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Demand-growth in support of structural change: evidence from Nigeria's formal manufacturing sector

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Abstract

An emerging literature on demand-led structural transformation and structuralist macroeconomics finds that demand-growth can positively complement industrial policy and drive structural transformation but there is no firm consensus which policies can achieve a sustained virtuous circle of demand-, output- and productivity growth. Looking at evidence from manufacturing companies listed on the Nigerian Stock Exchange (NSE), this paper supports the view that demand-growth can be a catalyst of structural transformation but only if demand problems of different nature are addressed *simultaneously*. Increases in government spending need to be combined with distributional policies favouring the disposable income of workers and subsistence communities and with policies that can address country-specific and historically formed supply-side problems in vertically linked sectors to counteract external demand problems manifesting through the balance of payments.

1. Introduction

Manufacturing is widely recognised as the engine of growth (Szirmai, 2012; McMillan et al., 2014) and Industrial policy (IP) is increasingly seen as necessary to ignite structural transformation (ST) (Andreoni and Chang, 2019). This is because supply-capacity relies on a range of organisational capabilities such as how to organise workflows, how to adapt to changing demands of lead firms or how to upgrade productive capacity. Such tacit knowledge can only be acquired through the production process itself through learning-by-doing. Therefore, instruments like subsidies, credit direction, or tariff protection, are needed to ensure production can take place *before* competitiveness is reached (Khan, 2013a; Khan 2019). If the rationale for why IP is needed is well established, the successful implementation of IP can difficult because learning depends on the active effort of firms, which can be difficult to enforce (Khan 2019). Equally, successful implementation of IP in one sector need not result in ST across the whole economy. Khan's Political Settlements approach advanced institutional explanations for both successful IP and sustained ST emphasising that IP instruments used have to match the distribution of power in society. In addition, scholars identified several macro-structural tensions which can hold back ST. These emerge, for instance, when different sectors grow at different paces generating supply- and/ or demand-bottlenecks in vertically linked production activities, when consumption patterns do not match synergies in production tasks or due to investment indivisibilities (Andreoni and Chang, 2019). Late industrialisers also face numerous structural hindrances rooted in the global organisation of production, including the structural power of lead firms to capture value in Global Value Chains (Milberg and Winkler, 2013; Morris and Staritz, 2019), limited policy space to implement IP (Singh, 2011) and asset-driven wealth accumulation (Demir, 2007; Lechevalier et al., 2019).

An emerging literature on demand-led ST complements these explanations and emphasises that demand growth can support both the successful implementation of IP and ST beyond islands of efficiency (Landini et al., 2021; Nomaler et al., 2021; Itaman and Wolf 2021; Oreiro et al., 2020; Storm, 2020; Storm and Naastepad, 2005). The empirical evidence on demand-led ST is, so far, small and limited to cases of successful late-industrialisers like South Korea and Taiwan (Storm and Naastepad,

2005) or to successful individual sectors like renewable energy (Landini et al 2021), automobiles and semi-conductors in China (Lo and Wo 2014) or the cement sector in Nigeria (Itaman and Wolf 2021). Case studies and simulations on successful cases can demonstrate the presence of demand as an explanatory factor in industrial take-off but they provide limited information on possible limitations and therefore the conditions under which demand-led policies can be successfully implemented.

This article focusses on Nigeria's stock-exchange (NSE) listed manufacturing firms as a critical case where demand-led policies were conducive for the emergence of some manufacturing sectors but overall failed to sustain ST. Nigeria is therefore a good case through which the possibilities of and limitations to demand-led ST can be explored. In particular, which policies can support a virtuous circle of demand-, output- and productivity growth and under which conditions demand-side stimuli can effectively complement industrial policy. Doing so, the article contributes to ongoing debates whether demand growth should be led by government spending (Nomaler et al., 2021; Palley, 2021) or exports (Oreiro et al., 2020; Gabriel et al., 2020) and to what extent income distribution is a relevant determinant of domestic demand growth (Razmi, 2015; Razmi, 2016; Aboobaker, 2019).

Since the early 2000s, the Nigerian government has implemented so-called backward integration policies (BIP) with the aim of supporting domestic production capacity in sectors such as cement or sugar processing. Alongside these industrial policies, government consumption and investment increased substantially, the latter focussing on large-scale infrastructure development. This policy mix supporting the growth of demand at the macrolevel and supply-capacity in selected sectors was critical in supporting the emergence of few and vastly successful manufacturing firms, but did not lead into a process of sustained ST. On the back of the BIP, Nigeria emerged as the largest cement producer in sub-Saharan Africa (SSA) and the domestic cement manufacturers Dangote and BUA have outcompeted established European multinationals such as Lafarge. Both Dangote and BUA expanded their manufacturing activities domestically beyond cement including to basic consumer goods such as sugar, salt, seasoning, tomato paste, flour and rice. Most recently, Dangote invested over $19 billion to venture into oil refining and fertilizer production in Nigeria, despite challenges like the global

pandemic, electricity and transport constraints and vested interests in the Nigerian refined petroleum import sector. The Dangote fertilizer plant, the largest in sub-Saharan Africa, has come on stream in March 2022 (Norbrook, 2021). Whilst a few domestic conglomerates rapidly expand and thrive financially, the Nigerian economy as a whole remains heavily dependent on oil, accounting for around 51% of government revenue (CBN 2020 Statistical Bulletin, Public Finances) and 87% of exports in 2020. Though slowly increasing, manufacturing accounts for as little as 13% of Nigerian GDP in 2020. Output growth of the biggest manufacturing sub-sector - food and beverages and textile, apparel and footwear – substantially lags behind that of the cement and non-metallic minerals sector (CBN 2020 Statistical Bulletin – Real Sector).

This article supports the view that demand-growth can act as a catalyst of ST and that ST can be led by domestic demand growth but only if demand problems of different nature are addressed simultaneously. First, Keynesian demand stimuli like government spending on infrastructure need to be combined with distributional policies favouring the disposable income of workers and subsistence communities. Based on the value-added statements of NSE-listed manufacturing firms, this article shows that distributional dynamics did not work to reinforce the growth of purchasing power neither through wage growth nor through growth of distributable tax revenues. Therefore, demand multiplier effects from employment in building materials industries and on construction projects remained limited and the Nigerian consumer demand base was fragile when exposed to the commodity price shock of 2014/15. This external shock, which resulted in a depreciation of the exchange rate, put pressure on domestic prices and reduced purchasing power of lower income households. Qualitative evidence from the annual reports of NSE-listed manufacturing firms shows that this was a factor holding back the expansion of consumer goods producing firms. Building materials producers did not face the same revenue squeeze because government spending on infrastructure was maintained.

Second, the effectiveness of demand-side stimuli relies on supply-side support along the entire supply-chain to reduce import-dependence and address external demand-constraints. In Nigeria, such policies were not in place: industrial policy measures focussed on politically increasingly influential large-scale

processing firms while neglecting the needs of small-scale providers of mainly agricultural inputs. Manufacturing production therefore remained highly import-intensive and the currency depreciation after the 2014/15 oil price shock resulted in increasing costs of imported raw materials needed in production.

