1960	WB	191	1360	932
GDP per Capita: (In constant 2010 dollars): 2020	WB	8405.2	2273.2	28, 361.2
Annual Percentage Change in GDP per Capita: 1960-2020		6.5	0.9	5.9
GDP Level: (In billions of constant 2010 dollars):1960	WB	128.1	61.4	23.3
: 2020	WB	11785	468.6	1469
GDP (annualized growth rate):1960-2020		7.83	3.45	7.15

TABLE 3
HISTORICAL AND "COUNTERFACTUAL" LEVELS OF POPULATION AND GDP PER CAPITA IN 2020

Indicator	Source	China	Nigeria	South Korea
Population (millions):				
Historical	WB	1402	206.1	51.3
Counterfactual		3, 057.4 (1)	95.0 (2)	114.6 (1)
			93.4 (3)	
GDP per Capita (in constant 2010 dollars)				
Historical	WB	8405.2	2, 273.2	28, 361.2
Counterfactual		327.0 (1)	59,500.0 (2)	1,595.5 (1)
			42,393.0 (3)	

1. Applies Nigeria's annualized growth rates (from Table 2) to China's 1960 population and GDP per capita levels
2. Applies China's annualized growth rates (from Table 2) to Nigeria's 1960 population and GDP per capita levels
3. Applies South Korea's annualized growth rates (from Table 2) to Nigeria's 1960 population and GDP per capita levels

TABLE 4
SELECTED DEVELOPMENT INDICATORS

Indicator	Source	China			Nigeria			South Korea			Sweden		
		1991	2000	2019	1991	2000	2019	1991	2000	2019	1991	2000	2019
Share of labor Force Employed in Agriculture:	WB	59.7	50.0	25.3	50.6	48.8	35.0	14.6	10.6	5.1	3.8	2.9	1.7
Homicides, 2019 (per 100,000 population):	WB		0.5			34.5			0.6			1.1	
Vulnerable Employment, 2020 (percent of total employment):	HDR		45.4			77.6			19			6.1	
Concentration of Exports Index, 2018:	HDR		0.094			0.789			0.198			0.097	
Human Development Index, 2019:	HDR												
Index			0.761			0.539			0.916			0.945	
Country Ranking			85			161			23			7	
Urbanization Rate, 1960-2020 (percent of population):	WB	1960	1990	2020	1960	1990	2020	1960	1990	2020	1960	1990	2020
		16.2	26.0	52.0	5.4	30.0	61.4	27.7	73.8	81.4	72.5	83.1	88.0
Share of Population Living In Extreme Poverty , 1981- 2019	HDR	1981	2000	2019	1981	2000	2019	1981	2000	2019	1981	2000	2019
(living on less than $1.90 per day):		88.1	36.5	0.2	42.3	66.0	39.2	2.8	0.4	0.2	0.3	0.0	0.7
Transparency International's:	TI												
Ranking, 2020 (among 180 countries)			78			149			33			3	
Corruption Perception Index , 2018 (0=mostly corrupt, 100=			39			27			57			85	
mostly not corrupt)													

TABLE 5
DEMOGRAPHIC-RELATED STATISTICS

Indicator	Source	China			Nigeria			South Korea			Sweden		
Population: 1960-2020	OWID												
Population (annual percentage growth rate), 1960-2020			1.3			2.6			1.2			0.5	
		1960	1990	2020	1960	1990	2020	1960	1990	2020	1960	1990	2020
Population Level (millions)		660.4	1,180.0	1,402.0	45.0	95.2	206.1	25.3	42.9	51.3	7.5	8.6	10.1
Life Expectancy: 1960-2019	OWID	1960	1990	2020	1960	1990	2020	1960	1990	2020	1960	1990	2020
		43.7	69.1	76.9	37.0	45.9	54.7	55.2	71.7	83.0	73.2	77.6	82.8
Fertility Rate: 1990-2020	OWID	1960	1990	2020	1960	1990	2020	1960	1990	2020	1960	1990	2020
Births per woman		5.8	2.3	1.7	6.4	6.5	5.3	6.1	1.6	0.9	2.3	2.0	1.7
Child Mortality Rate: 1964-2019	OWID	1960	1990	2020	1960	1990	2020	1960	1990	2020	1960	1990	2020
Percent of newborns who die before the age of 5		11.8	5.4	0.8	32.3	20.9	11.7	9.2	1.5	0.3	1.7	0.7	0.3
Contraceptive Prevalence (most recent year available)	OWID		2017			2018			2018			2018	
Women, ages 15-49 (any means)			84.5			16.6			82.3			70.3	

