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Can Africa Run? Industrialisation and Development in Africa

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Fiona Tregenna*

Abstract

Africa remains the least industrialised region in the world. Yet industrialisation is critical for growth and catching up, as well as for development more broadly. This article begins by discussing industrialisation in Africa through the lens of Thandika Mkandawire's writings on the subject, within the context of his broader thinking on development. In particular, it reflects on his perspectives on structural change and industrialisation; the phases of industrialisation and deindustrialisation in Africa; the political economy of industrialisation in Africa; social policy and industrialisation; and trade and regional integration. The author provides an analysis of some key issues pertaining to industrial development and policy in Africa and argues that the weaknesses of industrialisation in Africa, and the periodic reversals through premature deindustrialisation, have not only hampered economic growth and development, but have also influenced the political economy of African countries, with wider social and political effects. Similarly, state capacity for industrial policy is built through 'learning by doing' in the actual practice of industrial policy. Amongst the key topical issues discussed in the article for industrialisation in Africa are upgrading and technological progress, regional integration, and the greening of industrialisation. A vision is put forward for 'Transformative Industrialisation for Africa' (TIfA).

Keywords: development; industrialisation; deindustrialisation; industrial policy; political economy; Thandika Mkandawire; Africa

* Professor, South African Research Chair (SARChI) in Industrial Development, University of Johannesburg. Email: ftregenna@uj.ac.za

Editor's note: An earlier version of this paper was originally presented as the Thandika Mkandawire Memorial Lecture. The author however requested that it be subjected to a rigorous blind peer review process in advance of its publication. We publish it in this issue of Africa Development both in honour of the late Thandika Mkandawire but also as a peer-reviewed article that conforms to the academic requirements of this journal.

Résumé

L'Afrique demeure la région la moins industrialisée du monde. Pourtant, l'industrialisation est essentielle à la croissance, au rattrapage économique, ainsi qu'au développement en général. Cet article commence par aborder l'industrialisation en Afrique par le prisme des écrits de Thandika Mkandawire pris dans le contexte de sa réflexion générale sur le développement. Il étudie en particulier ses perspectives sur le changement structurel et l'industrialisation, les phases d'industrialisation et de désindustrialisation en Afrique, l'économie politique de l'industrialisation en Afrique, la politique sociale et l'industrialisation, de même que, le commerce et l'intégration régionale. L'auteur analyse certaines questions clés relatives au développement et à la politique industriels en Afrique et affirme que les faiblesses de l'industrialisation en Afrique et les inversions périodiques dues à une désindustrialisation prématurée ont, non seulement, freiné la croissance et le développement économiques, mais ont également impacté l'économie politique des pays africains, avec de vastes effets sociaux et politiques. De même, la capacité en matière de politique industrielle de l'État est renforcée par « l'apprentissage par la pratique » dans un exercice réel de politique industrielle. Parmi les principales questions d'actualité soulevées dans cet article en faveur de l'industrialisation en Afrique figurent la revalorisation et le progrès technologique, l'intégration régionale et l'écologisation de l'industrialisation. Une vision est proposée pour « l'industrialisation transformatrice de l'Afrique » (TIfA).

Mots-clés : développement ; industrialisation ; désindustrialisation ; politique industrielle ; économie politique ; Thandika Mkandawire ; Afrique

Introduction

The title of this article – 'Can Africa Run? Industrialisation and Development in Africa' – is a tribute to Thandika Mkandawire's Inaugural Lecture for his position as Chair, African Development at the London School of Economics in 2010, which was subsequently published under the title '*Running While Others Walk: Knowledge and the Challenge of Africa's Development*' (Mkandawire 2011). Thandika[1] of course adapted this from Nyerere's famous declaration that 'We must run while others walk', which pointed to the need for Africa to move faster just to catch up with the rest of the world.

There is no doubt that Africa needs to 'run'. Indeed, the whole world is now 'running', with technology advancing at an unprecedented pace. Can we on the continent accelerate industrialisation and technological progress, and catch up through sustained high growth and development, such that an African child born today can live a long, healthy and fulfilled life with the capabilities to learn, contribute, flourish and make meaningful life choices?