The article draws on a combination of quantitative data derived from the financial statements of NSE-listed manufacturing firms and qualitative data derived from the statements of senior management published in the annual reports. Addressing the shareholders, senior management communicate how they perceive reasons to expand or divest and justify their business strategies. The systematic analysis of all annual reports of NSE-listed manufacturing firms using NVivo, therefore, allows to trace the structures and causal mechanisms through which investment was induced or curbed and how manufacturing firms responded to their macro-economic environment.

The paper is organised as follows. Section 2 reviews the theoretical and empirical literature on demand-led ST. Section 3 reviews debates on the role of policy in supporting demand-led late-industrialisation. Section 4 outlines the research design. Section 5 traces accumulation dynamics in NSE-listed manufacturing firms. Section 6 explores the reasons behind the comparatively sluggish growth of Nigeria's consumer goods producing manufacturing sector. Section 7 concludes.

2. Industrial policy and demand-led late industrialisation

Demand as a structural constraint to industrialisation and successful implementation of IP, has received little attention in scholarship on IP and ST (Andreoni and Chang, 2019; Storm, 2020) under the assumption that supply creates its own demand or that export demand is unlimited from the perspective of an individual economy (see for instance: Nelson and Winter 1982: 209; Amsden 1990: 11). However, an emerging literature on demand-led ST suggests that demand-growth in line with supply, while not the only structural factor enabling ST, can have a significant effect on both the enforcement of firms' learning effort and ST beyond islands of efficiency (Landini et al., 2021; Nomaler et al., 2021; Itaman and Wolf 2021; Oreiro et al., 2020; Storm, 2020; Storm and Naastepad, 2005).

First, demand growth can stimulate firm-level processes of innovation and capability development. Empirical evidence shows, for instance, that large or growing markets provide incentives for firms to increase their spending on R&D (Mowery and Rosenberg, 1979) and to undertake product innovations in response to domestic users or government procurement (Malerba et al., 2007; Martin et al., 2019; Martin et al., 2019). Furthermore, expanding markets, can increase firms' incentives to engage in learning-by-doing and develop productive and organisational capabilities because the potential 'prize' to be captured increases (Itaman and Wolf 2021). Increases in domestic demand also allow firms in emerging markets to accumulate capabilities in low-end markets not yet captured by multinational companies (Landini et al., 2021).

Second, demand is not only a driver of sustained investment and capability development. It is also a structural factor underpinning late-industrialisation. Productivity increases in manufacturing production are not merely a function of knowledge but also of scale. This is reflected in Kaldor's second growth law (Kaldor-Verdoorn law), which states that there is a circular cumulative relationship between output and productivity in the manufacturing sector. Productivity growth leads to output growth and output growth leads to further productivity growth (Toner 1999: 133ff; Thirlwall 1983). The emergence of some important firm-level organisational capabilities such as the capability to build economies of scale and scope as a way to bring down firms' cost functions (Schumpeter 1943: 74), is itself dependent on the size of the market. Economies of scale, stemming among other things from the division of labour, drive productivity increases in individual firms. The bigger the size of the market, the greater the number of inputs produced under conditions of increasing returns to scale. Thus, increasing returns to scale at the economy level depend on the economy's volume of production, i.e. the simultaneous growth of a number of interlinked economic undertakings operating each on large scale. This fundamental relationship between the size of the market and productivity was first explored by Adam Smith (Blitch, 1983) and picked up by Young (1928) and later Kaldor (2007: 59). Linking the scale of industrial production to the premise that the economic system is driven by demand, to which

is supply adapts within limits, Kaldor (2007: 55) maintains that manufacturing production is dependent on and therefore constrained by demand for its products.

Different examples support these links between increases in demand, firm-level capability development and ST. Lo and Wu (2014) show that the take-off of the Chinese automotive and semi-conductor industries were critically related to an initial demand creation by the state. Even though industrial policy measures had been in place to support both sectors since the late 1980s, productivity increases and capability development in domestic firms and joint ventures only occurred after government spending on telecommunication and transport infrastructure increased in the wake of the East Asian financial crisis, thereby boosting demand for cars and semiconductors. Similarly, Landini et al. (2021) trace state-led demand-growth as a critical factor supporting output growth in China's wind, biomass and hydropower sector. Their simulation model shows that 'demand windows' can play a major role in capability development and facilitate catching up of latecomer industrialisers, depending on the timing of the demand window, the absence of technological discontinuities and presence of infant industry protection for nascent industries. Storm and Naastepad (2005) show that industrialisation in South Korea and Taiwan was spurred by government-led investment, which supported productivity increases on the back of economies of scale and scope and, in turn, higher exports and further growth in demand. Wolf (2017) shows that rising incomes as a result of rising oil prices in Angola until 2015 fuelled manufacturing firms' expectations about rising domestic middle-income consumption and prompted investment in sectors such as food and beverages. Some of these firms, like the Angolan soft drink producer Refriango, engaged in extensive product innovation and R&D to break into Angolan domestic consumer market (Sampaio 2014). In addition, state-led investment in infrastructure spurred demand for building materials and incentivised domestic production (Wolf 2017). On the back of demand increases for building materials in the context of a continent-wide Chinese-induced infrastructure boom, Nigeria emerged as the largest cement producer in sub-Saharan Africa. Findings of Itaman and Wolf (2021) suggest the development of large-scale

organisational capabilities and productivity increases in Dangote Cement, Nigeria's leading cement manufacturer, was motivated by the prospect of monopoly profits in expanding markets.

3. The possibilities of and limitations to demand-side policy in support of structural transformation

Establishing that demand growth can help the implementation of industrial policy and further ST leaves the question which policies can achieve such a virtuous cycle. This section shows that the relationship between demand growth and ST was advanced by two bodies of theory whose specification of the demand problem is conceptually different. Theories in the Kaldorian tradition point to demand problems that emerge when vertically linked industries grow at different paces, which can among other result in imports outpacing exports and therefore in foreign exchange crises. Theories in the Keynesian and Kaleckian tradition, on the other hand, point to demand problems that emerge when purchasing power created in the production process is withheld from investment or consumption either due to unfavourable expectations about future economic conditions (Keynesian tradition) or due to unfavourable distributional dynamics (Kaleckian tradition). Given their conceptually different understanding of the demand problem both bodies of theory reach different conclusions on which policies can unleash and sustain demand-led ST, policy debates revolving around whether demand growth should be led by domestic or external sources of autonomous demand (i.e. by government spending or exports) and to what extent income distribution is a relevant determinant of domestic demand growth. This paper argues that both Kaleckian- and Kaldorian-type demand problems need to be addressed simultaneously to support a virtuous circle of demand-, output and productivity growth.

The common starting of demand-led theories of ST is that investment and productivity growth adjust to the growth of demand. Hence demand growth is the ultimate driver of cumulative causation. Only if there is growth in demand, will productivity increases be followed by increases in employment (Storm and Naastepad, 2005; Storm, 2020). The bodies of theory diverge, however, on the question how increases in demand come about and by extension which policies can bring these about.

