Structural Change and Economic Dynamics 67 (2023) 347–358

Contents lists available at ScienceDirect

Structural Change and Economic Dynamics

journal homepage: www.elsevier.com/locate/strueco

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

Christina Wolf

University of Hertfordshire, UK

ARTICLE INFO

JEL codes:
L16
O11
O14
O25
O55

Keywords:
Demand-led structural transformation
Industrial policy
Nigeria
NSE-listed
Manufacturing firms

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 effectively complement industrial policy 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, 2019). If the rationale for why IP is needed is well established, the successful implementation of IP can be challenging 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 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, or 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.

E-mail address: c.wolf@herts.ac.uk.

https://doi.org/10.1016/j.strueco.2023.08.010
Received 20 June 2022; Received in revised form 7 June 2023; Accepted 31 August 2023
Available online 9 September 2023

This article focusses on Nigeria's stock-exchange (NSE) listed manufacturing firms as a critical case where demand-led policies were conducive to 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, 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, 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 SSA, 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 with IP support in place and 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. When the Nigerian economy was exposed to the commodity price shock of 2014/15, the resulting 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 the uneven distributional impact of inflation negatively impacted consumer goods producers and was a factor holding back their expansion. There were no macro-level distributional policies in place to cushion against such uneven distributional impacts of inflation. The value-added statements of NSE-listed manufacturing firms show that distributional dynamics in NSE-listed firms are symptomatic of this trend and reinforce it, with limited demand multipliers emanating from the most dynamically expanding sectors. 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) given concerns about the macroeconomic sustainability of demand injections in countries with limited productive capabilities and the assumption that export demand is unlimited from the perspective of an individual economy. Amsden (1990), for instance, argues that developing countries are not confronted with problems of deficient demand, quite the opposite:

> *"(…) the underconsumptionist argument is untenable. The problem in developing countries is not that of too little effective demand but of too much, as different income groups and social classes struggle over the distribution of a puny pie. Governments are not confronted with the need to raise effective demand, but rather to dampen aggregate spending in order to check inflation. What they must raise is more foreign exchange, savings and public revenues; for these, and not effective demand, are the constraints on increasing the pie's absolute size. Moreover, any country, particularly a small one, can produce without regard to the size of its home market, so long as it can export. The problem is that most Third World countries cannot export because they are not competitive internationally, despite low wage rates. (…) Ultimately, therefore, as the Korea experience suggests,* ***the problem of industrialization is a problem of increasing productivity, not demand.****" (Amsden 1990: 11, emphasis added)*

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, 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 points to a circular cumulative relationship between output and productivity in the manufacturing sector (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 SSA. 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, which 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 export demand 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, 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, 2022) 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, 2004; Storm and Capaldo, 2019). 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.

Further dissecting the nature of the Kaldorian demand constraint reveals that the policy conclusions of the two bodies of theory need not be incommensurable. The core take-away from the Keynesian/ Kaleckian literature is that endogenous sources of demand are essential because there is a tendency for purchasing power created in the production process to be withheld from consumption or investment, given global deflationary dynamics as a result of financialisation and developing countries' race to the bottom. 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.

Typically, achieving output and productivity increases takes more time than for demand to become effective as tacit knowledge and productivity increases by no means immediately follow from demand increases. The core question therefore is for how long (domestic) demand-stimuli can be externally sustainable. Historically, successful late-industrialisers like South Korea and Taiwan benefitted from large-scale external financial support, which alleviated balance of payments constraints (Wade, 2018). Late-late industrialiser like Nigeria periodically see commodity price booms, which can turn into windows of opportunity. Increased demand for raw materials from China and improving terms of trade relaxed the balance of payments constraint in SSA economies until 2015 (Kaplinsky and Farooki, 2012; Bagnai et al., 2016). More recently, the expansion of Chinese construction activities overseas supported by state-backed lending from Chinese policy banks in the context of China's 'going out strategy' and BRI initiative increased capital inflows counteracting balance of payments constraints.

Beyond favourable external conditions, policy needs to support output and productivity growth along the entire supply-chain to reduce

import-dependence of manufacturing production and cost pressures stemming from backwardly linked sectors. Kalecki (1954) recognised this and emphasised the need to support agricultural supply (see also Storm 2015, 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.

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, 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 to 2% between 1990 and 2003 (Fig. 1). Public spending on infrastructure also increased 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, 2020). Public spending on economic infrastructure such as energy and transportation infrastructure is difficult to measure because it involves a multitude of public and private, domestic and foreign actors (Fay et al., 2019). For Nigeria, data on central government expenditure on economic infrastructure are available but these data exclude infrastructure development by local government, public private partnerships (PPP) and SOEs, all of which are significant investors in infrastructure. Nigerian PPP infrastructure projects are 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). To this add the operations of foreign SOEs, in particular Chinese state-owned construction firms which have played a critical role in executing Nigerian infrastructure projects, some but not all of which are financed by lending from Chinese state-owned banks (SOBs). Between 1998 and 2020, Chinese construction firms have carried out construction projects worth $46.2 billion in Nigeria, second only to Angola ($66.8) in SSA. These so-called Chinese overseas contracted projects (COPs), prominent examples of which include the 3GW Mambilla hydropower project and the Lekki deep seaport, measure the value of construction services completed by Chinese construction firms in a particular year, i.e. the service exports of Chinese SOEs in the construction sector. Often COPs and FDI are closely linked, Chinese SOEs entering the market as a contractor and eventually setting up subsidiaries, thereby adding to FDI in the construction sector. CCECC, which operate a subsidiary with nearly 20,000 employees in Nigeria, had a vital role in large-scale infrastructure projects including the construction of highways, the Lagos-Ibadan and Port Harcourt- Maiduguri railways, and new airport terminals in Lagos, Abuja, Port Harcourt and Kano (ENR, 2019). Given this complexity in accounting public infrastructure development, Fig. 1 presents two proxies for public sector construction activity, namely central government expenditure on economic infrastructure and Chinese contracted projects both as% of GDP. Both follow a pattern of broadly three phases – a first in which public infrastructure development increased between 2003 and the turn of the decade (COPs peaking somewhat later), which was followed by a contraction of infrastructure spending and a second acceleration since 2017. Such demand creation through public construction projects, if small in aggregate terms and well below what is needed to address Nigeria's infrastructure gap, was vital for the Nigerian building materials industry. CCECC, for instance, sourced cement, one of its core in the railway projects, exclusively from Dangote and Lafarge Nigeria (ENR, 2019).

