Appendix I. CBN's Policy Reaction

Nigeria: GMM Estimation Outcome

	s=-4	s=-3	s=-2	s=-1	s=0	s=1	s=2	s=3	s=4
ρ	0.88512 **	0.897156 **	0.889117 **	0.879337 **	0.880801 **	0.877563 **	0.865405 **	0.891684 **	0.864922 **
	(0.0706)	(0.0634)	(0.0657)	(0.0614)	(0.064)	(0.0655)	(0.0661)	(0.0652)	(0.0736)
C	-9.22961	8.600773	4.763641	-10.79504	5.061956	-3.384335	-7.279482	-17.87078	-15.97449
	(23.5213)	(20.4287)	(23.4746)	(19.6217)	(19.4846)	(18.6001)	(18.9702)	(26.4597)	(24.7135)
θ	-1.64107	-0.714569	-0.17043	1.435293 #	0.391457	-0.219106	0.418564	2.038961	-1.074066
	(1.408)	(0.8573)	(0.7874)	(0.8845)	(1.1014)	(0.7496)	(0.6678)	(1.5209)	(1.0841)
γ	-1.43708 #	-1.257047 #	-1.218588 #	-1.238564 *	-1.160297 #	-1.326772 *	-1.379311 **	-1.647607 *	-1.450314 *
	(0.9)	(0.8236)	(0.7599)	(0.6857)	(0.7193)	(0.7229)	(0.6793)	(0.9478)	(0.7974)
δ	0.30589	0.084833	0.112089	0.228374	0.094626	0.201268	0.226706	0.281762	0.3643
	(0.2655)	(0.2128)	(0.2377)	(0.1881)	(0.2223)	(0.195)	(0.19)	(0.2458)	(0.2763)
μ	0.30433	0.00551	-0.0118	0.047725	-0.043983	0.042642	0.048907	0.111379	0.153065
	(0.3123)	(0.1543)	(0.1694)	(0.1347)	(0.1959)	(0.1415)	(0.1286)	(0.1741)	(0.1906)
φ	-7.81570 *	-4.189746	-4.782103	-6.024346 *	-4.811895	-6.298146 *	-6.969254 **	-6.552633	-8.769991 **
	(4.2211)	(4.9198)	(4.8709)	(3.5423)	(4.1951)	(3.778)	(3.4448)	(4.2061)	(4.0194)
R-squared	0.92128	0.938569	0.937729	0.940566	0.937372	0.938671	0.940151	0.940056	0.926118
Adjusted R-squared	0.91515	0.933782	0.932877	0.935935	0.932492	0.933829	0.935363	0.935196	0.920046
S.E. of regression	1.04052	0.919207	0.925465	0.90414	0.928116	0.924376	0.91913	0.925954	1.034893
Durbin-Watson stat	1.36372	0.984847	0.92824	1.063634	0.932542	0.990117	1.043139	1.322468	1.21582
Instrument rank	17.00000	17	17	17	17	17	17	17	17

1/ **, *, # means statistical significance at 5, 10, and 15 percent.
2/ s denotes lag (+) and lead (-) for inflation variable.

DIVERSIFICATION OF THE NIGERIAN ECONOMY[8]

A. Introduction

1. The COVID-19 pandemic and the recent oil price crash have highlighted the need for Nigeria to diversify its economy more than ever. With a highly uncertain outlook for global oil demand, Nigeria is again standing at a crossroads. As much as it is a crisis, the COVID-19 pandemic is also an opportunity to foster diversification of the economy that is long overdue. The path Nigeria chooses now will have implications for decades to come.

2. This paper discusses the role of oil in the Nigerian economy, obstacles to diversification, the successful experiences of Asian countries, and possible policy lessons for Nigeria. The dependence of the economy on the oil sector is captured in Section B. Section C emphasizes the political economy of reforms. In section D, we draw on the transition experience of Asian countries toward export-oriented industrialization to see how the current crisis presents reform opportunities. Section E discusses Nigeria's industrial performance and offers some suggestions for areas where diversification seems to hold promising prospects.

[8] Prepared by Jiaxiong Yao (AFR) and Yang Liu (ITD).

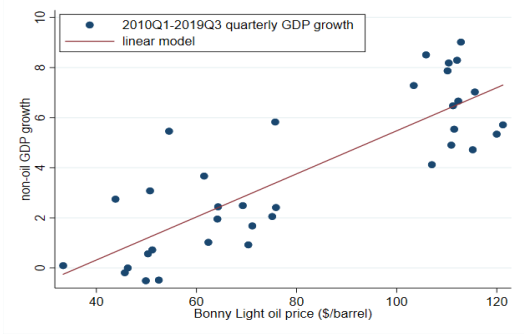
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B. The Omnipresence of Oil in the Nigerian Economy

3. Nigeria's economic dependence on oil long predates the current COVID-19 crisis. Nigeria discovered oil in the 1950s and became a major producer at the end of the Biafra War in the late 1960s. The economy's dependence on oil has been on an increasing path ever since. Government revenues rose from 10% of GDP in the 1960s to 30% in 1980s on the back of higher oil production and prices and oil exports from 5% to 24%.[9] In the last decade, these shares have averaged at 10% and 16%, respectively. This is not indicative of higher diversification as the share of oil in total fiscal and export revenues remained at 47% and 84% in 2019, respectively.

4. The reliance of the Nigerian economy on oil goes deeper. While the oil sector accounted for only 11% of GDP in the past decade, its impact on the broad economy is far-reaching. Figure 1 shows that the non-oil sector growth in the recent past has a strong positive correlation with oil price movements. When oil prices are high, the oil sector can provide enough foreign exchange to meet the demand of the non-oil sector for necessary imports of factors of production, and it can raise fiscal revenues and contribute to the economy through government spending. When oil prices are low, economic activity is generally subdued as a result for foreign exchange crunch and low government spending.

Figure 1. Oil Price and Non-Oil GDP Growth



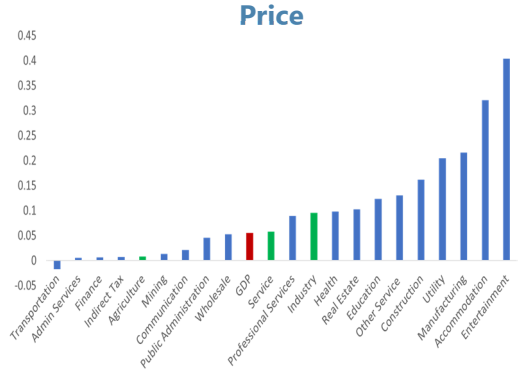
Source: Haver analytics; and IMF staff calculations

5. At least 30% of the economy indirectly depends on the oil sector through oil price developments. To estimate the size of the economy that is reliant on oil, we conduct a simple empirical exercise to see which sectors of the economy

6. are more sensitive to oil price movement than the overall economy. Using quarterly GDP growth data at the sectoral level between 2010 and 2019, we estimate the following regression,

$$g_t^s = \beta^s log\ P_t + \sum_{q=1}^{4} \gamma_q^s D_q,$$

Figure 2. Sectoral Dependence on Oil Price



Source: Haver analytics; and IMF staff calculations.

[9] Calculations are based on tables in Bevan, Collier, and Gunning (1999) and Ross (2012), product trade data from the Observatory of Economic Complexity (SITC4 REV.2 1962-2017) as well as the World Development Indicators.