Theories in the Kaldorian tradition start from Kaldor's premise that demand growth for industrial output is contingent "demand for their goods coming from *outside* the industrial sector" (Kaldor 2007: 57), i.e. 'autonomous' demand, because expenditures derived from the production process itself cannot exceed production costs and consequently cannot serve as a source of profits (Kaldor 2007: 33). According to Kaldor, the two fundamental sources of autonomous demand are agricultural and export demand. Initially, the growth of productivity and purchasing power in the agricultural sector paces industrial output growth but, over time, exports become the dominant source of autonomous demand and growth (of the industrial sector) becomes *export-led* and *balance of payments constrained* (BOCG).

As no country can permanently run a trade deficit, the pace of structural change is constrained by world market demand for current domestic production. This is because income and price elasticities for exports from developing countries are typically lower than their income and price elasticities for (capital goods) imports. Therefore export demand constrains an economy's ability to pay for the (capital goods) imports necessary for (ongoing) production processes (Thirlwall, 1997: 380). To address export demand as a structural constraint, Kaldor proposed to promote industrial specialisation and export expansion using IP to increase competitiveness in sectors that would lead to a rise (decline) in the economy's income elasticity of exports (imports) (Toner 1999; see also Thirlwall 2013). A sub-set of theories in the tradition of Brazilian New Developmentalism argues that IP to build capacity in sectors with high export growth potential needs to be supported by an exchange rate regime that makes domestic firms internationally competitive for a given technology or productivity gap, i.e. by an undervalued exchange rate (Bresser-Pereira and Rugitsky, 2018; Oreiro et al., 2020; Gabriel et al., 2020).

At the same time, BOCG- and New Developmentalist models suggests limits to the degree to which demand growth can support ST because exogenous rises in export demand and increases in domestic investment demand can leak into imports for which current production capabilities have to pay in the form of exports. Given such limits to demand stimuli, theories in the Kaldorian tradition caution against

policies relying on domestic sources of autonomous demand such as government spending because such a growth trajectory, they argue, will face balance of payments crises (Bresser-Pereira and Rugitsky, 2018; Oreiro et al., 2020).

Ultimately then, models in the Kaldorian-Thirlwallian tradition propose a limited role for demand-side policies in support of ST despite starting from the premise that CC is demand constrained. This follows from the nature of the demand constraint on (industrial) output growth Kaldor specified, which was explored in a debate between Dutt (1992) and Thirlwall (1992). The Kaldorian-Thirlwallian demand-constraint stems from differences in productivity growth across sectors but there is no independent investment function, and all savings are reinvested. In fact, an independent investment function is deliberately excluded by Thirlwall (1986). Yet, Kaldor showed that even if all profits are reinvested, shortfalls in demand arise: If sectors are linked through reciprocal supply- and demand-chains and there are differences in the rates at which the value of their output and therefore purchasing power grows, adjustment must happen through quantities because the price of labour cannot fall below a minimum subsistence threshold (Kaldor 1975). This differs from the Keynesian forward-looking expectations about effective demand and leakages of purchasing power created in the production process in the form of money withheld from consumption and investment (Dutt 1992). This absence of a Keynesian investment function explains the Kaldorian focus on demand from outside the (domestic) manufacturing sector and the disregard of endogenous forces of demand contraction.

Demand-led theories of growth and ST in the Keynesian and Kaleckian tradition place greater emphasis on such endogenous drivers of demand. Simultaneous growth in exports is feasible but the world economy as whole is a closed economy and cannot be export-led (Palley, 2006). Initially markets must form in one or more constituent parts of the world economy and the factors driving growth of exports and domestic sales are one and the same if not explored by Kaldor in the absence of an investment function. Without understanding of factors driving demand growth endogenously and policies supporting domestic demand structures, an export-led growth strategy can amplify deflationary forces, in particular if based on wage-repression or fiscal austerity (Palley, 2021). If export-

competitiveness is achieved through wage-repression, this undercuts vital sources of domestic purchasing power and limits export earnings as terms of trade for low value added manufacturing products decline in a race to the bottom (Sarkar and Singer, 1991; Razmi and Blecker, 2008). All countries need exports to cover for their imports. For developing economies in particular, export revenues remain key to sustain ST, not least because production will initially be very import-dependent. However, if export-competitiveness and incentives for capital accumulation (even if in the right sectors) are the exclusive focus of policy and the development of domestic demand structures is neglected, the result are additions to global supply without additions to global demand (Palley, 2006; Palley, 2021).

What is more, financialisation and the polarisation of income and wealth resulted in stagnating demand-regimes in the global North (Stockhammer, 2012). Export markets, therefore, are not necessarily expanding dynamically especially if and where lead firms can exercise their structural power in GVCs. Exports in hyper-specialised value chains such as automotive parts, for instance, may not allow production volumes necessary for the realisation of increasing returns to scale (Wuttke, 2021) and small profit margins in hyper-competitive value chains such as textiles can lead into learning traps (Whitfield and Staritz, 2021).

Theories in the Keynesian tradition therefore see macroeconomic demand-side management through expansionary fiscal and monetary policy (Nomaler et al., 2021; Storm, 2020; Chang and Andreoni 2020; Nissanke 2019; Storm and Naastepad, 2005) or public procurement (Edler and Georghiou, 2007; Landini et al., 2021) as an important counterpart for successful implementation of IP. Theories in the Kaleckian tradition propose, in addition, that the mechanisms, which sustain the growth of demand, are closely linked if not reducible to the distribution of income and wealth. Given that workers' and subsistence communities' propensity to consume is higher than that of capitalists', a re-distribution of income towards them implies higher effective demand. Focussing on developing economies, Kalecki (1954) shows that, as such, domestic markets in developing economies are not too small. In practice, however, the growth of domestic demand is constrained by monopolistic market structures and the

structural power of rentiers, which work to undermine the purchasing power of workers and (rural) subsistence communities respectively. Theories in the Kaleckian tradition therefore propose minimum wage policies and core labour standards to sustain domestic demand growth (Palley, 2006; Palley, 2004; Storm and Capaldo 2018). Kalecki (1954) further emphasised that, in economies with a large informal sector, supporting demand is not only contingent on wage growth in line with productivity but more generally on redistributive public spending favouring the most deprived classes (see also Razmi, 2016). In line with Keynesian thought, Kalecki (1954) further argued that redistributive spending should be complemented by state-led investment programmes. Financing them through taxation of profits and the rich would simultaneously reduce demand for imported luxuries and avoid speculative hoarding.

Theories in the Kaldorian-Thirlwallian tradition caution against policies supporting domestic demand growth on the grounds that such a growth path will face BoP crises (Bresser-Pereira and Rugitsky, 2018; Oreiro et al., 2020). In a similar vein, Aboobaker (2019) cautions against applying theories of wage-led growth to developing economies on the ground that demand multipliers are typically weak because domestic demand is driven by elites' spending on (imported) luxury goods and production capacity to cater for increases in demand does not necessarily exist. Yet, further dissecting the nature of the Kaldorian demand constraint reveals that the policy conclusions of the two bodies of theory need not be incommensurable. Domestic-demand led growth, whether supported by government spending or income redistribution, can be externally sustainable provided such demand stimuli are closely aligned to support for productive capacity in relevant sectors. In fact, the Kaldorian demand constraint is ultimately a supply constraint which stems from differences in productivity growth across sectors and differences in demand-elasticities (Dutt, 1992). Therefore, the import-elasticity of demand in BOPC-growth models ultimately reflects productivity-/ capability constraints in backwardly linked productive activities, such as agricultural inputs or imported machinery. Hence, domestic demand-side stimuli have to work together with industrial policy along the entire supply chain, in particular agricultural inputs. Kalecki (1954) recognised this and emphasised the need to support agricultural supply (see also

Storm, 2015; Storm, 2020). This conclusion is equally critical for the effectiveness of the New Developmentalist proposition to support manufacturing production with an undervalued exchange rate. In contexts where the import-intensity of production is high and does not improve (as is the case in late-late industrialiser such as Nigeria), this measure will be less effective. Moreover, Kalecki's (1954) proposition is one of altering domestic demand structures away from luxury consumption to sustain larger domestic demand multipliers. If coupled with IP support in basic wage-good industries such as food and beverages, such faster domestic demand growth can be externally sustainable.