To understand how Nigerian manufacturing firms responded to their macroeconomic environment and through which channels investment was 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 of NSE-listed manufacturing companies for the period 2002–2020 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

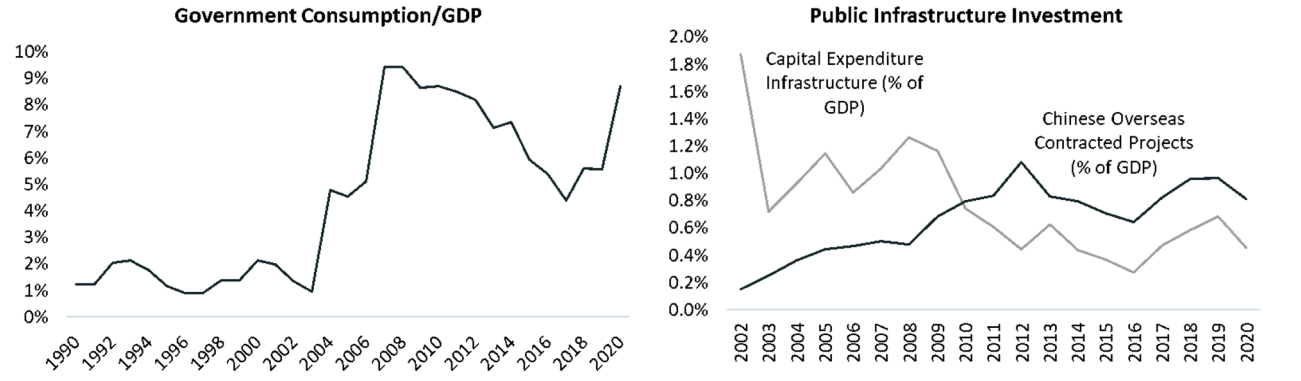

Fig. 1. Nigeria government consumption and Investment.

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 published between 2009 and 2020.

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 such as tracing the evolution of fixed capital formation and value added per worker, which is not feasible based on the information contained in the national accounts.

As of 2020, there are 44 manufacturing firms listed on the NSE, which split into 20 intermediate 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).

This segment of firms expanded remarkably and accounts for most of the expansion the Nigerian manufacturing sector, indicating the overall small reach Nigerian industrial policy. Between 2016 and 2020, NSE-listed manufacturing accounted on average for 9% of total Nigerian manufacturing value added. This share has increased from an average of 2.5% between 2002 and 2006, reflecting ongoing monopolisation processes, which themselves result from the type of IP incentives implemented in Nigeria. Large-scale conglomerates, often with roots in trading businesses with sufficient access to capital, were best placed to take advantage of privatisation and trade policy incentives, which formed the cornerstone of Nigerian IP measures. They therefore became the main beneficiary of IP and driver of its continuation. Given their position in the Nigerian manufacturing sector and their increasing economic and political muscle (Odijie and Onofua, 2020; Itaman and Wolf, 2021; Karkare et al., 2022), examining how the interplay between macro- and sector-level policies affected accumulation in this sub-set of firms is of particular interest.

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 NSE-listed manufacturing firms. 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 expanded more dynamically in the intermediate goods sector especially in building materials and lagged 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.

Table 1
Nigerian NSE listed manufacturing firms by activity.

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

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, 2022).

Demand growth was equally an essential driver of capital accumulation for the rest of the NSE-listed manufacturing firms, whether consumer and intermediate 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, 2017)

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

> *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 intermediate 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 (Fig. 2). On aggregate, productivity increases in the consumer goods sector were slower and not labour absorbing. Value added per worker increased from an average of ₦3.1 million between 2004 and 06 to an average of ₦32.1 million between 2018 and 20 in the intermediate goods sector against an increase from ₦3.3 to ₦17.6 million in the consumer goods sector over the same period. Bai Perron tests revealed statistically significant structural breaks in value added per worker occurring in 2009, 2012 and 2014 in the intermediate goods sector and in 2008, 2011 and 2017 in the consumer goods sector.

