

Is Economic Growth and Development Realizable for Africa? – Review of Asian Countries: A Theoretical Perspective

Derrick Anquanah Cudjoe^{1,*}, He Yumei¹, Bismark Odum², Noah Kwaku Baah³

¹Economics and Management Department, Southeast University, Nanjing, China

²College of Harbor, Coastal and Offshore Engineering, Hohai University, Nanjing, China

³School of Computer Science and Engineering, Southeast University, Nanjing, China

*Corresponding author: deancudjoe@gmail.com

Received July 21, 2019; Revised August 24, 2019; Accepted September 11, 2019

Abstract There has been large a reservoir of papers spawned about African countries and the degrading but the real state of their economies. The African continent has seen under-industrialization, scaring rates of poverty, low levels of education, low levels of skilled labour force and high rates of diseases. After the overwhelmingly uproar for independence averagely 50 years ago, most countries in the continent still make ends meet under the mercy hands of the West and China. Africa has the highest poverty rate of 422,358,131 people living as of December 2018 (World Poverty Clock). The economic growth of Asia offers massive encouragement that economic growth is not a fantasy. Most countries in Asia have risen to overcome their gloomy economic situations. Countries such as Japan and South Korea have overturned war torn and hopeless economic situations into globally competitive countries. Singapore, a country without a single natural resource and with a diversity of people, has been able to achieve economic growth. China has managed to pull over 800 million people out of the grips of poverty in the past four decades, a feat which many pundits consider as a massive economic miracle. The main aim of this paper is to review the economic growth and developmental strategies of some Asian countries including Japan, South Korea, Singapore and China and in that regard make policy recommendations for sub-Saharan Africa. The regional choice is because Asia is indisputably the fastest growing economic region in the world contemporarily, both in terms of GDP and Purchasing Power Parity (PPP). In addition, the choice for the selected countries is because the countries under consideration were in a way or the other once in an economic crisis just as many countries in sub-Saharan Africa.

Keywords: *economic growth, development, sub-Saharan Africa, Japan, South Korea, Singapore, China*

Cite This Article: Derrick Anquanah Cudjoe, He Yumei, Bismark Odum and Noah Kwaku Baah, “Is Economic Growth and Development Realizable for Africa? – Review of Asian Countries: A Theoretical Perspective.” *World Journal of Social Sciences and Humanities*, vol. 5, no. 3 (2019): 151-159. doi: 10.12691/wjssh-5-3-5.

1. Introduction

The thesis of economic growth and development is nothing new in the arena of economics. An organization like the International Monetary Fund, the World Bank among others have used certain indices to determine which countries have attained economic growth and which have not. In spite of the fact that this concept of economic growth is far from being contemporary, its achievement has eluded countries in Africa in similar fashion as urine has eluded a hen or a cock. The African continent, irrespective of the humongous amount of natural resources endowment, have failed to utilize them in an economically beneficial manner (a feat that most have tagged the resource curse of Africa). Economic growth appears more imaginary and virtual to the African continent than it is real. Even though countries such as South Africa for instance, appeared to have been making headways in the

post-apartheid periods, its growth rate has slowed down since 2007. Namibia and Botswana, which are in the southern part of Africa, have shown positive signs of gradual improvements in their respective economies in recent years with Botswana achieving an all-time high GDP of \$17.41bn until 2017.

The report has it that sub-Saharan Africa has the lowest rates of education. Almost 60 percent of the children between the ages of 15 years and 17 years are out of school. About one-fifth of children between the ages of 6 years and 11 years are not enrolled in school (UNESCO Institute for Statistics, UIS). Literacy rate is lowest in less developed countries according to reports by UNICEF DATA. University education has been considered a dream in most African countries (Dahir, 2017). In fact, Dahir asserted in his article “Africa has two few universities for its fast growing population” that Africa has only about 740 universities in its top ten most populous nations.

The problems of Africa proves very monumental than it appears to be. The young people are moving abroad in

search of greener pastures, poverty alleviation has been difficult to achieve, political instability is yet high, and educational attainment is nothing to write home about, technological advancement and innovativeness is very far away from the best, and maternal and infant mortality is yet appreciably high. The entire sub-Saharan Africa recorded a real GDP of approximately \$1.75 trillion, an amount that is much lower than the estimated \$3.90 trillion in 2017 recorded by a single country Germany that ranks as the fourth largest economy. The figures were drawn from World Bank Dataset.

Regardless, the sub-Saharan Africa has in recent decades, made strides towards growth and development. In the face of the commodity prices crash in 2016 that slashed growth to 1.5 percent, the lowest figure in over 20 years, the estimated growth for 2017 was 2.6 percent. According to the World Bank, the sub-Sahara African is bound to achieve an estimated growth of 3.7 percent by 2020. Figures disclose that economic growth in Africa is realizable. Notwithstanding, the entire sub-Saharan Africa is below most single countries in Europe, America and Asia respective to economic indicators such as GDP, GDP per capita, innovativeness, technology levels and literacy rates.

The youth and adult literacy rates for the region stood at 75.31% and 64.35% respectively in 2016 (World Bank Dataset). The sub-Saharan Africa is the region that includes countries with the lowest GDP and the lowest GDP per capita in the world. According to the 2017-2018 Global Competitiveness Index, the long run competitiveness and buoyancy of the sub-Saharan Africa hinges on continued investment in infrastructural facilities, investment in human capital and adoption of technology. The continent continues to experience deteriorating macroeconomic environment arising from political instability, low-level institutional performance and financial market inefficiencies. These factors continually render the continent volatile for investment and progress.

The figures below shows the economic indicators of the sub-Saharan Africa. The indicators includes real GDP, real GDP per capita, GDP growth trends and industrial contributions to GDP.