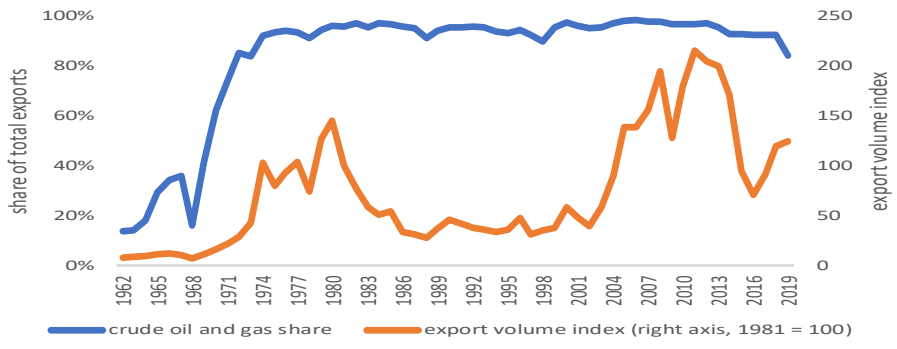
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where g_t^s is year-on-year quarterly GDP growth in sector s, P_t is the Bonny Light oil price, and D_q's are quarterly dummies intended to capture seasonality in GDP growth. The coefficient β^s measures sector s's growth elasticity to the oil price. Figure 2 presents β^s for each sector of the Nigerian economy, with overall GDP highlighted in red and the three main sectors (agriculture, industry, and service) highlighted in green. Overall, manufacturing and service sectors benefit more from higher oil prices while agriculture and finance sectors benefit less. If we consider sectors that respond more to oil prices than the overall GDP as oil-dependent, those sectors, shown in Table 1, account for 30% of GDP between 2010 and 2019. When the oil price level in the regression is replaced with oil price changes, Table 1 shows the estimated size of the oil-dependent sectors is similarly large.

7. Among publicly-traded companies, the share of revenues of oil-related industries could be as high as 60%. Using Compustat, a global database of financial and market information on public companies, we calculate the revenues of Nigerian companies at the industry level. Table 1 shows that the oil and gas industry accounts for 23-41% of total revenues of all listed companies. Adding industries that are indirectly related to oil, such as construction, power generation, etc., the share of revenues could be as high as 60%. The dominant role of oil-related industries in Nigeria's stock market implies that oil deeply affects the winners and losers of the economy, the allocation of financial capital, and household financial wealth, with distributional consequences for investment, finance, and the labor market.

Exports are dominated by oil and the sector's complexity has not fundamentally changed in the past decades. Since Nigeria became a major oil producer in the 1970s, hydrocarbon products have persistently accounted for 90% of Nigeria's exports (Figure 3). Of non-hydrocarbon exports, the composition has changed little over the past three decades and a large share remains agricultural and mineral commodities, such as cocoa beans, wood, rubber and fertilizer (Figure 4). A battery of development policies to promote non-oil exports, including the Structural Adjustment Program (SAP) between 1986 and 2000, the National Economic Empowerment and Development Strategy (NEEDS) between 2004 and 2017, and the Economic Recovery and Growth Plan (ERGP) more recently, have had limited impact on export diversification.

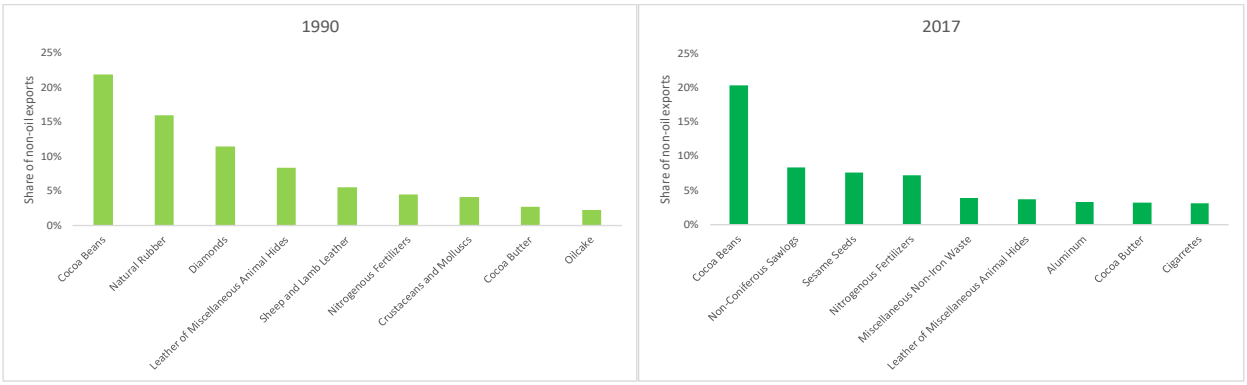
Figure 3. The Dominant Role of Oil in Exports



Source: The Observatory of Economic Complexity; and IMF staff calculations.

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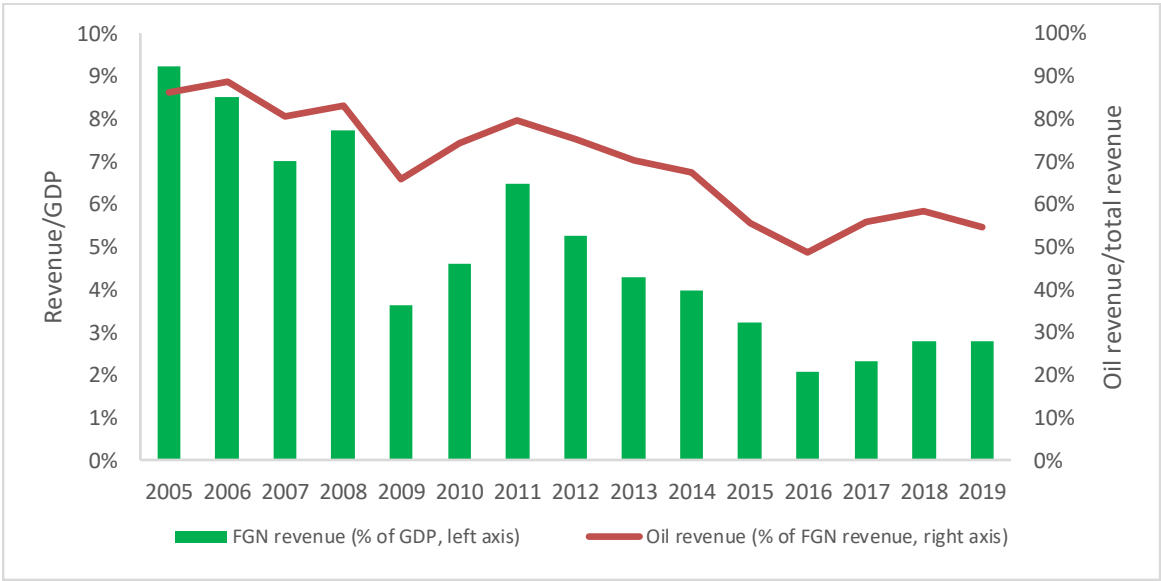
Figure 4. Similar Composition of Non-Oil Exports over Three Decades



Source: The Observatory of Economic Complexity; and IMF staff calculations.