To investigate how these diverging productivity dynamics and structural breaks relate to sectoral and macro-level policy changes, Fig. 2 traces productivity increases for subsectors (Sugar, Beverages and Cement), which have benefitted from IP and macro-level demand-side policies to varying degrees. Because sugar and beverage production both rely on demand from final consumers, Fig. 2 distinguishes between periods when government spending as share of GDP has been increasing or declining (see Fig. 1). Cement, by contrast, is not primarily a private consumption good. To capture the macro-level demand-side policy environment, Fig. 2 distinguishes between periods when public infrastructure spending increased or decreased relative to GDP. Sector-specific supply-side IP events were marked for the year in which policies were introduced. Lastly, Fig. 2 highlights significant supply expansions by individual firms.

Productivity increases in the sugar and beverages sector coincide with periods in which there were both IP measures and an expanding macro demand-side policy regime, i.e. up until 2008. The period 2008 to 2018 in both sectors is marked by stagnating labour productivity. After 2018, government spending as share of GDP increased again but productivity dynamics in the sugar and beverages sector diverged. Overall, the sugar sector has benefitted from more far-reaching IP incentives. In 2003, the National Sugar Policy supported the privatisation and rehabilitation of existing sugar mills and refined sugar was subjected to an effective tariff rate of 60%. These IP measures, against the context of an expansionary domestic demand regime, attracted investment by large-scale conglomerates with sufficient access to capital. The Savannah Sugar company (part of the Dangote conglomerate), Sunti Sugar (part of the BUA conglomerate) and Lafagi Sugar (part of Flour Mills of Nigeria) came on stream in 2002, 2008 and 2009 respectively. By 2017, 90% of refined sugar was processed domestically. In 2012, the government introduced further IP measures to support further backward integration increasing duties and levies on raw sugar and making concessions dependent on investment in local production of raw sugar. Further foreign exchange restrictions were introduced in 2015. These sectoral policy measures had limited success. Nigeria remains a major importer of raw sugar and output per worker stagnated in sugar producing firms, which were the main beneficiaries of these policy measures.

The beverages sector benefitted from only limited sector-level IP support but productivity dynamics followed a similar pattern. In 2004, the Nigerian government introduced an import ban on 41 items

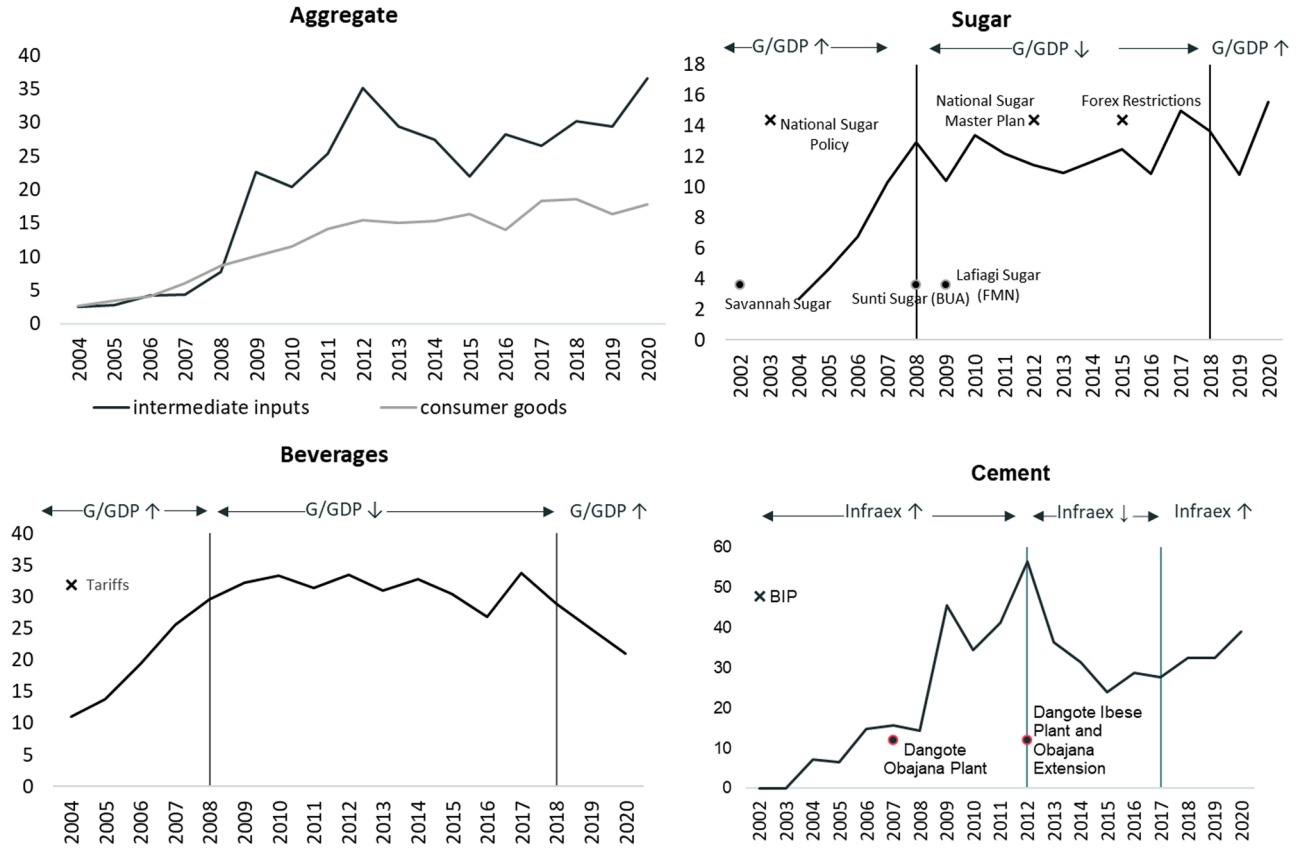

Fig. 2. Value added per worker (millions Naira).
Compiled based on value added statements of NSE-listed firms.

including water and soft drinks, whilst beer imports were banned in 2003. Against an expanding macro-policy demand regime, tariff protection encouraged investment and productivity increases. By contrast, the period when government spending declined as share of GDP, labour productivity stagnated.