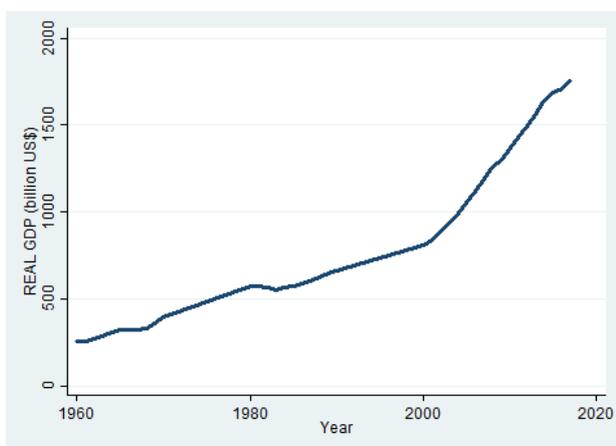


Figure 1. Real GDP Trend (1960 to 2017)

The first section discusses Japan's economic growth and development strategies; the second discusses the strategies adopted by South Korea in its economic advancement. Section three looks at Singapore's strategies

for economic growth even in the absence of a single natural resource. Section four focuses on China's case study for economic growth and section five draws conclusions by making policy recommendations to the governments, opinion leaders and stakeholders of sub-Saharan African countries.

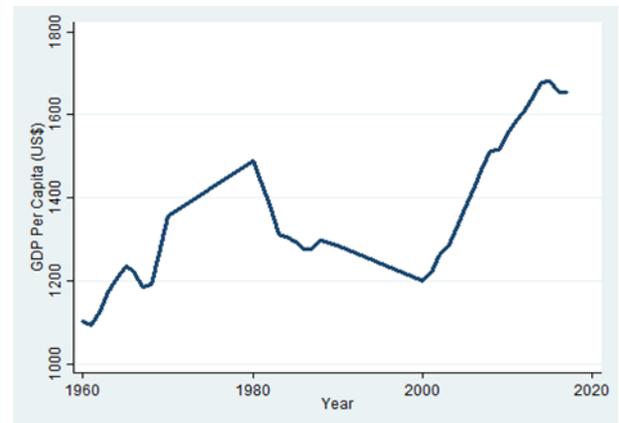


Figure 2. Real GDP Per capita Trend (1960 to 2017)

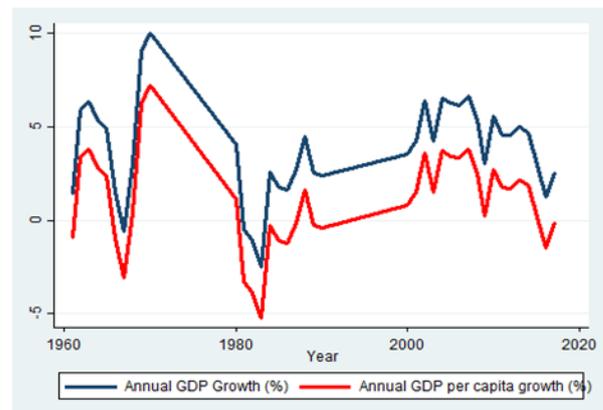


Figure 3. Annual GDP growth (1960 to 2017)

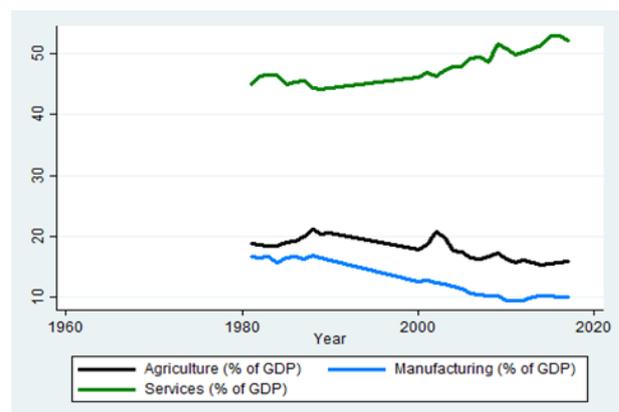


Figure 4. Percentage Contributions of Various Sectors to GDP (1960-2017)

2. Strategic Policy Lessons from Japan's Economic Growth and Development

The economy of Japan was in a gloomy state and almost completely shattered after the World War II that

lasted from 1939 to 1945. Industrial infrastructures and transportations systems were utterly ruined. After the World War II, Japan was under the leadership of Nobusuke Kishi (a man who was put in charge by the support of the U.S with the belief that he was the right person to lead the country into pro-American transformation). Kishi's reign did not go down well with many as the country was bitterly divided and lacked clear and certain future.

Frank B. Gibney (Author, *The Pacific Century*) once said this of Japan under the reign of Nobusuke Kishi. "There was a lot confusion about where the country was going. Management was going one way and labour was going another. There were vicious protracted strikes in Japan's major industries (Toyota, Nissan etc.) There was a very active political left. Kishi was a democrat and despised the public all over he asserted."

Post-war protests and student movements further characterized Kishi's reign, which was purely anti-government. It was a time when the people wanted to ensure that Japan would never be embroiled in another war. "We were full of passionate anger. We wanted to destroy all vestiges of pre-war Japan from the family structure right up to the society as a whole" (Nagisa Oshima, Film Director).

Japan's economic rebirth, stabilization and growth was possible thanks to the efforts of Ikeda Hayato who served in various ministerial positions under Prime Minister Yoshinda Shigeru before he eventually became a Prime Minister himself in 1960. As the minister of finance under Prime Minister Yoshinda, he resolved to work with the deflationary policies recommended by Joseph Dodge (a Detroit banker) sent by the U.S to study the difficult economic situation of Japan. He also played a major role in the negotiations of peace treaty between U.S and Japan. He later became the minister for International Trade and Industry in October 1952. This ministry played a pivotal role in Japan's economic growth as the ministry formed a synergy between the private sector and the government to increase productivity.

The ministry focused on high technology products that was meant for the consumption of both the domestic and foreign markets.