8. Dictated by oil proceeds, fiscal revenue as percent of GDP gradually fell amid the secular decline in oil prices. The global oil prices have trended downwards since 2008, so has Nigeria's fiscal revenues, more than half of which derives from oil proceeds. Fiscal dependence on oil has not been reduced actively. While oil revenue as percent of the Federal government revenue has declined from over 80% in 2005 to 50% in 2019 (Figure 5), such decline paints a beguiling picture—the seemingly more diversified revenue is more a reflection of falling oil prices and less of a robust increase in non-oil revenues. With meager revenue to begin with, fiscal policies have been unable to produce enough savings to support the development of non-oil sectors. To the contrary, years of growing fiscal deficit have become a point of vulnerability for the economy. Mismanagement of oil proceeds adds to the fiscal predicament, further subjecting Nigeria's economic performance to the whim of oil price swings.

Figure 5. Heavy Dependence of Fiscal Revenue on Oil



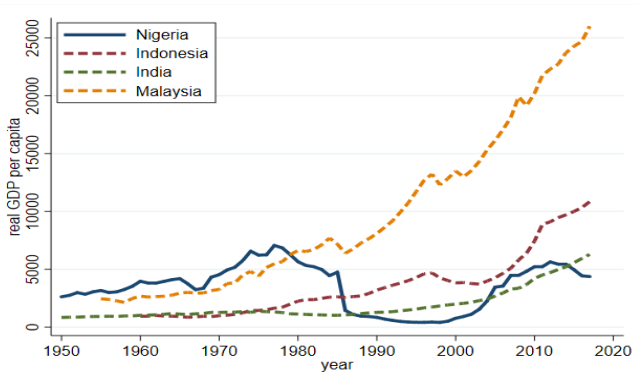
Source: Haver analytics; and IMF staff calculations.

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C. Why Diversification Has proven Difficult?

9. Nigeria has long struggled to rise to the challenge of diversification. The quest for industrialization dates back to its first National Development Plan for the period 1962-68. Succeeding national development plans from the 1960s to the 1980s focused on promoting local production and indigenous businesses through import substitution. Since the turn of the century, agriculture self-sufficiency, power, energy, and transport sector development, as well as private sector growth have been at the forefront of the minds of successive governments, as embodied in their development strategies from NEEDS and Vision 20: 2020 in the early 2000s to ERGP[10] more recently in 2017. However, diversification has remained largely elusive and growth performance uneven over time, causing Nigeria's income per capita to fall behind countries that once used to trail Nigeria (Figure 6).

Figure 6. Real GDP per Capita: A Long View



Source: Penn World Tables 9.1; and IMF staff calculations.

10. Why is diversification difficult to achieve? The literature has identified several channels through which natural resources impede diversification of resource-dependent countries, including the failure to develop non-resource sectors as a result of the "Dutch disease", the tension between short-term gains and long-term development strategies, the technical difficulties of managing resource wealth, and entrenchment of vested interests.

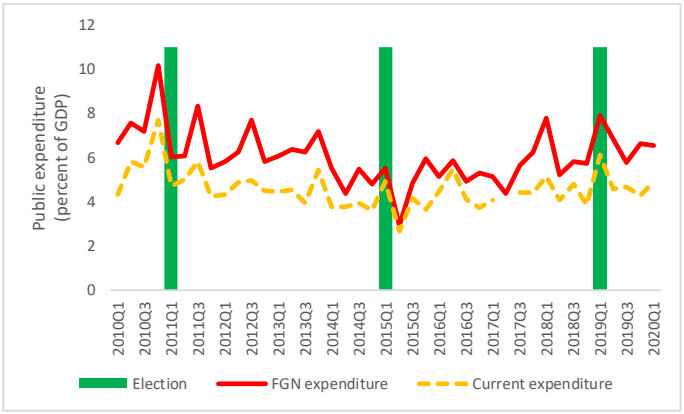
11. Commodity booms often fail to lift non-resource sector growth due to the "Dutch disease". During commodity booms, the resource sector absorbs factors of production from other sectors, creating the so-called "Dutch disease" that produces a decline in agricultural and manufacturing activities. The collapse of the Nigerian agriculture in the 1970s is an example (Ross, 2012). In the 1960s, Nigeria was an agricultural exporter. Export crops, including cocoa, palm oil and rubber, were the primary source of export revenues. However, the surge of the oil sector in the 1970s led to a massive exodus of labor from the agriculture sector despite rising rural wages. The cultivation of land was abandoned, leaving large tracts of land untapped. Meanwhile, booming oil exports led to an overvalued exchange rate and made imports attractive. As a result, between 1970 and 1981, export crops declined markedly by 78% in real terms and consumer imports almost quadrupled (Bevan, Collier, and Gunning, 1999). To make things worse, an overvalued exchange rate reallocated production factors to non-tradable sectors through stronger consumer demand, further widening the technological gap of the tradable sector with Nigeria's trading partners (Cherif, 2013).

[10] Economic Recovery and Growth Plan (ERGP).

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12. Long-term development strategies often give way to short-term spending pressures. Governments are often unable to resist short-term spending pressures that could deliver immediate gains both economically and politically. During the oil boom in the 1970s, Nigeria's revenue quadrupled in real terms, but government spending also rose from 10 percent of GDP to more than 25 percent, expanding at a rate far higher than the economy (Ross, 2012). Capital expenditure rose from 24% of total expenditure in 1973 to 52% in 1978. Conspicuous as it was, it failed to address the proverbial problems in transport, power, and housing at the time. GDP growth even fell from 11% in 1974 to -6% in 1978. In recent years, federal government expenditure typically increased by one-third before elections, driven by current expenditure that contributed little to long-term growth potential (Figure 7). Even when oil prices collapsed in 2014, spending was sustained before the elections only to fall sharply after.

Figure 7. Public Expenditure and Electoral Cycle



Source: Haver analytics; and IMF staff calculations.

13. Managing resource revenues face technical difficulties. Venables (2016) identified three key questions about the use of resource rents: the allocation between current consumption or investment, the types of financial, physical and human capital assets to be acquired for investment, and the entities that handle the rent (the government or the private sector). Historically, Nigeria has not been able to handle these questions well (Sala-i-Martin and Subramanian, 2013). Even creating resource revenues itself was fraught with problem. Low government take from commodity output led to the creation of the Nigerian National Petroleum Corporation, but the company's inefficiency sometimes led to declines in output. Managing a sovereign wealth fund (SWF) became another challenge. Nigeria has one of the worst SWF to annual budget ratio. The Nigeria Extractive Industries Transparency Initiative (NEITI, 2017) estimates that the ratio was 6.2% in 2012,[11] far below that of Nigeria's comparator countries. For example, the ratio was 10.4% for Angola in 2012, 32.1% for Russia in 2008, and 39.8% for Chile in 2007. More recently in 2018, the SWF to annual budget ratio fell to 5.6%.[12]

[11] The ratio is based on the size of the SWF in 2012 in percent of 2017 consolidated government revenue.

[12] This is calculated as the size of the SWF as of end-2018 in percent of 2018 consolidated government revenue.

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14. Vested interests, once formed, are difficult to break up. Resource wealth promotes rent-seeking where legal and political institutions are weak, leading countries to respond in a perverse fashion to favorable shocks that generates a more-than-proportionate increase in fiscal redistribution and reduces growth (Tornell and Lane, 1999). Resource-rich countries on average have worse control of corruption. Without strong institutional safeguards, economic rents associated with natural resources create incentives for bribes and state capture (IMF, 2019). Where natural resources generate vested interests, economic policies influenced by those vested interests reinforce the status quo. For example, historically, the restrictive import regime in Nigeria generated substantial transfers to domestic producers, whose strong anti-export bias hindered the development of the export base (Peter and Olivier, 2006). Sometimes radical changes are more needed than incremental ones. As detailed in Section D below, successful transition to a more diversified economy often involves crises that forced through necessary changes.