Nevertheless, policy design needs to take into account country specific factors like income- and price elasticities of exports and the domestic demand regime. Razmi (2015a) shows that if the domestic demand regime is profit-led or contains wage-led and profit-led segments, increases in the wage-share will have conflicting but overall growth-restricting impacts. However, Storm (2020) and Storm and Capaldo (2018) show that this is contingent on the price elasticities for imports and exports which tends to be low for late-industrialisers. When the Marshall-Lerner condition is not satisfied, which is typically the case, aggregate growth will not be hurt by an increase in the wage-share even in a profit-led, export-oriented demand regime.

Overall, the above considerations call for a close alignment of demand-side and supply-side policies and demand-side policies addressing Keynesian, Kaleckian and Kaldorian-type demand problems, including government spending, income redistribution and capacity development in the right sectors. Subject to the domestic demand regime, import-intensity of manufacturing production and price sensitivity of exports and imports in specific economies, domestic demand growth can be externally sustainable and work alongside and as a basis for export growth.

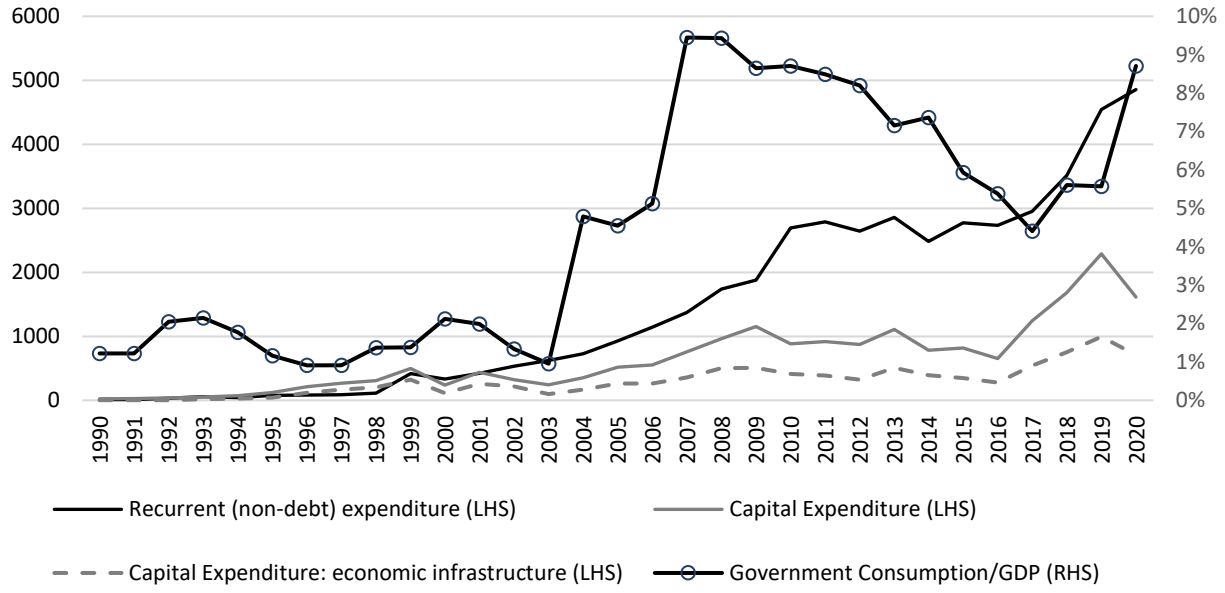
4. Context and research design

Since 2002 Nigeria intensified its industrial policy efforts with its so-called Backward Integration Policy (BIP), which made benefiting from import quotas or concessions on tariffs or levies in some sectors contingent on demonstrating a commitment to building domestic supply capacity and new

investments qualified for tax exemption for up to seven years (Akinyoade and Uche, 2018). Initially designed for cement and beverages, the policy was later extended to sugar, rice, tomato paste, oil and gas and textiles though success in sectors other than cement was limited when measuring processing activities and production of inputs (McCulloch et al., 2017).

At the same time, there was a substantial increase in government spending, oscillating between 5 and 9% of GDP since 2004 up from 1-2% between 1981 and 2003 (Figure 1). Government investment also increased, government capital expenditure focussing in particular on economic infrastructure as part of wider national infrastructure investment plans to rehabilitate old and develop new road, rail, transportation and power infrastructure (Federal Republic of Nigeria, 2015; Federal Republic of Nigeria, 2020). Examples of some of the largest projects include the 3GW Mambilla hydropower project, the Lagos-Ibadan and Port Harcourt- Maiduguri Railway, the Lekki deep seaport and new airport terminals in Lagos, Abuja, Port Harcourt and Kano. China played an important role in financing and executing many infrastructure projects. Between 1998 and 2019, Chinese construction firms have carried out construction projects worth $46.2 billion in Nigeria, second only to Angola ($66.8) in SSA. Some of these construction projects were financed by lending from Chinese state-owned banks. Between 2000 and 2019, Nigeria has obtained $6.7 billion in loans from Chinese SOBs (calculations based on CARI-SAIS). Other infrastructure projects involved public private partnerships (PPP) implemented through the Nigeria Sovereign Investment Agency which overseas InfraCo, a PPP with seed capital of 1 trillion Naira (about $2.6 billion) and Presidential Infrastructure Development Fund (Games, 2022).

Figure 1. Nigeria Government consumption and Investment (Naira billions and % of GDP)



Compiled from CBN 2020 Statistical Bulletin Real Sector and CBN 2020 Statistical Bulletin Public Fianances

To understand how Nigerian manufacturing firms respond to their macroeconomic environment and through which channels investment is induced or curbed, this article uses a mix of quantitative and qualitative data. To understand patterns of fixed capital accumulation, output and productivity growth, we draw on the financial statements (income statement, balance sheet and cash flow statement) of NSE-listed manufacturing companies for the period 2002-2019 accessed through Bloomberg. To trace the distribution of value-added between profits, wages and taxes, we compiled the value-added statements of NSE-listed firms on the basis of their annual reports.

These quantitative data were combined with a systematic review of qualitative information derived from the annual reports published by NSE-listed manufacturing firms. Addressing the shareholders, senior management communicate in written statements how they perceive reasons to expand or divest and justify their business strategies. These statements, therefore, provide information on the main drivers and constraints to these firms' investment and their competitive behaviour. Using NVivo, the annual reports were systematically screened for drivers of and constraints to investment activities. The sample included a total of 235 reports from 36 out of the listed 44 manufacturing companies, reports ranging from 2009-2020 financial year.