Productivity increases in the intermediate goods sector closely mirror those in the cement sector. In 2002, the government introduced its backward integration policy for cement, which coincided with rapidly increasing demand for building materials as a result of public infrastructure development expansion. The overall result of these policy changes resulted in increases in domestic installed capacity from 2Mta in 2002 to 47.8Mta in 2020, making Nigeria the largest cement producer in SSA, and in substantial outward FDI of Nigerian cement manufacturers across SSA.

As for beverages and sugar, productivity dynamics correlate with both sectoral supply-side support and the macro-level demand policy regime. Upwards trajectories of labour productivity coincided with periods of increasing capital expenditure on infrastructure. However, labour productivity shows much stronger abrupt downturns. These downturns are not driven by fluctuations in value added, which increased consistently throughout the entire period. Instead, the downturns are related to periods when the workforce expanded very rapidly, suggesting that building tacit knowledge takes longer in capital intensive industries like cement. When public infrastructure spending and BIP incentives were first stepped up, there was only limited domestic supply capacity. Dangote Cement acquired privatised cement companies in 2000 (Benue) and 2002 (Obajana). Production lines in Obajana production were only constructed between 2004 and 2007. About two years after the construction of the Dangote factories, rapid productivity increase followed and existing plants reached full productive capacity under conditions of sustained capital expenditure on infrastructure.

Substantial declines in labour productivity in the cement sector occurred after 2012, driven by large expansions in capacity. In 2012, Dangote opened the 6 Mta Ibese plant (further extended to 12 Mta in 2014) and a third line of 5Mta capacity in Obajana (further extended to 13Mta in 2014). Between 2012 and 2015, the workforce in the cement sector increased from 3984 to 16,944. Resulting reductions in value added per worker suggest that labour productivity in capital-intensive sectors like cement relies substantially on tacit knowledge, which takes time to build up. After 2015, value added per worker returned to its long-term trend, supported by an acceleration of public infrastructure development in particular through Chinese COPs.

Other indicators also point to a less dynamic expansion of the consumer goods sector. The stock of physical capital grew on average 14% each year in the consumer goods sector against 26% in the intermediate goods sector. Value added increased at an average annual rate of 22% in the consumer goods sector against 40% in the intermediate goods sector (Table 2; Fig. 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 intermediate goods sector recorded a large increase in the number of workers after 2012, the workforce increasing from 5813 in 2012 to 22,232 in 2018 (Fig. 3). If productivity increases are not labour-absorbing, this indicates that the labour-saving effects of productivity growth were not outweighed by expanding markets and hence that demand constraints were binding.

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).

Taken together, increases in labour productivity and concomitant labour absorption are unlikely to be sustained without sustained growth in aggregate demand, meaning that macro-demand regimes matter as a necessary condition. However, productivity increases still critically depend on firm-level processes of technological learning, which need to be supported by IP, i.e. demand creation without targeted IP cannot sustain ST either.

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 propoor 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 productivity growth in the consumer goods

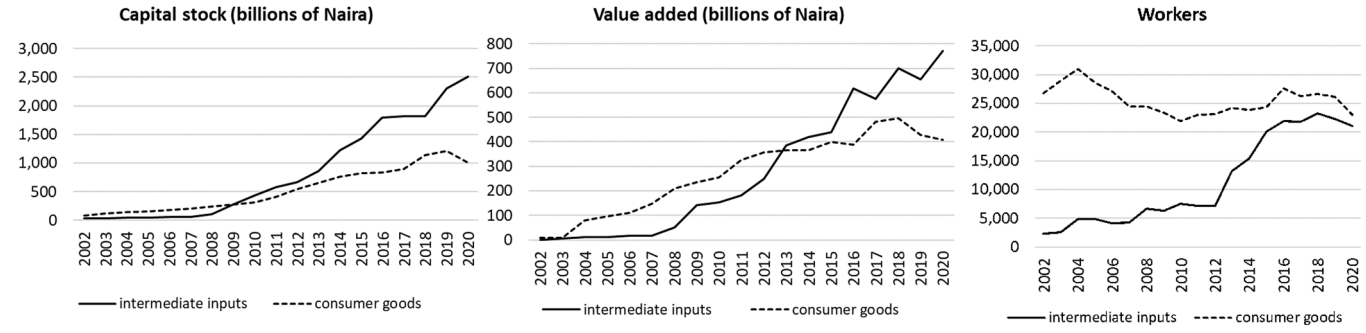

Fig. 3. Key indicators by sub-sector: capital stock, value added and worker.
Compiled based on financial statements of NSE-listed companies.

sector suggests limited demand growth. Evidence from the annual reports suggests that consumer goods producers react in general 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)*

In 2014/15, the Nigerian economy suffered an external demand shock following the global decline in oil prices, which led to a devaluation of the exchange rate and consequently high rates of inflation with uneven distributional implications, affecting foremost the spending decisions of households in the lowest income brackets. The 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)*