D. Successful Country Experience of Diversification

15. Learning from the diversification experience of its peer countries will be vital to Nigeria's future success. The country is pursuing import substitution that many countries have been through in the past. In fact, the idea of import substitution has been treated with caution since its inception (Irwin, 2020). Over time it fell out of favor as many country experiences have shown that it is inefficient and unsustainable. We look at three Asian countries, Malaysia, Indonesia, and India, that can provide valuable insights for Nigeria. We pick these countries as each started with a development strategy of import substitution similar to that of Nigeria but changed course along the road. We show that the confluence of three factors—economic crisis, social consensus, and external environment—triggered their decisive move away from import substitution and set them on a sustainable path of high economic growth.

16. Malaysia, Indonesia and India used to bear a remarkable resemblance to today's Nigeria. In terms of the structure of the economy and economic policies, Malaysia in the 1960s, Indonesia and India in the 1980s were similar to today's Nigeria. Based on GDP per capita, all three countries trailed behind Nigeria before the 1980s but overtook it one after another after reforms delivered a more diversified economy.

- ***Export and Fiscal Dependence on Natural Resources***

Much like today's Nigeria, Malaysia in the 1960s and Indonesia in the 1980s heavily depended on natural resources, which were the primary source of their government revenues and foreign exchange earnings. Malaysia's natural resources were in the form of agricultural commodities, with rubber and tin being most important. Indonesia in the 1980s produced about 1.5 million barrels of crude oil per day and its oil sector accounted for about 10% of GDP. Both oil production level and its contribution to GDP were almost the same as in Nigeria today. Oil revenue accounted for about 70% of government revenue in the early 1980s, also on par with Nigeria's current oil revenue to total revenue ratio in the early 2010s (Figure 5).

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- ***Low Share of Industrial Employment***

The share of employment in the industrial sector was about 15% for Indonesia and India in the 1980s, a low level similar to Nigeria's current share of little more than 12%. As a comparison, Indonesia and India currently have about 23% and 26% of employment in the industrial sector, respectively.

- ***Import Substitution***

Malaysia in the 1960s imposed import tariffs to protect domestic nascent industries, such as the processing of agricultural and mining products, production of steel and cement, etc. Currently, Nigeria bans imports of similar products, including processed meat and vegetables, steel drums and pipes, and cement.

Indonesia ratcheted up import restrictions rapidly before the mid-1980s. The import ban list kept growing and non-tariff barriers became more complex. Nigeria currently has an import ban list of more than 40 broad groups of items, an expansion from 24 in 2012. However, Nigeria's tradition of import prohibition goes back to the 1970s. The import ban list had 76 broad groups of items in 1978. At the height of import prohibition in 1986, it covered roughly 40% of agricultural and industrial products (Oyejide, Ogunkola, and Bankole, 2005).

India before the 1990s had decades of the import licensing system, known as the license-permit raj. Importing anything that could be produced domestically was discouraged regardless of the cost.

- ***Heavy Intervention of the State***

During the import substitution period, Malaysia, Indonesia and India all featured assertive state intervention in the form of trade and industrial policies. The Pioneer Industries Ordinance of Malaysia in 1958 provided incentives and tariff projection for manufacturing. Indonesia's industrial policies in the early 1980s were pursued through restrictive and discretionary investment procedures. Sectors were rarely chosen based on economic feasibility but on those deemed of strategic importance, such as petrochemicals and auto parts (Tijaja and Faisal, 2014). India's industrial licensing before the 1990s set quantitative constraints on industries. The government could dictate the location and scale of the plant (Felipe, Kumar and Abdon, 2013). Today, Nigeria's state intervention takes the form of protectionist trade policies and credit support. Tax incentives for pioneer industries, import ban, foreign currency restrictions, and minimum loan-to-deposit ratio are main policies to prop up domestic industries.

17. Economic crises, a force toward liberalization within the government, and exemplary economies at the time served as key contributing factors to decisive reforms.

- *Economic crisis*. The racial riots in Malaysia in 1969, the 1982-1986 recession in Indonesia triggered by falling oil prices, and the 1991 recession in India were instrumental to the fundamental change of economic development strategies. Annexes 1, 2, and 3 provide detailed

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description of the delicate political economy in Indonesia, Malaysia, and India that led to this transition.

- *Reformists within the government*. The group of economists within the Indonesian government had been pushing for reforms before the 1982-1986 crisis tipped the balance of power in their favor. Similarly, various committees in the Indian government in favor of liberalization were appointed in the 1980s before the 1991 crisis turned the tides. The force toward liberalization within each government sowed the seeds of difficult reforms.

- *External developments*. The success of East Asian miracles, the collapse of the Soviet Union, and the rise of China shaped the views of the politicians in the runup to their respective liberalization. Singapore had an earlier race riot in 1964 similar to the one in Malaysia in 1969 and its economic success did not go unnoticed by the Malaysian government. At the time of the Indonesia's crisis in the 1980s, the success of the four Asian tigers lent strong support to the strategy favoring trade liberalization. The Soviet Union, whose biggest trading partner was India, was collapsing during India's 1991 economic crisis. The command and control model, in contrast to China's revolutionary market reforms, lost its appeal to Indian politicians.

18. Competition on the international markets and the focus on knowledge accumulation were the defining aspects of the reforms.

- *In* the 1970s, promotion of foreign direct investment in manufacturing, through free-trade zones, tax incentives, and education of its workforce, as well as emphasis on technological upgrading were most important factors in Malaysia's diversification of the economy.

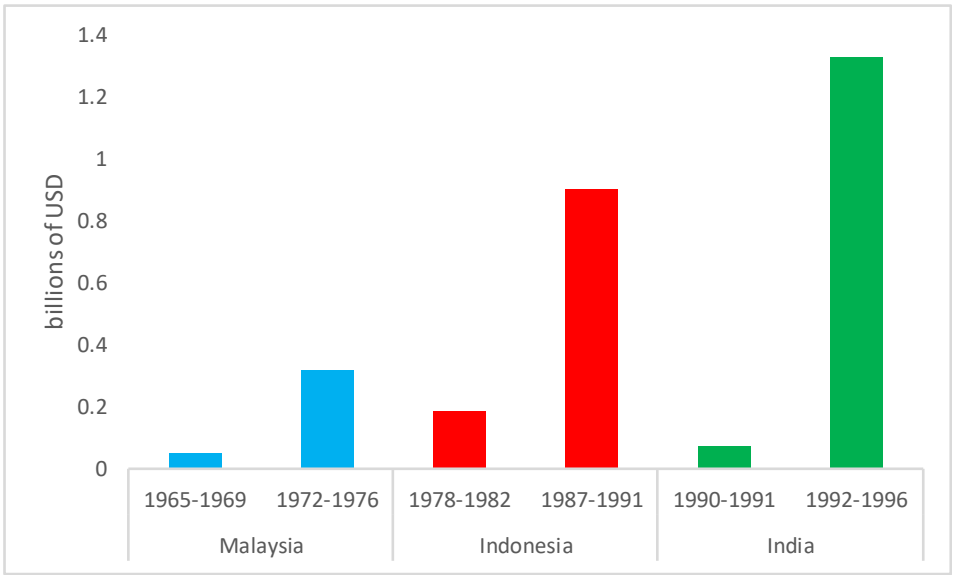
- The decisive reforms introduced in Indonesia in the 1990s included customs reforms that significantly reduced clearing time and import costs, import liberalization and trade deregulation that dismantled quantitative restrictions and reduced non-tariff barriers for importers substantially. Such reforms laid the foundation for Indonesian exporters to gain competitive inputs from international markets. Indonesia has become an export-oriented and internationally competitive economy since.