The reality is that, since Nyerere's exhortations in the 1960s about the need for Africa to run, Africa has not caught up, nor even kept up with the rest of the world. African countries have been overtaken by Asian countries that were previously poorer, and Africa also has not meaningfully narrowed the gap with advanced economies. For instance, China was poorer per capita than almost all African countries in the mid- to late 1970s, but has now sped ahead and is richer per capita than all African countries (except the Seychelles). South Korea previously had levels of income per capita lower than many African countries, but is now a high-income economy.[2] In the late 1980s, Thandika presented figures showing what he characterised as the abnormally low levels of industrialisation in African countries at independence (Mkandawire 1988:12). While there have been a few success stories, some African countries are less industrialised today than they were at independence. The weaknesses of development in Africa of course have multiple explanations – internal and external, historical and more recent – that are beyond the scope of this article. I will be focusing specifically on industrialisation and development, taking an ontological and *longue durée* approach.[3]

Thandika's writings hold profound insights for contemporary debates about industrial development and policy, as well as, of course, for broader issues including the state, social policy and the overarching questions of African development. Some of his seminal contributions on industrial development and policy were written in the 1980s, yet they remain highly relevant four decades later. For instance, his insights into regional integration are germane to current developments in the African Continental Free Trade Area (AfCFTA). Furthermore, the issues he discussed regarding the financing of industry are pertinent today, his emphasis on capabilities and technological upgrading resonates with current thinking on technological progress, and the links he drew between social and industrial policy have a direct bearing on contemporary policy debates, as do his fundamental contributions on the central issue of the developmental state.

There are two components to this article. The first analyses and reflects on Thandika's thinking on industrial development and policy in Africa, in the context of his broader ideas on development in Africa. Industrialisation was one of Thandika's central interests, alongside and intertwined with his thinking on states, national development, social policy, and his broader approach to political economy and development in Africa. He focused on industrial development and policy, especially in the earlier stages of his work, while maintaining an interest and continuing to engage with and write on these issues throughout his career.[4] This discussion, which is contained in the next section of this article, focuses on the following aspects of Thandika's ideas:

- the importance of structural change and industrialisation;
- his characterisation of the phases of industrialisation and deindustrialisation in Africa;
- the political economy of African industrialisation;
- social policy and industrialisation; and
- trade and regional integration.

The subsequent section (*Industrialisation and Development in Africa*) offers some of my own ideas and thinking on industrial development and policy in Africa. The continent has an overall weak record of industrialisation, including premature and pre-industrial deindustrialisation. I argue that this has contributed to poor growth, as well as having wider social and political economy consequences. Thus, not only is political economy important to explaining and enabling industrial development and policy in Africa, but political economy is also partly endogenous to industrialisation.

Industrialisation remains critically important to growth and development in Africa. While there are opportunities for leapfrogging, sustained industrial progress is only possible with ongoing investment, learning, building of capabilities, and upgrading. African industrialisation pathways will need to involve technological advancement, regional integration and green industrialisation. This discussion builds up to a case for 'Transformative Industrialisation for Africa' (TIfA). This is not intended as a comprehensive discussion, and certainly not as any kind of blueprint for industrialisation in African countries. Due to constraints of space, I will be unable to discuss a range of other issues that are critically important to industrialisation in Africa, including capital flight, macroeconomic policy, infrastructure and so on.

Thandika's Thinking on Industrial Development and Policy

Why Industrialisation?

Thandika consistently emphasised the centrality of structural change and industrialisation for Africa's catching up and broader development. While he was more concerned with applied issues of economic development than in 'high theory', he was of course theoretically grounded and engaged with the international development literature. I would characterise his thinking as broadly within a Structuralist tradition. The Structuralist approach to economic development was initially formulated primarily in Latin America, in particular by economists associated with the United Nations

Economic Commission for Latin America and the Caribbean (CEPAL/ECLAC), including Raúl Prebisch and Celso Furtado.[5] In essence, Structuralism emphasises the importance of shifting the structure of developing economies towards higher-productivity activities, specifically to manufacturing through industrialisation, as the key pathway to catching up with advanced economies.

Thandika drew explicitly on the Latin American structuralists (especially Prebisch), and also on Albert Hirschman, as well as being strongly influenced by Alexander Gerschenkron. During Thandika's studies in the United States and Sweden in the 1960s, and while he was further developing his own thinking in the 1970s and 1980s, Structuralism was prominent in the theory and practice of development, especially in Latin America. Structuralist thought was especially influential concerning the centrality of industrialisation and structural change for catching up.

The international debates of the time around economic development were engaged with issues such as the role of national bourgeoisies in development, peripheral countries' dependency on the 'core', the role of manufacturing as an engine of growth in developing countries, how to overcome reliance on primary commodities, terms of trade between developing and advanced economies, and the role of the state in industrialisation and in the wider development project.