Given the uneven distributional impact of inflation, consumer goods producers 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 intermediate 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)*

By contrast, new infrastructure projects were kept alive, despite much worse macroeconomic conditions, 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). This continuation of infrastructure spending amid worsening macroeconomic conditions was integral for the operations of established Nigerian cement manufacturers:

> *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)*

However, macro-level distributional policies did not cushion against such uneven distributional effects of inflation. Neither wages nor daily expenditure of the lowest two income deciles have increased substantially since 2010. The wage share in Nigeria is low by absolute standards and has stagnated between 25% and 28% since 2009. Similarly, the daily expenditure that marks the cut-off point of the bottom 20% of the income distribution has barely increased since 2010 (Fig. 4). The stagnation of wages and expenditure of low-income households coincides with the period when labour productivity increases slowed down or stagnated in consumer goods producing firms (see Fig. 2).

Distributional dynamics in NSE-listed firms are symptomatic for this trend and reinforce it, with limited demand multipliers from the most dynamically expanding sectors. Purchasing power created in the most dynamically expanding firms were not passed down into wages or taxes, whose average annual increase lagged substantially behind that of profits. 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 intermediate goods sector, where profits grew by 69% of average each year compared to 40% average annual growth of value added (Fig. 5).

The decoupling of value added per worker and wages per worker was mainly driven by the intermediate 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 (Fig. 6).

Taken together, the distributional dynamics within the fastest growing and most dynamically expanding Nigerian manufacturing sectors (i.e. the intermediate goods sector and within that building materials and cement) did not work to reinforce the growth of purchasing power.

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 intermediate goods sector employing 88% of workers in the intermediate goods sector in 2020. 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 in 2020. These monopolisation processes in the Nigerian economy favoured the consolidation of dominant conglomerates such as Dangote in terms of pricing power in the market (Itaman and Wolf, 2021) as well as within Nigerian politics (Odijie and Onofua, 2020).

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 and provided 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

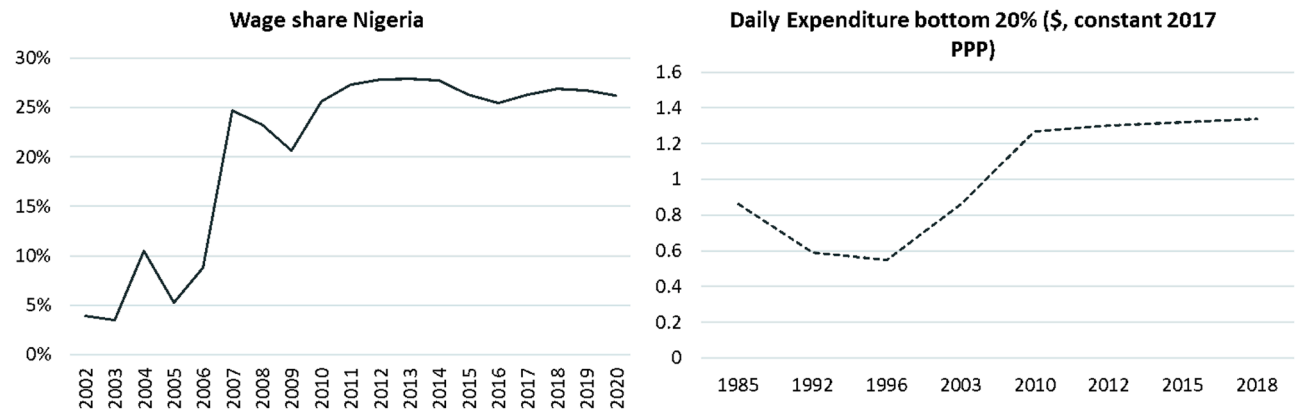

Fig. 4. Nigeria – wage share and daily disposable income of lowest income decile.
Compiled based on 2014 and 2020 NBS Statistical Bulletin (Section C) and World Bank Poverty and Inequality Platform.

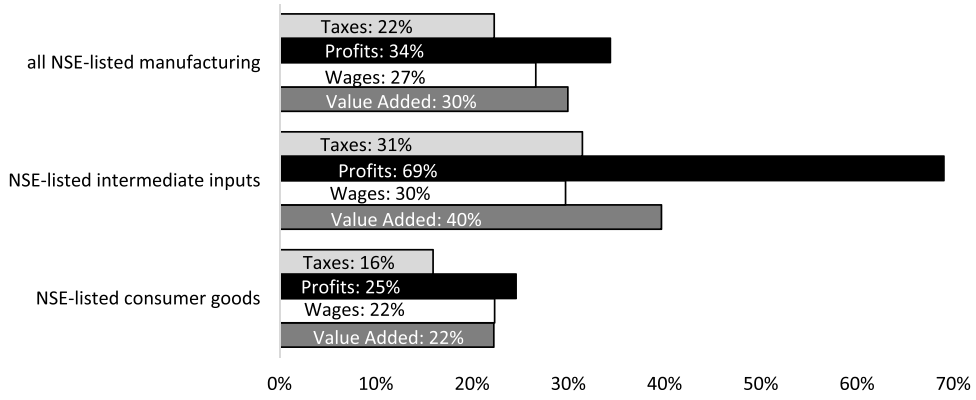

Fig. 5. Average yearly growth rates of value added, wages, profits and taxes in NSE-listed manufacturing firms.
Compiled based on financial statements of NSE-listed companies.