- India's New Industrial Policy and the export-import policy in the early 1990s eliminated industrial licensing, relaxed foreign investment rules, and introduced sweeping trade liberalizations. While liberalization in the manufacturing sector was limited, the liberalization in the service sector alone led to the dawning of a period of rapid diversification and improvement in living standards.

- Foreign direct investment (FDI) soared almost immediately after the reforms (Figure 8). Exports and growth also recovered from crises and steadily increased thereafter.

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Figure 8. Foreign Direct Investment Before and After Reforms



Source: World Economic Outlook; and IMF staff calculations.

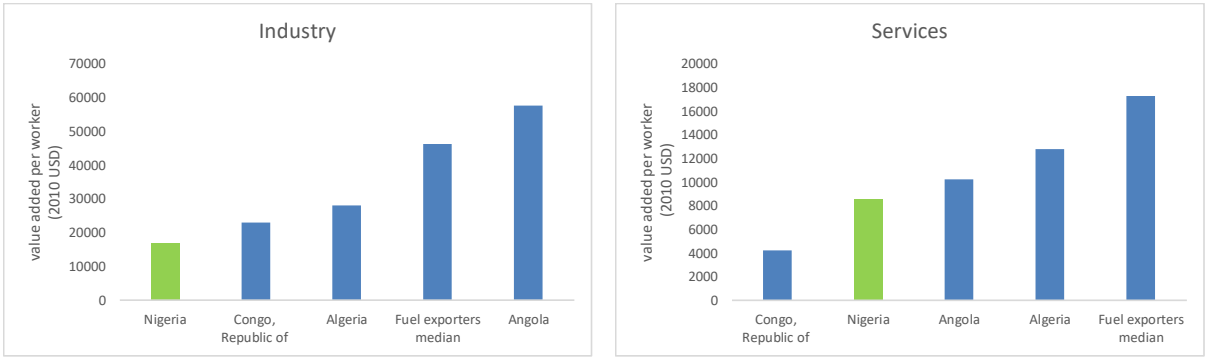
E. Nigeria's Path Forward

19. The COVID-19 crisis is an opportunity for Nigeria to take a fresh look at its economic landscape and reconsider industrial policies. For all the challenges it faces, Nigeria has a huge potential. It is Africa's largest economy. It accounts for more than 20% of Africa's household consumption and 15% of manufacturing output. Its large market size is attractive to foreign and domestic investment. Technological change is accelerating. E-commerce revenue in Nigeria has doubled each year since 2010. Business-to-business market is rapidly growing (Bughin, Chironga, and Desvaux, 2016). As many countries have turned crises into opportunities in the past, Nigeria faces a strategic moment to diversify its economy in the wake of the COVID-19 crisis.

20. Nigeria should embrace three key principles which have proven useful in countries that have pursued industrial policies successfully: state intervention should be limited to fixing market failures only, industrialization should have a clear export orientation, and policies to promote domestic industries should ensure competition and strict accountability (Cherif and Hasanov, 2019). Productivity gains are at the heart of true industrial policies. To achieve sustained growth, new goods and new technologies should be introduced continuously, and the buildup of human capital should be emphasized throughout. Policies should steer factors of production in technologically sophisticated industries and encourage competition in both domestic and international markets. Nigeria's productivity has remained low in the past decade, particularly in the non-oil sector (Figures 9 and 10).

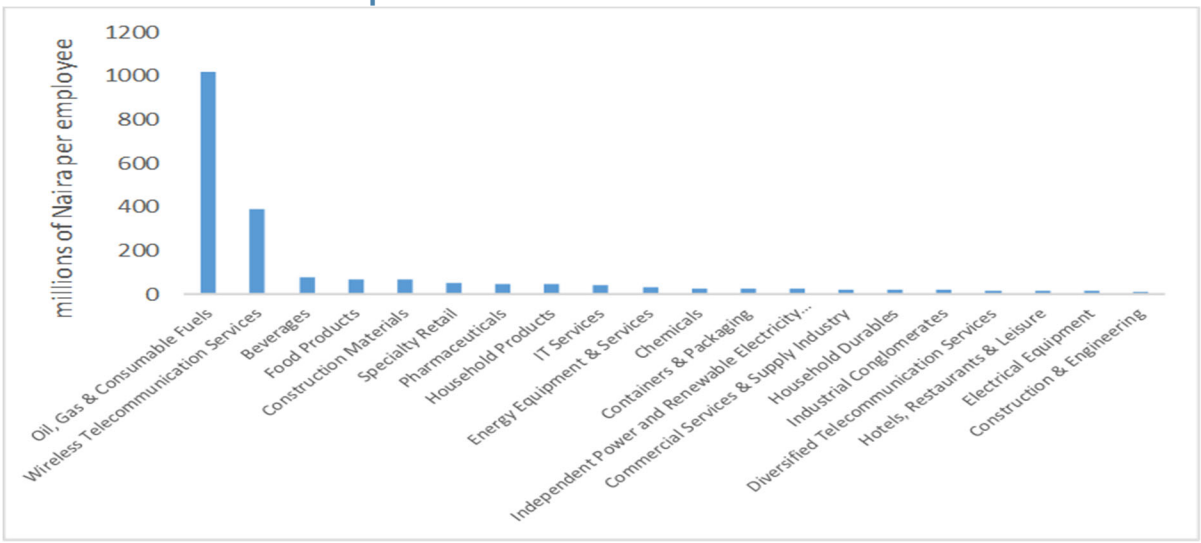
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Figure 9. Labor Productivity: Nigeria and Comparator Countries
(2010-2019 Average)



Source: World Development Indicators and IMF staff calculations

Figure 10. Industry Average Labor Productivity
Top 20 Industries Between 2009 and 2019



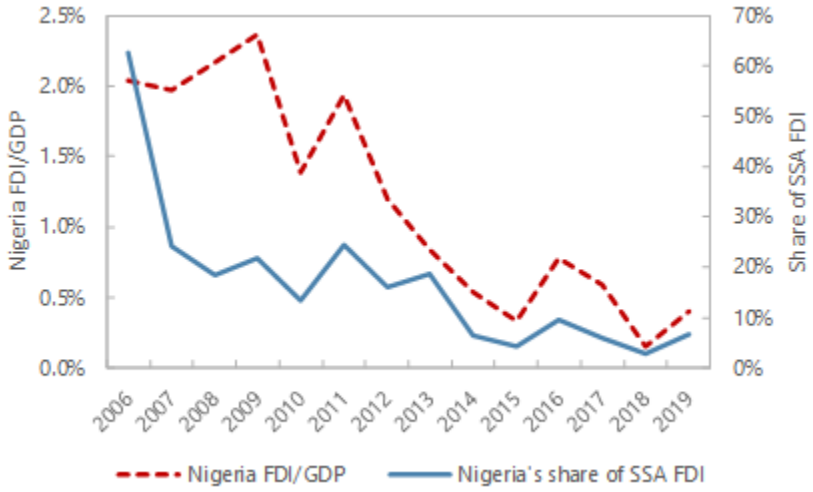
Source: Compustat; and IMF staff calculations.