The production of high quality technological products necessitated the demand for stable and economically advanced trading partners. The possibility of Japan's production of high quality technology products stemmed from the country's technology importation, which placed under the control of the ministry of international trade and industry. The high technology enabled Japan to resort to shipbuilding, automobiles, electronics, steel and precision optical equipment. Japan boasts as the world's second largest automobile manufacturer in the world as at 2018 (CEOWORLD Magazine) and the world's third largest shipbuilding country in 2018 behind South Korea and China (World Maritime News).

Besides the monumental contributions of the ministry of international trade and industry and the high technology in Japan's economic growth, the other game-changer was the "income-doubling plan" adopted by Ikeda Hayato in 1960. The objective of the plan was create a consumer economy in Japan. The plan was to double the income levels of Japanese, double gross national product, achieve full employment by means of increasing employment

opportunities and to raise the standard of living of the Japanese. The plan consolidated the responsibility of the government for the welfare of the society, formal education and vocational training.

The income-doubling plan proved more successful than was initially expected. The expected target for the plan was for it to be reached in a period of ten (10) years but was actually fulfilled in a little over four years. The projected economic growth resulting from the plan was 9 percent for the first three (3) years; however, the economy grew at the rate of 10 percent. The government's responsibility for education increased the literacy rate of the country and provided the needed labour force for the high technology products manufacturing. Japan continues to be a country with high adult literacy rate, with the current adult literacy rate of 99 percent on average as at 2018.

Japan is ranked among the most innovative countries in the world, occupying the ninth position in 2019 according to Bloomberg. It took the ninth position for the most competitive countries in the world in 2017-2018 according to the 2017-2018 Global Competitiveness Index report. Japan is one of the developed economies of the world and part of the Group of seven (G7) countries, including Canada, France, Germany, Italy, United Kingdom and United States. The G7 countries are the seven largest IMF- described advanced economies in the world, representing 58% of the global net wealth.

The graphs displayed below reports the state of the Japanese economy from 1960 to 1970 and that of 1980.

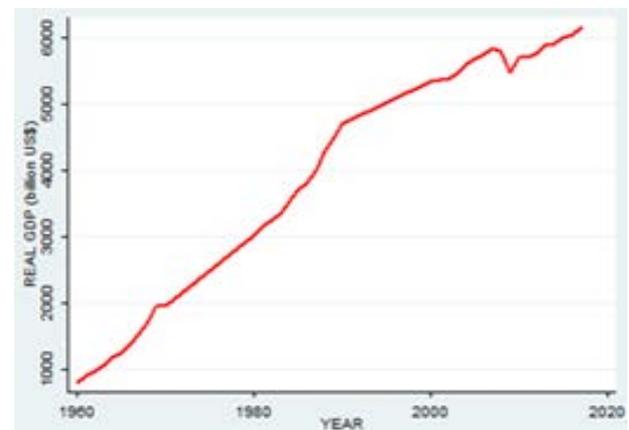


Figure 5. Real GDP Trend (1960 to 2017)

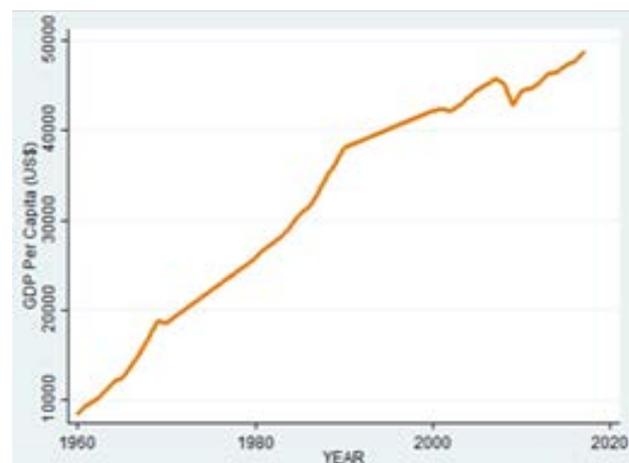


Figure 6. Real GDP Per capita Trend (1960 to 2017)

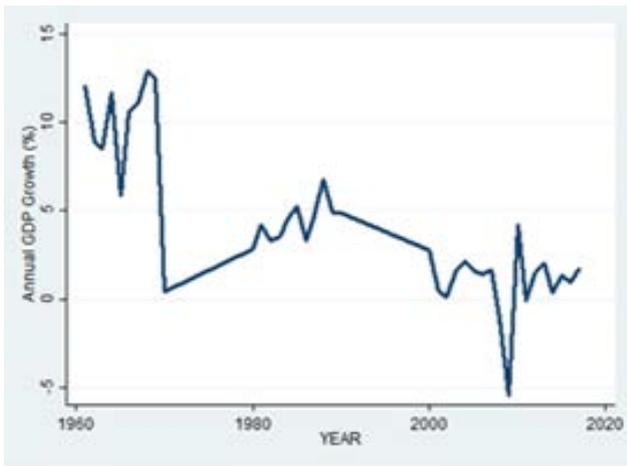


Figure 7. Annual GDP growth (1960 to 2017)

The derived implication from the figures above clearly indicates that Japan's post world war II growth policies and strategies as explained above hugely paid off. The real GDP continually increased 44.31 billion in 1960 to US \$212.61 billion in 1970, and by 1980, the real GDP had reached trillions. The real GDP per capita that was US \$479 in 1960 reached US \$2,037.56 in 1970 and by 1980, had reached US\$ 9,465.38. Japan's real GDP as at the end of 2017 was US \$4.87 trillion with a nominal GDP per capita of US \$38,428.10 at the end of 2017. Japan's economic miracle and success became a source of encouragement for most countries in Asia that sought to grow their economies.

3. Strategic Policy Lessons from South Korea's Economic Growth and Development

Economic growth is dependent on the character of the nation (Edmund Phelps – 2006 Nobel Prize Laureate in Economics). The turnaround in the economic situation of South Korea is because of substantive contributions of all sectors of the economy. South Korea (otherwise known as the Republic of Korea) suffered a lot casualties in the aftermath of the Korean War that lasted between (June 1950 and July 1953). South Korea in similar fashion as North Korea incurred mammoth infrastructural and industrial facilities losses.