This combination of quantitative and qualitative data allows for a holistic study of the structures and causal mechanisms of investment decisions of companies. Focussing on listed manufacturing firms limits the sample to Nigeria's largest manufacturing firms but information contained in firms' income statements, balance sheets and cash flow statements allows for more detailed examination of firm-level accumulation dynamics than what is feasible based on value added in the national accounts.

As of 2020, there are 44 manufacturing firms listed on the NSE, which split into 20 capital goods producers and 24 consumer goods producers along different lines of activities with some clusters of firms operating in the same sector, such as paints, cement, flour, salt, breweries and health care products (Table 1). Producers of intermediate production inputs such as cement were counted as capital goods producers because they only indirectly rely on final consumer demand.

Table 1. Nigerian NSE listed manufacturing firms by activity

Sector	**Sub-sector**	**Number of companies**
All manufacturing		**44**
Capital goods		**20**
	Building materials	*10*
	Packaging	*2*
	Oil and gas	*2*
	Fertilizer	*1*
	Other capital goods	*5*
Consumer goods		**24**
	Food	*11*
	Beverages	*5*
	Pharma	*4*
	Cosmetics	*1*
	Furniture	*1*
	Plastics	*1*
	Stationary	*1*

5. Accumulation dynamics in NSE-listed manufacturing firms: from government spending and construction boom to increases in domestic demand for manufactured goods

The increase in government spending and investment, which was combined with backward-integration policies to encourage supply capacity in selected sectors, constitutes a policy mix in line with Keynesian demand-led ST tradition (Landini et al., 2021; Nomaler et al., 2021; Storm, 2020). This section shows

that this policy mix was critical to accelerate increases in capital formation, output and productivity in the Nigerian manufacturing sector. Evidence from the annual reports shows that perceived increases in demand were critical in firms' investment decisions across all sectors. However, capital accumulation, output- and productivity growth and labour absorption varied substantially across sectors, expanding most dynamically in the capital goods sector especially in building materials and lagging in the consumer goods sector, especially in food and beverages. The latter is the largest Nigerian manufacturing sub-sector in absolute terms and therefore ST as a whole remained sluggish.

Nigerian manufacturing firms have responded strongly to increases in demand. Case study evidence from Dangote Cement established that productive investment, output and productivity increases were supported by rapidly rising demand for cement (Akinyoade and Uche 2018; Itaman and Wolf 2021) and that there is little evidence for speculative financial investment or disproportionate outflows to shareholders (Itaman and Wolf, forthcoming).

Demand growth was equally an essential driver of capital accumulation for the rest of the NSE-listed manufacturing firms, whether consumer and capital goods producers, as evidenced by the statements of senior management. Managers specifically indicated that they undertook capital investment because of perceived or anticipated increases in demand as illustrated by the selected quotes below.

> *(…) these projects (….) will come on stream to enhance our ability to meet the increasing demand for our products throughout Nigeria. (Guinness 2010)*
>
> *The new factory extension (…) will [be] enabling us to fulfil the strong consumer demand for our Food Drink offerings. (Cadbury 2012)*
>
> *(…) we are positioning your Company to be the leading Fast Moving Consumer Goods (FMCG) manufacturer in Nigeria. (…) we made significant investments, not only in increasing plants and machinery capacity but also in improving human capabilities (…). (Honeyflour 2012)*

The beer market remains a very attractive long-term investment opportunity. The prospect for future growth remains strong (…) Capital expenditure will increase as we continue to invest on new frontiers with extension of facilities (…). (International Breweries 2014)

The average Nigerian's purchasing power and consumer spending drive our business (…). (Beta Glass 2013)

We also remain focused on meeting the demand in Nigeria and as such, we increased our capacity by 3Mt in Obajana. (Dangote Cement 2020)

Evidence from the annual reports further suggests that managers responded positively both to demand-creating/ stabilising measures and to BIP supply-side incentives.

A positive effect of the fiscal stimuli packages (…) resulted in the improved economic growth measured by the real GDP rate. (Presco 2010)

The government (…) demonstrated commitment to (…) local manufacturers in the procurement of locally manufactured drugs. These developments served as great encouragement to the industry (…). (Fidson 2016)

[T]he federal government has implemented a new minimum wage for civil servants. This is expected to boost consumer spending during the year. (PZ Cussons 2020)

[T]he full five-year Pioneer Tax Incentive were a major factor in deciding to invest billions of dollars building them. (Dangcem 2017)

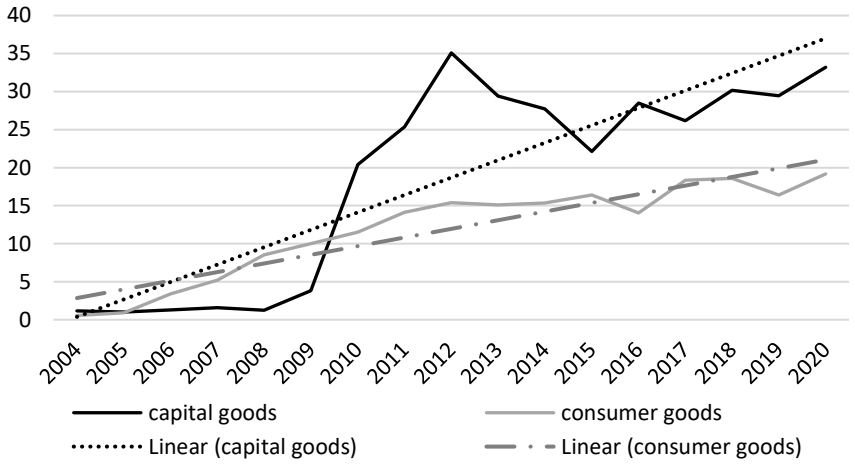
The Nigerian Sugar Market has seen an increase in investment activity during the year owing to the various initiatives that were prompted by the implementation of the Federal Government's National Sugar Development Plan. (Dangote Sugar 2014)

Substantial capital formation, output and productivity growth occurred across all NSE-listed manufacturing firms, the stock of physical capital increasing at an average annual rate of 21% and value added at an average rate of 30% each year across all firms (**Table 2**).

Table 2. Average yearly growth rates of capital stock, value added, wages, profits and taxes			
Average yearly growth rates (2002-2019)	**All NSE-listed manufacturing**	**NSE-listed consumer goods**	**NSE-listed capital goods**
Capital Stock	21%	14%	26%
Value added	30%	22%	40%
Workforce	2%	-2%	13%
Compiled based on value-added statements of NSE-listed companies			

Increases in value added per worker suggest productivity increases in both capital and consumer goods producers, if slower among the latter (**Figure 2**).