TABLE 6
HEALTH-RELATED INDICATORS

Indicator	Source	China		Nigeria		South Korea		Sweden	
Expenditure on Health Care (per person), 2018 (current $)	WB	501		84		2453		2982	
		2000	2019	2000	2019	2000	2019	2000	2019
Health Expenditure (percent of GDP)	WB	4.5	5.4	3.2	3.9	4.0	7.6	7.4	10.9
		1990	2019	1990	2019	1990	2019	1990	2019
Immunization against DPT (% of children 12-23 months old)	WB	97	100	56	57	74	98	99	97
Child Malnutrition (% of 'stunted' children below age 5)	OWID	32.3	11.7	48.7	37.5	NA	< 2.5	NA	< 1.0
		2000-02	2016-18						

Average Protein intake (grams per person per day)	FAO	83.2	100.6	58.0	58.0	87.3	98.0	103.7	105.7
Share of Population Unable to Afford a Healthy Diet	OWID	2017		2017		2017		2017	
(because the cost exceeded 63% of household income)		17.9		89.1		1.2		0.3	
Percent of Population in 2000 & 2020 with Access to Safely	OWID	2020	2020	2000	2020	2000	2020	2000	2020
Managed: Water Services		NA	NA	13.7	21.7	97.0	99.2	99.4	99.8
Sanitation Services		13.1	70.0	21.3	30.5	75.6	100.0	93.0	95.0
Global Hunger index, 1992 and 2018	OWID	1992	2018	1992	2018	1992	2018	1992	2018
(composite of under-nourishment, child wasting, stunting and mortality),		26.4	7.6	49.5	31.1	NA	NA	NA	NA
(0 to 100, “best” to “worst”)									

TABLE 7
EDUCATION-RELATED INDICATORS

Indicator	**Source**	**China**			**Nigeria**			**South Korea**			**Sweden**		
		1979	1990	2019	1979	1990	2019	1979	1990	2019	1979	1990	2019
Public Education Expenditure (percent of GDP)	IHME	2.15	1.65	3.51	NA	NA	NA	3.02	3.04	4.33(2016)	6.37	5.21	7.57(2017)
		2019			2019			2019			2019		
Mean Years of Schooling	HDR	8.1			6.7			12.2			12.5		
Literacy Rate (percent of population aged >15 years)	HDR	96.8			62			NA			NA		
Percent of Population with at Least Some Secondary Education)	HDR	79.2			NA			86			89.5		
Percent of Primary School Teachers Trained to Teach	HDR	NA			66 (2010)			NA			NA		
Share of Youth NOT in Education, Employment, or Training	WB	NA			31.4			NA			5.5		

TABLE 8
ACCESS TO CONSUMER GOODS AND SERVICES (INCLUDING ELECTRICITY)

Indicator	**Source**	**China**		**Nigeria**		**South Korea**		**Sweden**	
Motor Vehicle Ownership (vehicles per 1000 people)	WIKI &	2014	2019	2014	2019	2014	2019	2014	2019
	NM	83	207 (2021)	31	64 (2017)	376	475	520	473
Percent of Households with:		2000	2020	2000	2020	2000	2020	2000	2020
Refrigerators	GDL	36.9	99.9	16.2	22.0 (2018)	NA	NA	NA	NA
Washing machines	GDL	52.3	97.8 (2019)	NA	NA	NA	NA	NA	NA
Televisions	GDL	93.4	96.8	27.3	49.1	NA	NA	NA	NA
Computers	GDL	19.4	60.5	1.5 (2005)	6.4	NA	NA	NA	NA
		1990	2017	1990	2017	1990	2017	1990	2017
Share of Population Using the internet (percent)	OWID	0	54.3	0	7.4	0.0	96.2	6	94.5
Access to Electricity (percent of population)	WB	2000	2019	2000	2019	2000	2019	2000	2019
		96.9	100	27.3	55.4	100	100	100	100
				82.4 (urban)	83.9 (urban)				
				4.0 (rural)	25.5 (rural)				