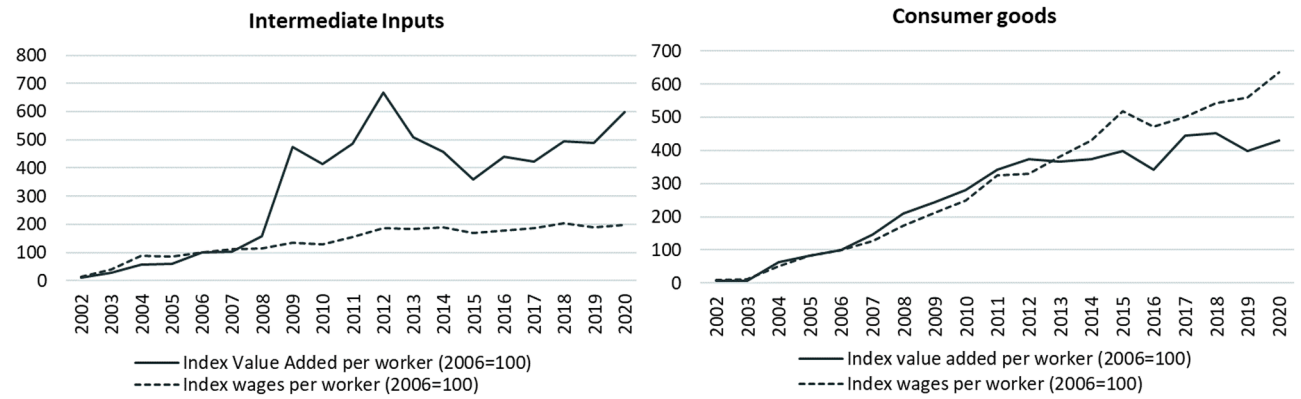

Fig. 6. Index of value added per worker and wages per worker (2006=100).
Compiled based on value-added statements of NSE-listed companies.

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). Rice production, for instance, increased after credit facilities became more widely available but stagnated again when the lack of complementary support measures for farmers resulted in high default rates (Karkare et al., 2022). This left manufacturing production highly import dependent with as much as 70% of raw materials in food and beverages production being imported and some firms such as Meyer importing as much as 90% of inputs. Importantly also, intermediate 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 intermediate 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 literature. 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.

7. Policy implications and 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. 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. Macro-level distributional policies did not cushion against the resulting uneven distributional effects of inflation. 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. 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. Increases in labour productivity and simultaneous employment absorption are unlikely to be sustained without sustained increases in aggregate demand. At the same time, firm-level learning-by-doing and productivity depend on functioning IP support. Hence IP and demand-side policies have to work together. The Nigerian case illustrates that increases in public infrastructure spending are not enough to support domestic demand growth. Infrastructure 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. Redistributive policies, targeted procurement or consumption incentives in sectors targeted by IP, could support demand growth in consumer goods industries.

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. The reach of Nigerian IP was limited, benefitting mostly large-scale conglomerates, which were best placed to take advantage of privatisation and trade policy measures, that formed the cornerstone of Nigerian IP measures. A wide range of IP measures beyond tariff protection is needed to support output growth in backwardly linked sectors. These will need to address sector specific supply constraints, and effectively reach smaller scale suppliers. 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.

CRediT authorship contribution statement

Christina Wolf: Conceptualization, Data curation, Formal analysis, Writing – original draft, Writing – review & editing.

Data availability

Data will be made available on request.

References

Aboobaker, A. (2019) 'Disarticulation as a constraint to 'wage-led growth' in dual economies, UMass Amherst Economics Working Papers. 269.

Africa Confidential, 2016. Economy Thwarts Buhari. Africa Confid. 57 (7), 8–10.

Africa Confidential, 2020. Building back bigger. Africa Confid. 61 (18), 7–8.

Akinyoade, A., Uche, C., 2018. Development built on crony capitalism? The case of Dangote cement. Bus. Hist. 60 (6), 833–858.

Amsden, A.H., 1990. Third world industrialization: "global fordism" or a new model? New Left Rev. 182 (July–August), 5–31.

Andreoni, A., Chang, H.-J., 2019. The political economy of industrial policy: structural interdependencies, policy alignment and conflict management. Struct. Change Econ. Dyn. 48, 136–150.

Bagnai, A., Rieber, A., Tran, T.A.-D., 2016. Sub-Saharan Africa's growth, south–south trade and the generalised balance-of-payments constraint. Camb. J. Econ. 40 (3), 797–820.

Blitch, C.P., 1983. Allyn young on increasing returns. J. Post Keynes Econ. 5 (3), 359–372.

Bresser-Pereira, L.C., Rugitsky, F., 2018. Industrial policy and exchange rate scepticism. Camb. J. Econ. 42 (3), 617–632.

Dangote Cement (2017). *Dangote Cement Annual Report 2017*. Dangote Cement Plc. https://dangotecement.com/wp-content/uploads/2021/04/DCP-2017-AR_updated_April20181.pdf (accessed 7 September 2023).

Chang, H., Andreoni, A., 2020. Industrial policy in the 21st century. Dev. Change 51 (2), 324–351.

Dangote Sugar (2014). *Dangote Sugar—2014 Annual Report, Growing Sweet Harvest*. Dangote Sugar Plc. https://sugar.dangote.com/wp-content/uploads/2020/09/2014-Dangote-SUGAR-Annual-Report.pdf (accessed 7 September 2023).