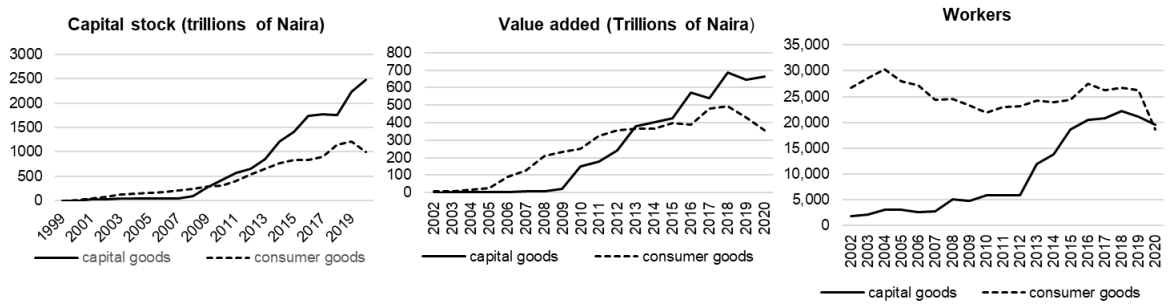
Figure 2. *Value Added Per Worker (Millions Naira)*



Compiled based on value added statements of NSE-listed firms

However, while growing and realising productivity increases, the consumer goods sector expanded less dynamically than the capital goods sector. The stock of physical capital grew on average 14% each year in the consumer goods sector against 26% in the capital goods sector. Value added increased at an average annual rate of 22% in the consumer goods sector against 40% in the capital goods sector (**Table 2**; **Figure 3**). Crucially also, productivity increases were not labour absorbing in the consumer goods sector, where the number of workers decreased at an average annual rate of -2% (**Table 2**), oscillating between 25,000 and 30,000 workers. By contrast, the capital goods sector recorded a large increase in the number of workers after 2012, the workforce increasing from 5,813 in 2012 to 22,232 in 2018 (**Figure 3**).

Figure 3. Key Indicators by Sub-Sector: Capital Stock, Value Added and Worker



Compiled based on financial statements of NSE-listed companies

These trends emerging from the NSE-listed firms are consistent with aggregate output data by sector. The food and beverages sector is Nigeria's largest manufacturing sub-sector in terms of value added but expanded less dynamically than the cement and non-metallic minerals sector, whose share in total Nigerian manufacturing output increased from 4% in 2004 to 23% in 2020 (calculations based on CBN Statistical Bulletin 2020). Slow growth of the largest manufacturing sub-sector means that aggregate indicators of structural change increased sluggishly. Manufacturing accounts for 13% of GDP in 2020, up from 11% in 2004. Only 10% of Nigerian exports are manufacturing, against 87% crude petroleum in 2020 (calculations based on UN Comtrade). About 51% of Nigerian federal government revenue came from oil in 2020 (CBN 2020 Statistical Bulletin Public Finance).

Against this stands the success of individual firms, notably the cement conglomerates, which continue to expand and thrive financially on the back government IP support and domestic demand expansion for building materials. Nigeria's emergence as a leading SSA cement producer was led by two domestic conglomerates – Dangote and BUA – both with roots in the colonial merchant-capitalist class (Watts 1987; Forrest 1987). Both Dangote and BUA expanded their manufacturing activities domestically beyond cement including to basic consumer goods such as sugar, salt, seasoning, tomato paste, flour and rice as well as more recently petrochemical products like refined oil and fertilizers. Dangote also expanded its cement empire across SSA with subsidiaries operating in 7 SSA countries aside from Nigeria (Itaman and Wolf, 2021).

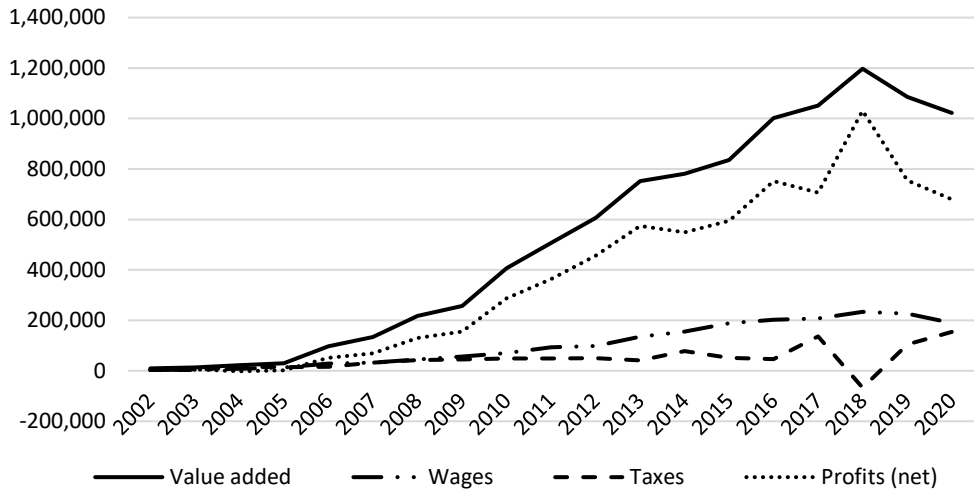
6. Understanding the reasons behind de-coupled growth of capital and consumer goods

While the statements by senior management revealed that investment decisions are strongly influenced by demand conditions, Nigeria's largest manufacturing sector, the food and beverages sector, grew less dynamically than the building materials sector and output growth was not labour absorbing. This section scrutinises what this reveals about the limitations of demand-led ST in the context of late industrialisation and argues that while government spending and investment increased, the Kaleckian and Kaldorian demand problems were not addressed by policy. Both the Kaleckian demand problem, stemming from lack of pro-poor distribution and skewed distribution between wages and profits, and the Kaldorian demand problem, stemming from limited supply side support for firms in backwardly linked agricultural activities, were relevant factors constraining the expansion of consumer goods production in Nigeria.

6.1. The unaddressed Kaleckian demand problem: demand stimulus does not work to generate large multiplier effects due to distributional dynamics

Non-labour absorbing output and productivity growth in the consumer goods sector suggests limited demand growth. In line with the predictions of Kalecki (1954), distributional dynamics worked in a way to limit potential second-round demand multiplier effects from employment on construction projects and in building materials manufacturing. Increases in wages and taxes lagged substantially behind profits (Figure 4). On average, value added grew by 30% per year, wages only by 27% and taxes by only 22% per year in all NSE-listed firms. By contrast, profits grew faster than value added across all NSE-listed firms but particularly so in the capital goods sector, where profits grew by 69% of average each year compared to 40% average annual growth of value added (**Table 3**).

Figure 4. Distribution of Value Added in NSE-listed manufacturing firms (millions of Naira)

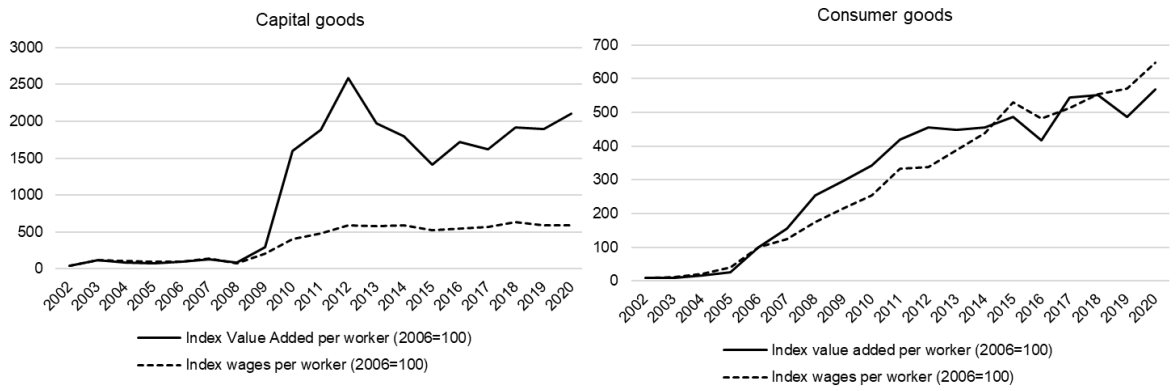


Compiled based on value-added statements of NSE-listed companies

Table 3. Average yearly growth rates of capital stock, value added, wages, profits and taxes			
Average yearly growth rates (2002-2019)	**All NSE-listed manufacturing**	**NSE-listed consumer goods**	**NSE-listed capital goods**
Value added	30%	22%	40%
Wages	27%	22%	30%
Profits	34%	25%	69%
Taxes	22%	16%	31%
Compiled based on value-added statements of NSE-listed companies			