According to the Economic Cooperation Administration (ECA) Report of October 1950, the ratio of destruction for some major industries during first four months of the war were 70% for chemical Industry, 40% for agricultural machinery industry, 70% for textile industry and 10% for rubber industry. The statistics by the Korea Transportation Ministry disclosed that an average of 46.9% of railway, 1,453 bridges (making a total of 49km), 600 thousand units of housing and 1,656 roads (totaling 500km) were destroyed.

The mining and production industries also suffered a great deal due to the war and power generation plummeted due to consequential impacts on power plants. This affected production of commodities and led to inflation in the countries. Despite the ill effects of the war, South Korea has gone through a reparation period and got its

economy working again. Many pundits wrote-off the economic resuscitation of the South Korean economy in spite of the hopeless nature of comments from some economic figures. "This country has no future. The country will not be restored even after a hundred years" (Douglas MacArthur). "How can a rose blossom from a garbage dump?" (Vengalil Menon – Head of United Nations (UN) Special Delegation).

South Korea, after being written-off has arisen to be the fourth largest economy in Asia as of the first quarter of 2019. It is considered the 15th largest economy in the world in terms of Nominal GDP and 12th in terms of PPP. South Korea is world's eighth largest exporter as at 2019 and the world's largest shipbuilder as at 2018 (World Maritime News). It is the world's fifth biggest automobile manufacturer (David Gorton, Investopedia) and boasts one of the world's biggest automobile assembly plant (Hyundai Motors). It boasts as the home of the world's biggest electronics manufacturing firm: Samsung electronics and not only that but also as the world's biggest producer of computer memory chips.

With the country's scant natural resource endowments, many saw its growth as a miracle on the Han River. "Korea was very poor. All destroyed. We had to fight for the liberty and the democracy of the Republic of Korea" (Raul Martinez Espinosa – Columbian General, Korean War Veteran). The South Korean case study shows that without adventure, there can be no growth. Indeed, the confidence that anything is possible, allows one to climb out of even the deepest abyss of despair.

Korea recognized that it had to restructure and reform some of its policies and industries and sectors and it did that aggressively and forcefully, and provided leadership in that respect. It did not wait for the rest of the world to make it happen (James W. Adams, Vice President of World Bank). Amongst the structural changes made were investment in human resource through education, innovation and technological advancement and economic planning.

On education and human capital investment, (Ju-Ho Lee – Professor in Labour Economics, Korea Development Institute) said "Although Korea began the process of industrialization much later than the West, Korea has simultaneously achieved astonishing economic development and democratic political system thanks mainly to its investment in people."

Doing the busy periods of transformation and revamping, education became the nation's priority (this was accompanied by the common axiom "study hard and succeed, that's the only way to live with human dignity"). Compulsory primary and middle school education was implemented.

The vocational education sector- including textile, shoemaking and hairdressing was developed and strengthened.

There was investment in new and strategic industries. This was a resultant effect of the collaborative and commendable efforts of the Economic Planning Board that was set up for planning economic growth strategies and allocating budgets. "We sought to industrialize the structure of the national economy with manufacturing at its heart (Park Tae-Jun, Former Chairman- Pohang Iron and Steel Company). These industries included steel, shipbuilding, automobiles, petrochemicals and semi-conductors.

Regarding innovation and information technology, (Sungchul Chun- Professor in Science and Technology- Korea University of Science and Technology) asserted, “It took mainly 30 years for Korea to emerge as a major investor in research and development.” Korea has gone through an amazingly rapid and successful technological transformation. This is fabulous!” (Alvin Toffler-Futurist). Korea is one of the early countries to use the internet and has a strong history of innovation in technology. The foresightedness of the government gave it the number one position in broad-band wire” (Eric Schmidt, Chief Executive Officer, Google Inc.). Korea chalked huge success between the periods of 1960 to 1984 reflecting in its GDP and key industrial production. South Korea is ranked as the world’s most innovative country in 2019 (Bloomberg).

The figures below gives a pictorial account of South Korea’s real GDP and key industrial contributions as a percentage of GDP between 1960 and 2017.

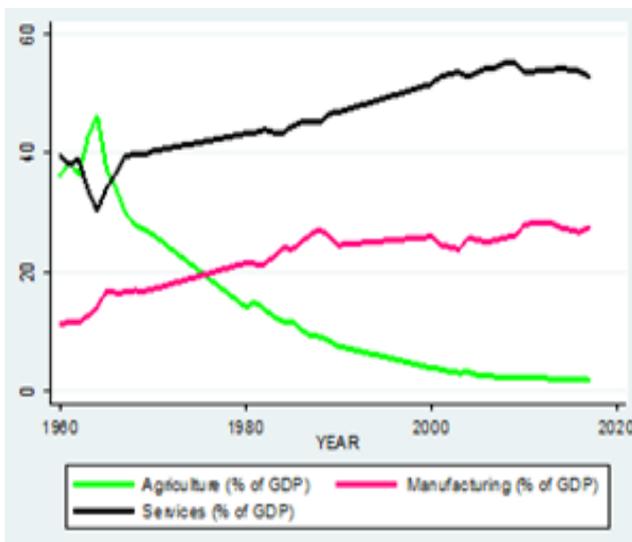


Figure 8. Percentage Contributions of Various Sectors to GDP (1960-2017)

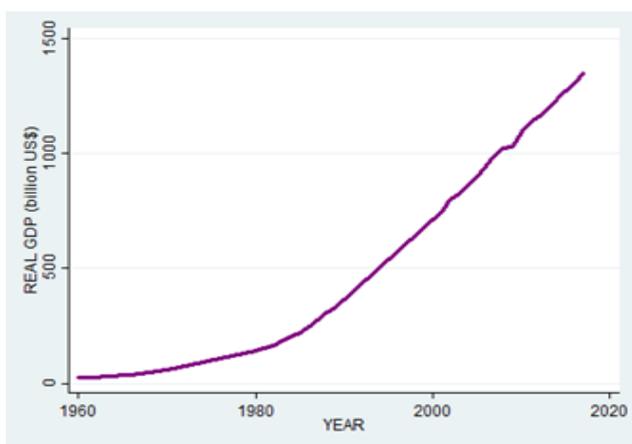


Figure 9. Real GDP Trend (1960 to 2017)

The figure at the extreme left reveals the industrial contributions to GDP from the period of 1960 to 2017, the figure in the middle shows the upward trend of the real GDP from 1960 to 2017 and the figure at the extreme right shows the annual GDP growth from 1960 to 2017.