21. To follow the key principles of industrial policies, Nigeria needs to identify structural reform priorities, including in trade and competition policies. Currently, large infrastructure gap, high levels of corruption, and limited financial inclusion are key obstacles to the economy. Nigeria's competition law regime has been inadequate to address anti-competitive trade practices such as price regulation and dominance of big firms in some industries. Red tape and corruption related to micro, small, and medium-sized enterprises, such as multiple taxation, retail corruption, and overregulation, are undermining the private sector (Page and Okeke, 2019). An overvalued exchange rate, multiple foreign exchange windows, and unpredictable policies regarding foreign exchange access are holding back the export sector. The inward-looking import substitution policies are stifling competition and making Nigeria an increasingly less attractive destination for foreign investment (Figure 11). Export sophistication, which is shown to be a robust determinant of growth

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(Cherif, Hasanov, and Wang, 2018), is still lacking. Decisive reforms need to be taken for the Nigerian economy to take off. Building a strategy to remove those bottlenecks of the economy in an orderly fashion will be important. Strong institutions will also need to be fostered overtime to ensure the successful implementation of reforms.

Figure 11. Declining Foreign Direct Investment



Source: World Economic Outlook and IMF Staff Calculations

22. Agriculture, energy and transport, as well as the digital economy could be the new pillars of Nigeria's development strategy. Consistent with the focus of the recent Nigeria Economic Sustainability Plan, conceived in the midst of the COVID-19 crisis, development of these sectors would increase the productive capacity of the economy and create much needed jobs.

- ***Agriculture***

Nigeria's agriculture sector has suffered from decades of neglect and features low productivity. While recent initiatives such as the Anchor Borrowers Program, the import ban on food items, and the border closure aim to revive the sector, durable gains can only come from addressing fundamental challenges, including the outdated land tenure system, mechanization, irrigation, seeds, procurement, distribution, storage, access to market, and limited adoption of research and technologies. Cross-country experiences show that productivity gains in the agriculture sector have always accompanied industrialization. Channeling public and private resources to tackle those fundamental challenges would provide a solid basis for Nigeria's industrialization.

- ***Energy and Transport***

Despite being a major oil producer, Nigeria has to import refined oil products. Its domestic refinery has operated well below capacity for years under mismanagement and corruption (Sayne, Gillies, and Katsouris, 2015; Ogbuigwe, 2018). Increasing the sophistication of the oil industry and

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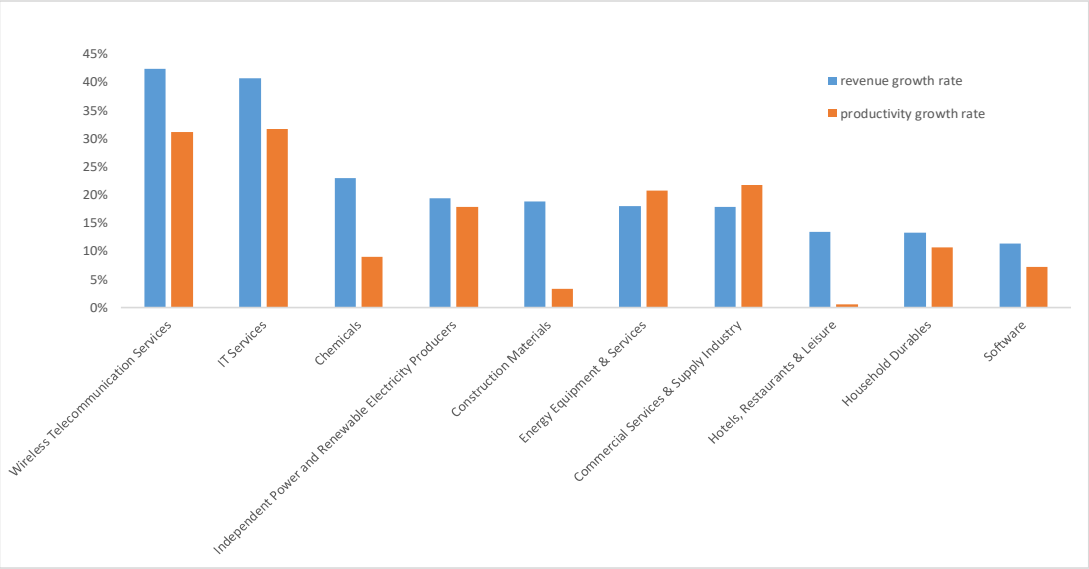
producing value-added oil products would reap the full potential of Nigeria's comparative advantage. The upcoming Dangote refinery is a welcoming development.

Unreliable power and poor transportation are among the major constraints of doing business in Nigeria. Successive governments have placed high emphasis on the power and transportation sectors, yet the outcomes remain inadequate. Strong commitment to solving the bottleneck problems such as power shortages, poor grid, port congestion, and lack of paved road, would provide the basic infrastructure for the private sector to grow. The recent electricity cost-reflexive tariff increase is a key welcoming step, but strong implementation remains crucial. Firms in emerging industries are growing at a much faster pace than firms in traditional industries in terms of both revenues and productivities (Figure 12). Helping domestic champion firms as well as small and medium enterprises succeed entails creating a conducive environment of physical infrastructure.

- ***The Digital Economy***

The digital economy could be the new engine of growth for three reasons. First, the wireless telecommunication industry and the IT services industry have over 30% annual growth rate for the past decade in terms of labor productivity and revenue. Further development of the sector will build on the current momentum. Second, Nigeria has a young and dynamic population that meets the need of the digital economy, which in turn has the potential to increase employment of the young and build human capital. Third, investing in the digital economy would help Nigeria leapfrog the current physical infrastructure deficit and increase its international competitiveness. Box 1 analyzes Nigeria's two important sectors of the digital economy.

Figure 12. Average Annual Growth Rate of Revenues and Productivities Top 10 Industries Between 2009 and 2019



Source: Compustat; and IMF staff calculations.

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Box 1. Digitalization: The Next Engine of Growth?

- **Wireless Telecommunication Services.** The wireless telecommunication services industry is important for digitalization and its development is promising. As estimated from the Compustat data, the wireless telecommunication services industry develops fast in the past decade with an average annual growth rate over 40% for revenue and over 30% for productivity.

- Wireless telecommunication is part of national backbone broadband infrastructure which is a key enabler to harness the digital economy. Wireless broadband has become the dominant means for people in Nigeria to access the internet, as a result of the limited development of fiber infrastructure--household penetration rate was 0.04% at the end of 2018, below the African regional average (0.6%) and well below the world average (13.6%) (World Bank 2019, Nigeria Digital Economy Diagnostic Report). According to ITU, 3G coverage reaches 54% of the population and LTE/WiMAX, 50.8%. Wireless telecommunication enables firms and individuals to build business in e-commerce and fintech areas and allows the government to provide more efficient and inclusive services.