The decoupling of value added per worker and wages per worker was mainly driven by the capital goods sector, where wages per worker stagnated since 2012. In the consumer goods sector, wages per worker increased in line with value added per worker (Figure 5).

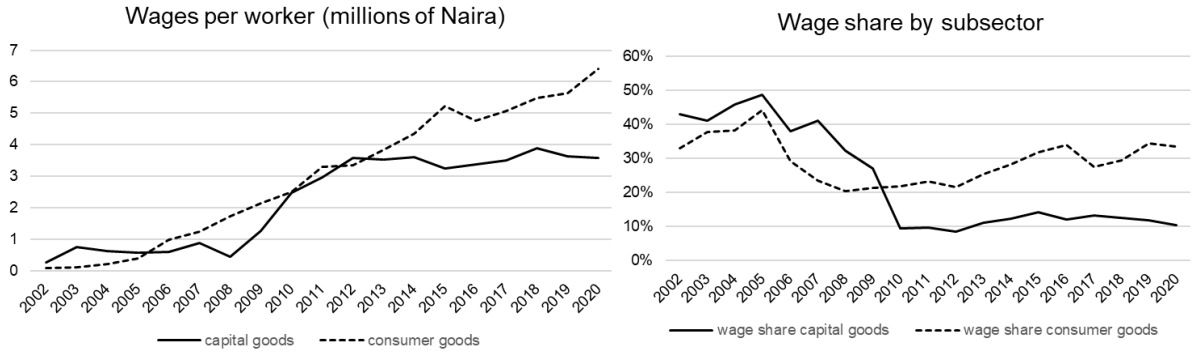
Figure 5. Index of value added per worker and wages per worker (2006=100)



Compiled based on value-added statements of NSE-listed companies

The wage share in the capital goods sector plummeted since 2007, dropping from 41% in 2007 to 9.5% in 2010 and oscillates around 10% since then. The situation in the consumer goods sector is slightly better. The wage share in consumer goods industries fell sharply from 44% in 2005 to 20% in 2008, then recovered and oscillates around 30% since 2015 (Figure 6). This suggests that the distributional dynamics within the fastest growing and most dynamically expanding Nigerian manufacturing sectors (i.e. the capital goods sector and within that building materials and cement) did not work to reinforce the growth of purchasing power.

Figure 6. Wages per worker and wage share by sub-sector



Compiled based on value-added statements of NSE-listed companies

Although it is impossible to ascertain the reaction of consumer goods producers had there been fewer leakages of purchasing power, evidence from the annual reports suggests that consumer goods

producers react very sensitively to any perceived contractions in consumers' disposable income as illustrated by these reactions to government policy:

> *There will be increased pressure on disposable income as the increase of VAT from 5% to 7.5% erodes the impact of the increase in minimum wage. (Nestle 2019)*

> *In 2021, the increase in electricity tariffs and fuel prices will continue to shrink the disposable income of families across Nigeria (…). (Nestle 2020)*

Unequal distribution of income also left the Nigerian demand base fragile when exposed to the external commodity price shock of 2014/15. The resulting devaluation of the Naira squeezed firms' revenues as rising price levels of foreign-sourced consumer staples meant consumers reduced their spending to cover the most essential goods.

> *Disposable income reduced drastically resulting in consumers making tough choices based on affordability and dire need. (Unilever 2016)*

> *The inability of government, especially at the States' level to pay workers' salaries (…) and pay local contractors has put severe pressure on consumer spending. This has manifested in weaker aggregate demand and compounded the issues facing FMCG companies. (…) The growth in the value segment is an indication of the shift in consumer spending patterns [due to the] squeeze on disposable income. (Guiness 2015)*

Consumer goods producers were affected harder because they were unable to pass down the increases in cost of sales they faced to consumers given their already constrained purchasing power.

> *Despite accelerating costs, declining purchasing power (…) allowed for only minimal retail price increases. The consumer was significantly stretched as inflationary pressures affected disposable income, which in turn affected sales volumes. (UACN 2015)*

> *Dwindling consumer income coupled with intense competitive pressure meant that businesses like ours could not take up prices to cover rising costs (…) (Unilever 2019)*

The devaluation-induced squeeze in final consumer demand also affected those capital goods producers which ultimately rely on consumer end markets such as glass bottle maker Beta Glass:

> *The restricted disposable incomes of Nigerians also had a subdued effect on the Company's business for some period during the year. (Beta Glass 2013)*

To some extent, the devaluation also affected the revenues of building materials producers through reductions in government spending:

> *(…) placed significant strain on government revenue and consequently its expenditure, which is a critical driver of activity in the construction sector (Lafarge 2016)*

However, Nigeria maintained government spending with the help of new loans for infrastructure projects from China, an increase in foreign reserves held in renminbi and a deal with the Industrial and Commercial Bank of China (ICBC) to extend the use of Chinese currency in Nigeria's trade finance arrangements (Africa Confidential, 2016). This stance on expansionary fiscal spending was maintained after the Covid-19 pandemic, when parliament approved $22.7bn new loans of which $17bn from China ExIm Bank for spending on transportation and electricity infrastructure (Africa Confidential, 2020). As a result:

> *Domestic demand defied the impact of Covid–19, demonstrating a strong market growth amidst the pandemic. On the back of this, the Company grew sales volume. (Lafarge 2020)*

In addition, Dangote Cement could benefit from its subsidiaries and expanding demand in other SSA countries:

> *Our Pan-African diversification has (….) provided us with essential foreign currency (…). Furthermore, we were able to borrow money in these countries' local currencies, thus reducing our exposure to foreign currency shortages in Nigeria. In addition, we began to generate foreign currency sales from exports of cement from Nigeria to Ghana. (Dangote cement 2016)*

The skewed distributional dynamics come out of domestic market concentration processes. The Nigerian cement conglomerates Dangote and BUA, which were the main beneficiaries of the BIP, played a systemic role in the unequal distribution of purchasing power. The three cement producers Dangote, BUA and Lafarge, are the largest employers in the capital goods sector employing 88% of workers in the capital goods sector in 2019. The three listed subsidiaries of the Dangote Industries (Dangote Cement, Dangote Sugar and Nascon) employed 51% of all workers, generated 33.8% of all revenue and 59.4% of value added and held 43.4% of the entire capital stock of NSE-listed manufacturing firms. Strikingly, despite employing more than half of the workforce, they paid less than one third of all wages (Table 4). These monopolisation processes in the Nigerian economy favoured disproportionate growth in profits relative to the purchasing power of wage-earners and subsistence collectivities. High levels of physical capital accumulation allowed Dangote Cement to realise economies of scale and scope, which brought down the firms' cost function. Whilst these were productive investments, they also served to consolidate Dangote's dominant position and pricing power in the market (Itaman and Wolf 2021) as well as within Nigerian politics (Odijie and Onofua, 2020).