It is clearly seen from the figures that the post war growth strategies and policy implementation by South

Korea played a key role in the economic upsurge of the country. The country achieved increasing growth as reflected in the real GDP values shown in the middle figure above. The country had a real GDP of US \$204.71 billion as at 1984 as against the US \$23.61 billion reported in 1960. GDP per capita had grown from US \$944.29 in 1960 to US \$5066.23 in 1984. The Republic of Korea as at the end of 2017 had a real GDP of US \$1.35 trillion and a GDP per capita of US \$26,152.03.

As one of the poorest countries once reported in the world, Korea has built economic development from the ruins of war. The Korean economy invested ardently in education, resorted to adoption of innovation and information technology. The maximal role of the devoted sacrifice of the people towards the development agenda is commendable.

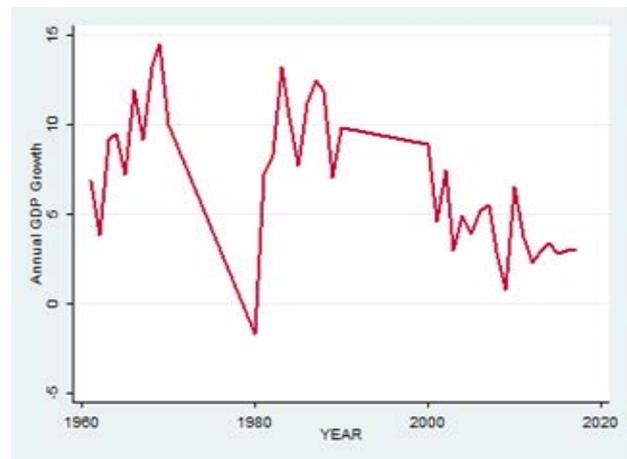


Figure 10. Annual GDP growth (1960 to 2017)

4. Strategic Success Lessons from Singapore’s Economic Growth and Development

Singapore is a heterogeneous environment, including Chinese, Malays, Indians and many religions being practiced. The success story of Singapore makes more tangible the fact that the concept of economic growth and development is not an illusion. Singapore, a city-state with no natural resource endowment has risen from a state of a third world to that of a first world. Singapore is recognized as one of the countries with high standards of living. It is a country with organized, stable and efficient government. It is a place to easily commence and run a business venture. Singapore until 2010 had the largest port in the world. Exports in electronic appliances, chemicals and services are major contributors to the GDP of the country. From 1960 to 2017, services have contributed over 60% of the country’s GDP on average. In 2017 alone, services contributed 70.44% on average while manufacturing made up 17.97% of GDP (World Bank).

Singapore is a clean society without corruption. The reason why Singapore has become such a clean society is by conscientious efforts of leadership and past leadership of the country. “I am thinking of Lee Kuan Yew in the first place to have wipe out all possible stains of malpractices in administration and in businesses to see to

it that the administration and business sectors are as clean as possible. The streets of Singapore are safe places day or night” (Finn Bergstrand, Swedish Ambassador in Singapore).

Beneath the substantial but enviable economic pedestal achieved lies strong and resilient growth strategies. Without the blessing of a single natural resource, the government of Singapore after achieving independence from Britain in 1963 and breaking away from Malaysia in 1965 saw the only resource available to it for growth in the human resource. Resource is a higher premium so we must develop our human resource. “Resources are spent in creating a viable education and school system to help those who are not quick in learning” (Professor Chan Heng Chee-Association of Southeast Asian Nations).

(Professor Lee Tsao Yuan, Deputy Director, The Institute of Policy Studies) outlined three essential factors that accounted for Singapore’s economic success as follows. First, though the country has a small population and therefore did not have the required market size for development, it took advantage of what the world would have to offer in terms of market, technology and capital. It saw the need to export its goods: a feat that takes up the lion’s share of the country’s income generation.

Second, without a single resource, the nation realized that human development in education was the most important and fundamental factor in its economic growth. In the 1960s and early 1970s, the emphasis was on primary education and the objective was to educate the mass of the people especially the young people. When that was largely fulfilled, the emphasis then switched to the secondary and technical education. From the late 1980s and 1990s and to date, the emphasis has been on tertiary education and mostly specialist education.

Third, government policy and government spending. The government had at the very heart, the need for prudent spending in all of its aspects. This was based on the underlying notion that one cannot get away with borrowing and borrowing and borrowing.

“They realized that the economy of Singapore will be much more developed if they concentrated on trade impossibilities for exports not like many poor countries in the past who decided to change their economies to substitute imports by their own domestic industries. Singapore have always been outward looking” (Finn Bergstrand, Swedish Ambassador in Singapore).

“The sane environment and liberal approach is substituted by disciplined culture- legislations against chewing gums, narcotics, no selling of muffins or heroines, regulations against ethnicity. The people display morale and energy in work ethics” (Catherine Lim, Singaporean Fiction Author).

Singapore had as at 1980, youth literacy rate of 96.29% and an adult literacy rate of 82.91%. In 2016, Youth literacy rate was reported to be 99.93% and adult literacy rate at 97.05% (World Bank Dataset).

The figure at the extreme right reveals the industrial contributions to GDP from the period of 1960 to 2017, the figure at the extreme left shows the upward trend of the real GDP from 1960 to 2017 and the figure in the middle shows the annual GDP growth from 1960 to 2017.