- According to Compustat data, Nigerian companies in the wireless telecommunication services on average also has the highest annual investment from the past decade, which significantly facilitates its future development. However, its further development and fixed-line infrastructure penetration still need proper industry policies to improve internet coverage in rural areas, including to

- Improve education and provide target training funded by the government or private sectors;

- Provide funding and qualified/trained staff to operate and support the public investment in digital infrastructure in underserved areas;

- Open access to critical infrastructure investment to private sectors;

- Provide universal, consistent and certain rules/regulations across country for investment, construction and operation of wireless telecommunication services and fixed-line infrastructure;

- Provide government policies to drive demand for broadband services.

- **IT Services.** The IT services industry is expanding rapidly with an average annual growth rate of over 40% for revenue and 32% for productivity. It covers a wide range of business from managed services, provision of software and hardware installation and maintenance services to software development, online financial services and e-commerce platforms.

- Nigeria has the largest young population of sub-Saharan African countries who are willing to receive new knowledge. The IT services industry provides the potential to involve them and becomes a new driver of the economy. The IT services industry offers jobs for people at different education levels and can break the constraint of geographical boundaries. The work starts from data extraction, data entry and data labeling for people with limited education, to IT helpdesk services, software online maintenance and web design for people with secondary education or associate degrees, all the way to software development and other online services that require in-depth knowledge. Given its current low average level of education achievement, Nigeria right now is in the lower value-added segments of IT services. However, with more efforts on digital training and education, Nigeria can climb up the value chain. With the increase in demand of the IT outsourcing market, letting its companies compete in the global market would not only help the industry development but also increase service export and strengthen Nigeria current account balance.

- More policy support is needed to further the IT services industry development, including to

- Improve education and include digital training in the current education system;

- Reform the policy environment to encourage SMEs and strengthen the policy to support IT services industry;

- Ease access to finance and open access to private equities and venture capitals;

- Encourage digitalization in strategic industries and government services and provide transparent channels for domestic IT services companies or individual contractors to engage;

- Increase people's awareness of such online work opportunities.

Both the wireless telecommunication services industry and the IT services industry hold large potential for further economic gains. Continued reforms to facilitate the development of these industries are needed. The World Bank (2019) provides a diagnostic analysis of Nigeria's digital economy, including its strengths and weaknesses, and provides actionable policy reforms to support the digital economy. As the world moves toward digitalization, Nigeria should seize the moment to transform its economy.

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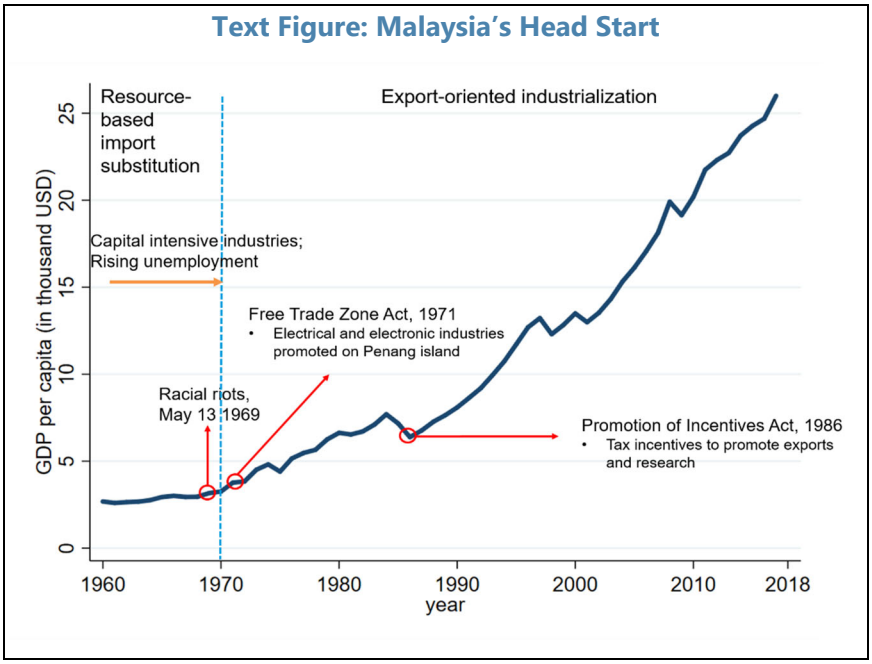
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Annex I. Malaysia's Early Economic Success in the 1970s

1. Background. Malaysia inherited vibrant commodity export industries after independence in 1957 and began pursuing an import substitution industrialization strategy (Ritchie, 2004). Heavy dependence on agricultural commodities and large income inequality characterized the economy. Rubber and tin were the main source of government revenue. Resource-based manufacturing and heavy industries, such as the processing of agricultural and mining products, production of steel and cement, etc., were promoted. While the indigenous population engaged in subsistence agriculture, foreign interests dominated exports. The capital-intensive industries were not able to generate sufficient employment, leading to high unemployment rate.

Text Figure: Malaysia's Head Start



2. Racial riots. On May 13, 1969, racial riots broke out against the backdrop of high poverty rate and high unemployment rate. In the wake of the riots, the government launched the New Economic Policy (NEP) in 1971, attempting to restructure the society through economic policies and focus on the exports of labor-intensive manufacturing industries to reduce poverty and unemployment.

3. Main contributors to growth. Since the launch of the NEP, Malaysia embarked on a path of export-oriented industrialization and enjoyed high economic growth in the 1970s. Foreign investment and emphasis on technological upgrading were most important factors in Malaysia's diversification of the economy. Promotion of foreign direct investment in manufacturing, through free-trade zones, tax incentives, and education of its workforce, were key to the growth of its manufacturing sector. Building domestic capabilities and investments in research and development helped vertical diversification, where Malaysia expanded beyond existing industries, such as rubber and palm oil, and entered upstream and downstream industries such as biotechnology engineering

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in palm production and medical materials based on rubber (Jomo, 2001;Cherif, Hasanov, and Zhu, 2016). Active policymaking, including fiscal policies to develop infrastructure and attract foreign capital provided a conducive environment for rapid diversification and sustainable growth.

4. Lessons. The racial riots in 1969 represented a structural break in Malaysia's economic policies. In a way, ethnic tensions in their extremist form forced the government to realize that import substitution policies were not sustainable. While subsequent polices were not free of problems, step-by-step reforms toward export-oriented industrialization sustained high growth rates of the Malaysian economy for decades to come

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Annex II. The Political Economy of Indonesia's Reforms in the 1980s

1. Background. Indonesia's economy began to stabilize in 1966 when President Suharto took power and marked the beginning of the New Order regime. Dubbed by Higgins (1968) as the number one failure among the major underdeveloped countries, one of the key commitments of the New Order was economic development. However, there were different voices and ideas within the government on how economic development should take place. It's important to note that President Suharto remained in power until 1998. Reforms during this period, as much as they were economic choices, were also political considerations of the President to retain support for the regime.

Text Figure: Indonesia's Policy Shift in 1985



2. Players. Three groups of people were in the inner circle of the president: economists, nationalists, and the establishment (Resosudarmo and Kuncoro, 2006). The economists had Western economic training background and embraced the neoclassical view. They controlled the Ministry of Finance and the National Planning Agency. The nationalists, in contrast, had mostly engineering background and believed in protectionist policies. They controlled the Ministry of Trade, the Ministry of Industry and the National Investment Coordinating Board. The establishment consisted of military personnel and the ruling party members. Situated in the State Secretariat and the administrative area of the presidential office, they were responsible for distributing rewards among the political elite.