Demir, F., 2007. The rise of Rentier capitalism and the financialization of real sectors in developing countries. Rev. Radic. Political Econ. 39 (3), 351–359.

Dutt, A.K., 1992. A Kaldorian model of growth and development revisited: a comment on thirlwall. Oxf. Econ. Pap. 44 (1), 156–168.

Edler, J., Georghiou, L., 2007. Public procurement and innovation—resurrecting the demand side. Res. Policy 36 (7), 949–963.

ENR, 2019. With China's help, Nigeria builds vital artery. Eng. News Record 19 (22), 19–21.

Fay, M., H.I. Lee, M. Mastruzzi, S. Han, and M. Cho (2019) Hitting the trillion mark - A look at how much countries are spending on infrastructure (No. Policy Research Working Paper No. 8730).
Federal Republic of Nigeria (2015) National integrated infrastructure master plan 2015.
Federal Republic of Nigeria (2020) National integrated infrastructure master plan 2020.
Fidson, 2016. *Annual Report & Accounts*. Fidson Healthcare Plc.
Gabriel, L.F., Ribeiro, L.C.D.S., Jayme Jr, F.G., Oreiro, J.L., 2020. Manufacturing, economic growth, and real exchange rate: empirical evidence in panel data and input-output multipliers. PSL Q. Rev. V 73, 51–75. Paginazione.
Games, D. (2022, April 5) 'Nigeria invests billions in new infrastructure drive', African Business.
Itaman, R., Wolf, C., 2021. Industrial policy and monopoly capitalism in Nigeria: lessons from the Dangote business conglomerate. Dev. Change 52 (6), 1473–1502.
Itaman, R., Wolf, C., 2022. Peripheral financialisation and monopoly capitalism in Nigeria: the case of the Dangote business group. Camb. J. Econ. 46 (5), 1045–1072.
Kaldor, N., 1975. What is wrong with economic theory. Q. J. Econ. 89 (3), 347–357.
Kaldor, N., 2007. Causes of Growth and Stagnation in the World Economy (1st Published 1996, Digitally Printed Version 2007.). Cambridge University Press. Cambridge, UK:
Kalecki, M. (1954) in J. Osiatynski (ed.) The problem of financing development, pp. 21–44 (Vol. V). Oxford: Oxford University Press.
Kaplinsky, R., Farooki, M., 2012. The Impact of China on Global Commodity Prices: The Disruption of the World's Resource Sector. Routledge. London.
Karkare, P., M.E. Odijie, K. Ukaoha, and J. van Seters (2022) Inconsistent policies or political realities? Nigeria's trade and industrial policy imperatives (No. Discussion Paper No. 31).
Khan, M.H., Lin, J.Y., Stiglitz, J.E., 2013. Technology policies and learning with imperfect governance. The Industrial Policy Revolution I. The Role of Government Beyond Ideology. Palgrave Macmillan, pp. 79–115. London.
Khan, M.H., 2019. Knowledge, skills and organizational capabilities for structural transformation. Struct. Change Econ. Dyn. 48, 42–52.
Landini, F., Lema, R., Malerba, F., 2021. Demand-led catch-up: a history-friendly model of latecomer development in the global green economy. Ind. Corp. Change 29 (5), 1297–1318.
Lechevalier, S., Debanes, P., Shin, W., 2019. Financialization and industrial policies in Japan and Korea: evolving institutional complementarities and loss of state capabilities. Struct. Change Econ. Dyn. 48, 69–85.
Lo, D., Wu, M., Salazar-Xirinachs, J.M., et al., 2014. The state and industrial policy in Chinese economic development. Transforming Economies - Making Industrial Policy Work for Growth, Jobs and Development. International Labour Office, pp. 307–326. Geneva.
Malerba, F., Nelson, R., Orsenigo, L., Winter, S., 2007. Demand, innovation, and the dynamics of market structure: the role of experimental users and diverse preferences. J. Evol. Econ. 17 (4), 371–399.
Martin, H., Martin, R., Zukauskaite, E., 2019. The multiple roles of demand in new regional industrial path development: a conceptual analysis. Environ. Plan. A Econ. Space 51 (8), 1741–1757.
McCulloch, N., N. Balchin, M. Mendez-Parra and K. Onyeka (2017) 'Local Content Policies and Backward Integration Policies in Nigeria'. Supporting Economic Transformation (report). London: Overseas Development Institute. https://set.odi.org/wp-content/uploads/2017/10/SET-Nigeria_Backward-Integration_Final-report.pdf (accessed 7 September 2023).
McMillan, M., Rodrik, D., Verduzco-Gallo, Í., 2014. Globalization, structural change, and productivity growth, with an update on Africa. Econ. Transform. Africa 63, 11–32.
Milberg, W., Winkler, D., 2013. Outsourcing Economics Global Value Chains in Capitalist Development. Cambridge University Press. New York.
Morris, M., Staritz, C., 2019. Industrialization paths and industrial policy for developing countries in global value chains. Handbook on Global Value Chains. Edward Elgar Publishing, pp. 506–520. URL (consultedSeptember 2021): https://www.elgaronline.com/view/edcoll/9781788113762/9781788113762.00041.xml.
Mowery, D., Rosenberg, N., 1979. The Influence of market demand upon innovation: a critical review of some recent empirical studies. Res. Policy 8 (2), 102–153.