Table 4. Dangote businesses as share of NSE-listed manufacturing and building materials firms

	2010	2020
Number of workers	15.2%	50.9%
Revenue	22.9%	33.8%
Value added	36.1%	59.4%
Capital Stock	40.8%	43.4%
Wages	13.1%	28.0%

Compiled based on financial statements of NSE-listed companies

6.2. The unaddressed Kaldorian demand problem: lack of support for small scale suppliers of vertically linked production inputs

Furthermore, accumulation dynamics of NSE-listed manufacturing firms illustrate that domestic demand creating policies have to go together with targeted supply-side support along the entire supply chain. Industrial policy support in Nigeria favoured primarily politically well-connected conglomerates

with roots in the colonial merchant capitalist class (Watts 1987; Forrest 1987) and providing limited support to small-scale vertically linked producers of (mainly agricultural) inputs to the manufacturing sector (Itaman and Wolf 2021). Agricultural policies of the Buhari government typically relied on trade policy measures and attempts to improve access to finance. For example, to support domestic rice production, the government imposed high import tariffs (temporarily even a ban), restricted foreign exchange for such imports, directed banks to increase their loans to deposit ratio to 60% to encourage lending and established credit facilities for smallholder farmers through the central bank (Smith, 2019; Nwuneli, 2019). These measures do not address the supply constraints faced by smallholders such as lack of rural roads, seeds, fertilisers and irrigation systems. 88% of farmers are smallholders and 72% are classified as living in extreme poverty. Support schemes like the central bank's credit facility often fail to reach them due to lack of effective communication resulting in patchy registration and coverage of the schemes leaving them largely ineffective (Nwuneli, 2019). This left manufacturing production highly import dependent with as much as 90% of raw materials being imported in many firms. Importantly also, capital goods production in Nigeria is by and large not an input for consumer goods production, with few exceptions like the glass bottle producer Beta Glass. Hence the expansion capital goods producers does not serve as a source of foreign exchange savings for consumer goods producers.

Against this context, the exogenous fall in world demand for Nigerian oil exports constrained the pace of ST as indicated in the Kaldorian growth model. The devaluations of the exchange rate following the global fall in oil prices in 2014/15 triggered substantial increases in cost of sales.

> *The forex shortages meant that many companies were unable to pay foreign suppliers for goods and services or had to do so at gravely expensive rates. (Guinness 2016)*
>
> *The acute shortage of foreign exchange also led to scarcity and huge increases in the prices of the imported inputs. (Livestock 2018)*
>
> *The forex impact in terms of availability, accessibility and exchange rate was huge and significantly affected our business, as almost 90% of our raw materials are imported. (Meyer 2016)*

Consumer goods producers were doubly hit by the negative external demand shock through increases in their costs stemming from domestic supply bottlenecks and reductions in their revenue stemming from unfavourable distributional dynamics within highly concentrated markets.

6.3. Other problems

Beyond these Kaleckian and Kaldorian demand problems, the evidence from the annual reports reveals that manufacturing production was also negatively affected by other supply-side and political factors. Despite substantial infrastructure spending, Nigeria's infrastructure gap remains large. Most NSE-listed manufacturing firms have indicated ongoing problems with transport and electricity infrastructure driving up their cost of production.

> *The deteriorated road network has long been a hindrance to cost-effective transportation of goods. (BOC Gas 2014)*

> *Infrastructural deficiencies and inadequate power supply for operation were key among the problems faced by the sector. (Livestock 2019)*

Finally, Nigerian manufacturing firms also indicated that ongoing political instability was a factor negatively influencing investment decisions:

> *The Nigerian economy is threatened by insecurity form (…) terror attacks. The effect on business operation (…) is negative. Insecurity undoubtedly hampers business growth and the investment climate. (International Breweries 2013)*

7. Conclusion

This paper built on an emerging literature on demand-led ST, which suggests that demand growth in line with productivity growth can positively complement the implementation of industrial policy. The question remains how policy can support the growth of demand in a way that furthers ST, in particular

whether demand growth should be led by government spending and exports and to what extent income distribution is a relevant determinant of domestic demand growth.

This paper showed that demand growth was a driver of capital accumulation among NSE-listed manufacturing firms. The policy mix supporting growth of demand at the macrolevel and supply-capacity in selected sectors, was critical to accelerate physical capital formation as evidenced by the systematic review of senior management statements published in the annual reports of NSE-listed manufacturing firms, showing that investment decisions strongly responded to increases in demand and to policy measures supporting demand growth.

Whilst NSE-listed manufacturing firms achieved output- and productivity growth, these were slower and not labour absorbing in the consumer goods sector. The paper found evidence that the failure to address demand problems of different nature was a contributing factor. Keynesian-/Kaleckian demand problems arise when purchasing power created in the production process is withheld from consumption or investment. The value-added statements of NSE-listed manufacturing firms revealed substantial leakages of purchasing power created in the most dynamically expanding sub-sectors (building materials), where the growth of profits outpaced growth of value added, wages and taxes substantially. Evidence from the annual reports showed that consumer goods firms negatively responded to squeezes in consumers' disposable income brought about by policy or external shocks like the oil price crisis of 2014/15. The Kaldorian demand problem arises when purchasing power grows at different paces in sectors that are linked through demand- and supply-chains. In Nigeria, manufacturing production remained highly import-dependent due to slow output growth in backwardly linked suppliers of (mainly agricultural) inputs, which meant that the devaluation of the currency after the oil price crisis not only led to a revenue squeeze due to the fall in consumers' disposable income but also to substantial cost increases due to increased prices of imported inputs.

These findings contribute to ongoing policy debates around demand-led ST. The Nigerian case illustrates that increases in government spending and investment are not enough to support domestic

demand growth. Government spending was maintained throughout the oil price crisis 2014/15 and after the Covid-19 pandemic but unequal growth of purchasing power meant that consumers had to substitute their expenditure towards the most essential goods given structural inflationary pressures. The Nigerian case also showed that for domestic demand growth to be externally sustainable, output in backwardly linked sectors has to grow at sufficient pace. Relatedly, the effectiveness of some policy suggestions like undervalued exchange rates, hinges on sufficient supply capacity in backwardly linked sectors. In contexts where manufacturing production remains highly import-dependent, a devaluation will hurt manufacturing firms.

Therefore, supporting demand-led ST relies on simultaneously addressing Kaleckian/Keynesian demand problems by supporting domestic demand growth through government spending and redistributive policies and addressing the Kaldorian demand problem by supporting sufficient supply-capacity growth not just among large-scale processors but also in key backwardly linked sectors, notably among smallholder suppliers of agricultural inputs. Under these conditions, supporting domestic demand growth and tapping into growing export markets need not be seen as contradictory policy options.

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