Singapore has built a formidable tourism sector, attracting thousands and millions of tourists in a year. In 2017, the country recorded 17.4 million tourists with

tourism receipts amounting to \$26.8 billion (Singapore Tourism Board).

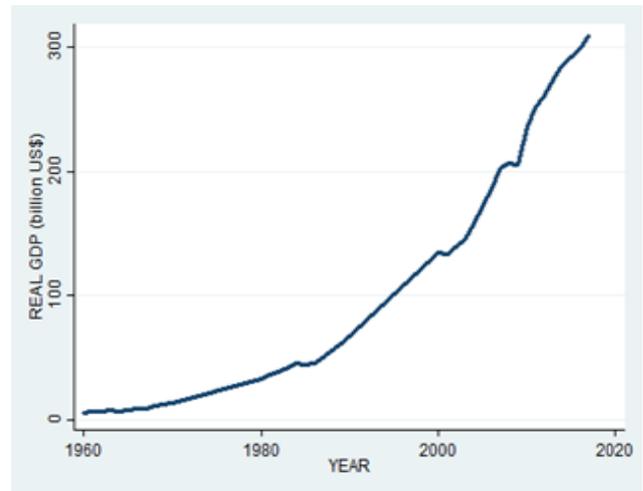


Figure 11. Real GDP Trend (1960 to 2017)

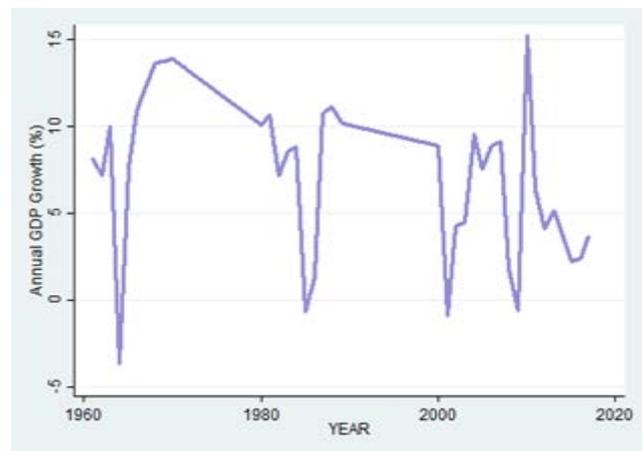


Figure 12. Annual GDP growth (1960 to 2017)

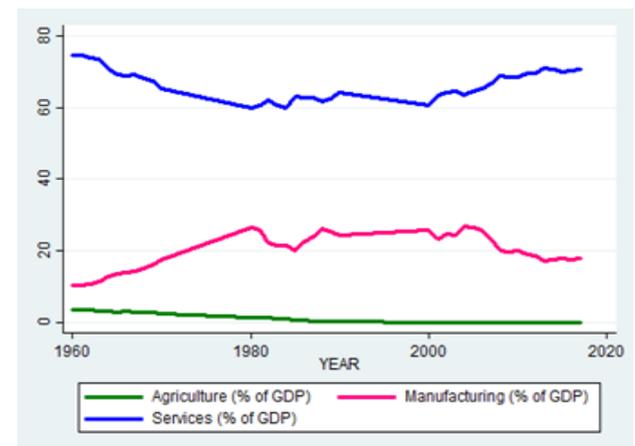


Figure 13. Percentage Contributions of Various Sectors to GDP (1960-2017)

In Singapore, the leadership considers the people as rational and the people play their part of the bargain as responsive and adhering agents to the government policies. Professor Chan Heng Chee puts it more succinctly as “I think the remarkable thing about Singapore is that the political leadership has always gone to the people, treated

them as rational people. To say this is the way we should do things and this are the reasons.”

Singapore was the third most competitive country in 2017-2018, only behind Switzerland and U.S according to the 2017-2018 Global Competitiveness Index report.

5. Strategic Success Lessons from China's Economic Rise and Development

The People's Republic of China was formed in 1949, a period in which the Communist Party took reigns. This period signified the commencement of the country's economic recovery and what many would later, (as it has been), describe as a growth miracle. This was a new China under the auspices of Chairman Mao Zedong. A Five-Year economic development plan was initiated and completed from 1949 to 1957.

This marked the establishment of industries mainly the steel industries. The periods of 1966 to 1976 were remarkable times as they marked the cultural revolution that lasted for 10 years after the failures of the Great Leap Forward policy that aimed that transforming China from an agrarian economy to a socialist one through collectivization and rapid industrialization. The revolution had a deep and monumental toll on China both politically and economic wise.

After Chairman Mao's reign, saw China in the steering wheels of Deng Xiaoping, from 1978 to 1992. The latter parts of 1978 was another turning point in China's quest for economic growth. It was the period for Reform and Opening Up policy, which is undoubtedly the mediator of China's rapid economic growth.

Deng Xiaoping launched the four modernizations in December 1978. The focus of the four modernizations encompassed Agriculture, Industry, Science and Technology and Defense.

5.1. Agriculture

China's reform begun with rural areas through the Household Responsibility System (HRS). This was a system and mechanism where communally owned lands were subdivided into family plots. This move resulted in increased efficiency as the productive capacities of farmers surged up north. In the system, farmers had an agreement with the government that stated how much was expected of them if they produced on a minimal scale. The government clearly indicated that everything more out of their total produce was left to the free market. These strategies motivated and induced the farmers to produce more. Farmers, as a result of the gains made, leased more lands in a bid to expand their farms and owned their businesses.

In such times, the rational economic man and the invisible hand proposition of Adam Smith came into play. The rational economics proposes that humans are rational and have the ability to make sound judgements to their subjectively desired ends. The invisible hand is real and worked in the HRS of China. It is the self-regulating nature of the market place in determining how resources are allocated based on individuals acting in their own self-interest. During these periods, the country realized an

increase in the annual output of grains. By 1984, output of grains was 407 million tons from a figure of less than 300 million tons hitherto 1978 (Zhang 2011).