Nissanke, M., 2019. Exploring macroeconomic frameworks conducive to structural transformation of Sub-Saharan African economies. Struct. Change Econ. Dyn. 48, 103–116.
Nomaler, Ö., D. Spinola, and B. Verspagen (2021) Demand-led industrialisation policy in a dual-sector small balance of payments constrained economy (No. SARChI industrial development working paper series WP 2021-09).
Norbrook, N., 2021. The Africa Report. In: The Africa Report, 117, pp. 27–34.
Nwuneli, N., 2019. Financing scaling for Nigeria's smallholder farmers. Afr. Bus. 467 (October), 84–85.
Odijie, M.E., Onofua, A.O., 2020. Political origin and persistence of industrial policy in Africa. Globalizations 17 (6), 974–989.
Oreiro, J.L., da Silva, K.M., Dávila-Fernández, M.J., 2020. A new developmentalist model of structural change, economic growth and middle-income traps. Struct. Change Econ. Dyn. 55, 26–38.
Palley, T., 2004. The economic case for international labour standards. Camb. J. Econ. 28 (1), 21–36.
Palley, T., 2006. Great controversies: developing the domestic market. Challenge 49 (6), 20–34.
Palley, T., 2021. The economics of new developmentalism: a critical assessment. Investigación Económica 80 (317), 3.
PZ Cussons (2020). *Annual Report & Accounts*. PZ Cussons Nigeria Plc. https://www.pzcussons.com/wp-content/uploads/2021/01/PZCN-2020-Annual-Report-and-Accounts.pdf (accessed 7 September 2023).
Razmi, A., Blecker, R.A., 2008. Developing country exports of manufactures: moving up the ladder to escape the fallacy of composition? J. Dev. Stud. 44 (1), 21–48.
Razmi, A., 2015. The limits to wage-led growth in a low-income economy. Metroeconomica 66 (4), 740–770.
Razmi, A., 2016. Growth and distribution in low-income economies: modifying Post-Keynesian analysis in light of theory and history. Rev. Keynes. Econ. 4 (4), 429–449.
Sampaio, J. (2014, December 22) 'Double digit growth in Africa – the Refriango company in profile'.
Sarkar, P., Singer, H.W., 1991. Manufactured exports of developing countries and their terms of trade since 1965′. World Dev. 19 (4), 333–340.
Schumpeter, J., 1943. Capitalism, Socialism and Democracy, 2010th ed. Routledge Classics. London; New York.
Singh, A., 2011. Comparative advantage, industrial policy and the World Bank: back to first principles. Policy Stud. 32 (4), 447–460.
Smith, P., 2019. The Africa Report, pp. 102–104.
Stockhammer, E., 2012. Financialization, income distribution and the crisis. Investigación Económica 71 (279), 39–70.
Storm, S., Capaldo, J., 2019. Labour Institutions and Development Under Globalization. In: Nissanke, M., Ocampo, J.A. (Eds.), *The Palgrave Handbook of Development Economics*. Springer International Publishing, pp. 553–587. https://doi.org/10.1007/978-3-030-14000-7_16.
Storm, S., Naastepad, C.W.M., 2005. Strategic factors in economic development: east Asian Industrialization 1950–2003: east Asian Industrialization 1950–2003. Dev. Change 36 (6), 1059–1094.
Storm, S., Oqubay, A., et al., 2020. Macro-policy, labour markets, and industrial policy. The Oxford Handbook of Industrial Policy. Oxford University Press, pp. 450–484.
Storm, S., 2015. Structural change: debate: structural change. Dev. Change 46 (4), 666–699.
Szirmai, A., 2012. Industrialisation as an engine of growth in developing countries, 1950–2005. Struct. Change Econ. Dyn. 23 (4), 406–420.
Thirlwall, A.P., 1983. A plain man's guide to Kaldor's growth laws. J. Post Keynes. Econ. 5 (3), 345.
Thirlwall, A.P., 1986. A general model of growth and development on Kaldorian lines. Oxf. Econ. Pap. 38 (2), 199–219.
Thirlwall, A.P., 1992. A Kaldorian model of growth and development revisited: a rejoinder to Dutt. Oxf. Econ. Pap. 44 (1), 169–172. New Series.
Thirlwall, A.P., 1997. Reflections on the concept of balance-of-payments-constrained growth. J. Post Keynes. Econ. 19 (3), 377–385.
Thirlwall, A.P., 2013. Economic Growth in an Open Developing Economy—The Role of Structure and Demand. Edward Elgar.
Toner, P., 1999. Main Currents in Cumulative Causation: The Dynamics of Growth and Development. Palgrave Macmillan. New York.
Wade, R.H. (2018) Escaping the periphery - The East Asian 'mystery' solved (No. WIDER Working Paper 2018/101).
Whitfield, L., Staritz, C., 2021. The learning trap in late industrialisation: local firms and capability building in Ethiopia's apparel export industry. J. Dev. Stud. 57 (6), 980–1000.
Wolf, C., 2017. Industrialization in times of China: domestic-market formation in Angola. Afr. Aff. 116 (464), 435–461 (Lond.).
Wuttke, T., 2022. Global value chains and local inter-industry linkages: south Africa's participation in the automotive GVC. J. Dev. Stud. 59 (2), 153–169.
Young, A.A., 1928. Increasing returns and economic progress. Econ. J. 38 (152), 527–542.