3. Balance of power. The oil boom between 1974 and 1982 tipped the balance of power toward nationalists and the establishment. The oil windfall provided money to finance economic development and allowed the President's patronage system to expand. The nationalistic idea to rely

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less on foreign investment and protect infant industries gained momentum. Indonesia pursued import substitution policies and large projects that benefitted the two groups and broadened the President's political support.

However, the secular decline in oil prices between 1982 and 1986, coupled with the worldwide recession, drastically reduced Indonesia's oil revenue and exports. The falling revenue made it increasingly difficult, if not impossible, for the patronage system to continue. The situation called for a different development strategy and changed the balance of power in favor of the economists. Beginning in 1983, the economists started to implement reforms in exchange rate, monetary and financial sector, fiscal and trade policies. While reforms in the financial sector were notable, they were less successful in the real sector where vested interests close to the President held monopoly power.

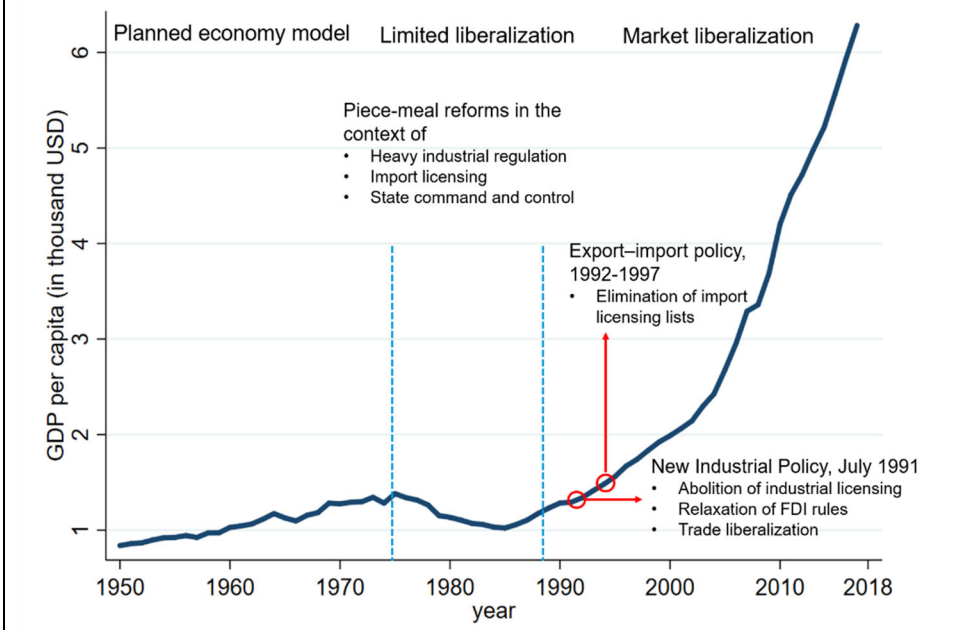
4. Trigger of major reforms. Although reforms started in 1983, the most decisive ones did not happen until the second wave of the double-dip recession came in 1985. Before the recession, the customs had long been one source of funds for the ruling party. The recession that started in 1982 made corruption in the customs agency, which constrained the manufacturing sector and reduced government revenue, a prominent problem. In 1985, after a few unsuccessful attempts in previous years to reform the customs, the government took an unprecedented approach, replacing the traditional customs inspection system with private sector-based pre-shipment inspection (Meyers and Oliver, 2015). This approach greatly reduced corruption and shortened customs clearing time

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Annex III. India's Break with the License-Permit Raj in 1991

1. Background. India's path toward diversification is characterized by three periods: planned economy model, limited liberalization and market liberalization. Since India's political independence in 1947, the quest for economic independence began. Largely inspired by the Soviet-style development, a planned economy model was adopted with the public sector playing a leading role. To reduce dependence on foreign exchange and achieve self-sufficiency, an industrial and import licensing system was introduced, known as the license-permit raj (Felipe, Kumar and Abdon, 2013). The license-permit raj was largely in place until the 1980s when limited liberalization was allowed for selected industries and trade. Then, the wave of major reforms came when P.V. Narasimha Rao became prime minister in 1991. The New Industrial Policy, launched in July 1991, introduced sweeping liberalization measures including the near abolition of industrial licensing and elimination of import licensing, relaxation of FDI rules and reduction of trade barriers. The substantial liberalization in the service sector, more so than that in the manufacturing sector, led it to become the main driver of India's impressive growth after 1991.

Text Figure: Paradigm Shift in India



2. Buildup to the reforms. The sweeping reforms in 1991 did not happen overnight. To the contrary, it had decades of buildup. Since the 1960s and in response to the criticism of the license-permit raj, a large number of studies had been done to record and analyze the problems. Ironically, those studies recommended further tightening of the regime despite highlighting the problems of the regime. But they laid the intellectual foundation for liberalization reforms in the future. In the 1980s, the tides began to turn when various committees in favor of liberalization were appointed, many of which built on past reports yet recommended deregulation. When V.P. Singh was appointed the Finance Minister in 1984, he oversaw the gradual relaxation of the license-permit raj.

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Later in 1989 when he became the prime minister, his government began to work on a blueprint for industrial reforms. Though it met with resistance and was buried in Parliament, the industry portfolio was nevertheless adopted by successive governments. External conditions were also favorable for reforms in the 1980s. The success of East Asian economies made the India government increasingly receptive to liberalization ideas.

3. The year of 1991. The economic crisis, domestic politics and the external environment were three important factors in the 1991 reforms that ushered in a new era for India.

Economic crisis. Years of large and growing twin deficits in the 1980s led to a balance-of-payments crisis at the end of 1990, when international oil prices hiked in the runup to the Gulf War. India's foreign exchange reserves were depleting rapidly to the point that it could only cover two weeks of imports by June 1991. Meanwhile, the government could not pass the budget after Moody downgraded India's ratings and came very close to defaulting on its debt. The urgency of the situation left the government with no option but to go to the IMF, against which India had a strong opinion (Sinha, 2016).

Domestic politics. P.V. Narasimha Rao became prime minister in July 1991. His government retained the buried blueprint of industrial reforms of the outgoing regime. A cabinet note on the industrial portfolio was prepared and set to be presented along with the budget on July 24. Predictably, however, it did not pass the cabinet because it represented an ideology that repudiated India's history. Even after a group of ministers toned down the cabinet note, every proposal came under attack. Finally, a long preamble to the cabinet note was added to make the "political packaging" right, stressing continuity of reforms, assuring interests of all sides and sufficiently deferential to India's founding leaders. The industrial reforms were approved by the cabinet on July 23 and the New Industrial Policy was tabled the next day (Mital, 2016).

External environment. It cannot be overlooked that in 1991 the Soviet Union, whose biggest trading partner was India, was collapsing. The Soviet Union's downfall made Indian politicians realize that the "command and control" system could not be India's solution to its crisis. Meanwhile, market reforms had revolutionized China. Such stark contrast helped politicians turn in the direction of the market (Aiyar, 2016).

4. Lessons. While substantial reforms were underway in the 1980s, they were half-hearted (Arvind, 2004). It was the crisis in 1991 that led to more systematic and deeper reforms in the 1990s that represented a fundamental change of economic policies. Political opposition never disappeared throughout the reforms. Political wisdom, and perhaps a bit of luck with visible short-term returns, pushed the reforms forward. It was only when India's GDP returned to record growth in 1994 that objections of the reforms as a sellout to the IMF by the opposition parties subsided (Aiyar)

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