5.2. Industrial Modernization

The underlying premise of this modernization was when Deng Xiaoping visited Japan in October 1978. On his return to China, he said, "there is the need to learn from great, intelligent and brave Japanese people in order to develop." The underlying factor to this assertion was the high technology and high industrialization in Japan.

Industrialization is very important for every country and very helpful for the growth of low and middle-income countries. In the industrial modernization approach, China adopted import substitution industrialization and export-oriented industrialization. China's view was that most developing countries remain poor because they do not add value or produce consumer goods and hence have to imports all goods.

The justification for import substitution industrialization is infant industry argument: countries may have the potential comparative advantage in some industries, but these industries cannot initially compete with well-established industries in other countries. China also adopted the export-oriented industrialization as was done by some Asian countries (South Korea, Singapore, Hong Kong, Taiwan, Malaysia, Thailand and Indonesia) to promote exports in targeted industries. In 2004, China surpassed Japan as the leading exporter in Asia and in 2009, surpassed Japan as the leading exporter in the World.

For a country to build industrialization, capital is a fundamental factor. Even though China was poor, she used Foreign Direct Investment (FDI) as a means of accumulating capital. By mid-1990s, China became the second largest recipient of FDI in the world (Wang 2002). What accounted for and continues to account for China's FDI attractions were low cost labour force, huge domestic market, political stability and infrastructure. In 2010, China surpassed United States (U.S) to become the largest manufacturing country in the world. In the same year, China overtook Japan as the world's second largest economy after Japan held the position for 40 years.

5.3. Science and Technology

China realized that the progress and sustainability of industrialization requires science and technology and endeavoured to gear her education in that direction. According to Statista, China was the country with the biggest number of Science, Technology, Engineering and Mathematics (STEM) graduates, a figure of 4.7 million in 2016.

Technological innovation requires huge investment in Research and Development (R&D). Over the years, China's expenditure on R&D have considerably increased year-on-year basis according to (China Statistical Yearbook 2018). In 2017, China's expenditure on R&D was 17606.1. This value was an increase in the amount spent on R&D in 2016 that was 15676.7 and 11846.6 in 2013. All amounts with respect to R&D expenditure were quoted in (100 million yuan). Scientific papers issued (in 10000 pieces) were 170 in 2017. Publications on science and technology alone were 54204. Through R&D, China

has gained potency in competing with other advanced countries in terms of improvement in production processes and new inventions.

Dr. Justin Yifu Lin (Former Senior Vice President and Chief Economist, World Bank), in a presentation said, in the pursuit of technology, China adopted the advantage of backwardness. This means China decided to learn from other countries that were making strides in technology.

5.4. Defense Modernization

The modernizations of the defense in China under Deng Xiaoping's regime happened under three underpinning factors. The first was to disengage the military from civilian political affairs and ensure that it resuscitates from the inactivity it had been through prior to the cultural revolution. Second, a review of the military education, training, organization and personnel policies in improving combat effectiveness in warfare of combined-arms. The enactment of the New Military Law in 1984 introduced a revision in the strategies, tactics and doctrines of the defense.

Third was to establish a military system capable of independently maintaining a modern defense force. Through that China has become very competitive in the armed market of the world and the defense is maturing into a global force.

China's has achieved continual economic growth from 1978 until now even though the growth rate has plummeted in recent years. In terms of education, China has done remarkably well. The country had a youth literacy rate of 99.64% and an adult literacy level of 95.12% as at the end of 2010. The Table 1 and Table 2 below provide a representation of the economic indicators of China from 1960 until 2017. Among the economic indicators, include real GDP, real GDP per capita, annual GDP growth and the contributions of the agriculture, manufacturing and services industries to GDP.

Table 1. Economic Indicators of China (1960 – 1990)

Year	Real GDP (billion US\$)	Real GDP Per Capita (US\$)	Annual GDP Growth (%)	Agriculture (% of GDP)
1960	128	192	-	23.18
1961	94	141	-27.27	35.79
1962	88	132	-5.58	38.98
1963	97	142	10.3	39.85
1964	115	164	18.18	38.03
1965	134	187	19.95	37.55
1966	149	202	10.65	37.18
1967	140	185	-5.77	39.81
1968	134	173	-4.10	41.64
1969	157	197	19.94	37.52
1970	187	228	19.30	34.80
1980	342	348	7.81	29.63
1981	360	361	5.17	31.32
1982	392	388	8.93	32.79
1983	434	424	10.84	32.57
1984	500	481	15.14	31.54
1985	567	539	13.44	27.93
1986	617	578	8.94	26.64
1987	689	635	11.69	26.32
1988	767	696	11.23	25.24
1989	799	714	4.19	24.61
1990	830	731	3.91	26.58

Table 2. Economic Indicators of China (2000 – 2017)

Year	Real GDP (billion US\$)	Real GDP Per Capita (US\$)	Annual GDP Growth (%)	Agriculture (% of GDP)	Manufacturing (% of GDP)	Services (% of GDP)
2000	2238	1772	8.49	14.68	-	-
2001	2424	1906	8.33	13.98	-	-
2002	2645	2066	9.13	13.30	-	-
2003	2911	2259	10.04	12.35	-	-
2004	3205	2473	10.11	12.92	31.98	41.18
2005	3570	2738	11.40	11.64	32.09	41.33
2006	4024	3069	12.72	10.63	32.45	41.82
2007	4600	3488	14.23	10.28	32.37	42.86
2008	5041	3805	9.65	10.25	32.09	42.82
2009	5515	4142	9.40	9.79	31.55	44.33
2010	6101	4561	10.64	9.53	31.54	44.07
2011	6683	4972	9.54	9.43	31.98	44.16
2012	7208	5336	7.86	9.42	31.42	45.30
2013	7767	5722	7.76	9.30	30.55	46.70
2014	8334	6108	7.30	9.06	30.78	47.84
2015	8909	6497	6.90	8.83	29.38	50.24
2016	9506	6894	6.70	8.56	28.82	51.56
2017	10162	7329	6.90	7.92	29.34	51.63

6. Conclusion and Recommendations

Economic growth is not a fantasy and can be achieved by the sub-Saharan Africa. It is noteworthy that looking at the growth strategies adopted by the countries discussed in the paper and even out the domain of this paper, economic growth takes rigorous measures and clearly delineated developmental policies and framework. However, the sad note is that leaders of Africa do not have a clear-cut developmental trajectory on which they can align their leadership. The failure to carve a strategic developmental path for their respective nations has cost respective African nations the needed economic growth.

Africa is more resolved to designing manifestoes, the content of which cannot be fulfilled. The commonest economic growth strategy that runs through the development of the countries discussed above is leadership. Leaders are the brains that underpins strategies needed for growth. When a leader possesses critical policies and strategies for economic growth, the entire nation would dance to such drumbeat. Leaders with right policies for economic growth have eluded sub-Saharan Africa and leadership is one of core issues that must be addressed for the region to see economic growth. Human capital development is the other factor that must be addressed in the sub-Saharan Africa.

Education is key to every country's economic growth. A country like Singapore realized economic growth largely through educating her citizens. In this 21st century, literacy rates and school enrolment is still low in the region of Africa compared to other regions in the world. The next thing that cuts across the countries whose growth strategies discussed above is technology. Technology's role in any country's development cannot be downplayed. All countries flying high on top of the ladder of economic growth are innovative

countries. It is to be emphasized that technological adoption by a country moves hand-in-hand with the country's education. The higher the educated human resource of a country, the more likely it is to be innovative.

The noteworthy subject is that economic performance is composed of three fundamental principles and codes – formal rules, informal values and the implementation mechanisms. These three key codes are unique to every continent and country. Thus, mimicking in exactitude what another country or continent has done may not yield the desired results. Respective countries in sub-Saharan Africa must carve their own unique path in alignment to these three key codes. The growth strategies discussed above for the selected countries were designed to suit the individual country's economic modules. And Africa must work to design their own growth modules.

Acknowledgements

My deepest and sincerest gratitude goes to my academic advisor and supervisor (Professor He Yumei) who is an Associate Professor of the School of Economics and Management, Faculty of International Trade at the Southeast University, China, Nanjing. Her door of assistance has always been opened to me. I would also like to thank my co-authors who supported in making this work possible.

References

- [1] Lee, Kuan Yew. 2000. *From Third World to First: The Singapore Story 1965-2000*. Singapore: Times Media Private Limited.
- [2] Economic Development Board. 2002. *Heart Work*. Singapore: Economic Development Board.
- [3] Baker, Jim. 2000. *Crossroads: A Popular History of Malaysia and Singapore*. Singapore: Times Media Private Limited.
- [4] Krugman, P. (1994). The myth of Asia's miracle. *Foreign Affairs*, 73 (6), pp. 62-78. ISSN 0015-7120.
- [5] Abeyasinghe, T. & Choy, K.M. (2007). *The Singapore economy: an econometric perspective*. Taylor & Francis.
- [6] Connolly, M. & Kei-Mu Y. (2008). How Much of South Korea's Growth Miracle Can Be Explained by Trade Policy? Working Paper 2008-23, <http://www.frbsf.org/publications/economics/papers/2008/wp08-23bk.pdf>.
- [7] Kim, Hayam & Heo, Uk. (2017). Comparative Analysis of Economic Development in South Korea and Taiwan: Lessons for Other Developing Countries. *Asian Perspective*. 41.
- [8] Caves, Richard and Masu Uekusa. 1976. *Industrial Organization in Japan*. Brookings Institution, Washington, D.C.
- [9] Tonogi, A. (2017). Economic Growth Analysis of Japan by Dynamic General Equilibrium Model with R&D Investment, Policy Research Institute, Ministry of Finance, Japan, *Public Policy Review*, Vol.13, No.3, November 2017, pp. 207-238.
- [10] Sakoh, K. (1984). JAPANESE ECONOMIC SUCCESS: INDUSTRIAL POLICY OR FREE MARKET? *Gato Journal*, vol.4, No.2, pp. 521-542.
- [11] Japan Development Bank. *Facts and Figures About the Japan Development Bank, 1981 and 1984*.
- [12] World Bank, *China Overview*, March 28, 2017, available at <http://www.worldbank.org/en/country/china/overview>.
- [13] Morrison, W. M. (2018). *China's Economic Rise: History, Trends, Challenges, and Implications for the United States*, Congressional Research Service, 7-5700, www.crs.gov, RL33534.
- [14] Wang, H.C. and Wu, D.C. (2015) An Explanation for China's Economic Growth: Expenditure on R&D Promotes Economic Growth. *Journal of Service Science and Management*, 8, 809-816.
- [15] World Poverty Clock (2018). Available at <https://worldpoverty.io/index.html>.
- [16] UNESCO, Institute of Statistics (UIS). Available at uis.unesco.org/
- [17] UNICEF Data. Available at <https://data.unicef.org>.
- [18] Dahir, A. L. (2017). Africa has too few universities for its fast growing population. Available at <https://qz.com/africa/878513/university-education-is-still-a-dream-many-in-africa-are-yet-to-attain/>.
- [19] World Economic Forum/ Global Competitiveness Index (2017-2018).
- [20] The World Bank, (2019). DataBank "World Development Indicators". Available online at <https://data.worldbank.org/> (accessed on April 10, 2019).
- [21] South Korea, *World Maritime News* (2018). Available at <https://worldmaritimeneeds.com/archives/tag/south-korea/>
- [22] CEOWORLD Magazine. Available at <https://ceoworld.biz/>
- [23] *These Are the World's Most Innovative Countries – Bloomberg*. Available at <https://www.bloomberg.com/news/articles/2019-01-22/germany-nearly-catches-korea-as-innovation-champ-u-s-rebounds>
- [24] National Bureau of Statistics of China. Available at www.stats.gov.cn/english/Statisticaldata/AnnualData/.