Thandika was alive to and engaged with these international debates around structural change and development. He located the Structuralist approach in the context of African countries, considering in particular colonial history and the levels of underdevelopment relative to the other two major developing regions of the world – Latin America and Asia. He considered industrialisation and growth in Africa through the lens of African countries being 'late' or 'late, late' or even, as he sometimes referred to them, 'late, late, late' industrialisers: 'African economies were the quintessential "late latecomers" to the process of industrialization' (Mkandawire 1999a:91). This 'lateness' in industrialising is directly linked to the fact that decolonisation in most of Asia and Latin America happened earlier than it did in Africa. He argued that African countries, as late industrialisers, needed a 'big push', through mechanisms of cumulative causation, to move from a low equilibrium trap and a vicious cycle of poverty as a result of the colonial legacy, towards a higher equilibrium with self-reinforcing growth and transformation (Bangura 2020). Thandika's focus on the centrality of structural change can be seen in his view that '[t]he litmus test for any policy is whether it contributes to economic growth and structural change' (Mkandawire cited in Meagher 2019:530).

Technological upgrading was central to Thandika's conception of late industrialisation and catching up. He highlighted how countries risked 'being locked in a permanent slow-growth trajectory' if they stuck to static comparative advantage and failed to advance technologically (Mkandawire 1999a:91). He explicitly rejected a linear model of development and technological progress – a teleological view in which technologies are progressively abandoned in advanced economies and subsequently adopted in developing countries. Instead, drawing strongly on Gerschenkron's (1962) concept of late industrialisation, Thandika argued that 'one of the advantages of late industrialisation is access to experiences and knowledge accumulated by the forerunners. Latecomers can telescope development, thus adopting certain measures at much earlier stages of their development than the pioneers' (Mkandawire 2007:14). In a similar vein, he emphasised the importance of learning and productivity for catching up:

> In the manner of Gerschenkron, I dare to argue that in order to catch up, 'late, late, late' comers will need to attain levels of education and learning that are far higher than those attained by the pioneers at similar levels of economic development. I would further argue that while earlier forms of 'primitive accumulation' relied on brawn, the new ones will rely more on brains. Increases in productivity will drive the catching-up processes much more than the mobilisation of financial and human resources (Mkandawire 2011:14).

Thandika was always clear on affirming the primacy of development and on the importance of material progress, recognising economic growth as not sufficient, but insisting on its necessity. This is cogently captured in his declaration that 'Africans do not live by bread alone. This said, bread matters' (Mkandawire 2011:25). Thus, while emphasising the importance of the character of growth (including its distributional character), he wholly rejected any notions that growth does not matter. This was both in his earlier contributions on the broad development process in Africa, and also evident in his later remarks on development and climate change in the African context. He situated economic growth within the catching-up process – the central concern of a Structuralist approach to development.

> 'Catching up' does not mean being like the West, or the East. My concern is with bridging the huge gap in material well-being between the developed countries and the rest of us. And within the 'rest', Africa is at the tail end. Such catching up involves rapid growth, structural change and technological mastery. It involves learning from others, selectively applying the lessons, being innovative to partly 'leapfrog' over certain 'stages'. 'Catching up' suggests intentionality and the drawing up of strategic plans to attain the goal. Neoliberal reforms have been against any intention other than that sanctioned by markets. It is against 'planning' and has little vision of Africa

> beyond the role that 'comparative advantage' assigns to it (Mkandawire cited in Meagher 2019:16).

His views on the importance of industrialisation for Africa, and the direct causal link between industrialisation and catching up, were strengthened by the astounding success of East Asian industrialisation and growth. For some today, this is a matter of economic history. But Thandika lived through this and could directly observe the transformation of East Asian economies and societies. These successes stood in stark contrast with the failures of industrialisation, growth and development in many African countries over the same period, especially when set back by structural adjustment programmes (SAPs). East Asian countries that had been poorer than most African countries overtook their African counterparts and sped up to the advanced economies. For Thandika, this empirical experience reinforced his Structuralist-inspired views on the importance of industrialisation for Africa:

> The industrialization of Africa is still high on the agenda, despite the battering it has suffered in recent years. Not only must African countries aim to reverse the process of deindustrialization, but also they must actively seek to catch up to others with unprecedented speed. Experience from the high-performing Asian countries clearly suggests the importance of strategies and interventionist policies for rapid industrialization, in contrast to the didactic messages about market friendliness extracted from the story of the East Asian miracle (Mkandawire & Soludo 1998:95).

From the East Asian experience, Thandika drew lessons about the importance of a dynamic rather than static notion of comparative advantage. He looked to the active industrial policies that these countries implemented in order to develop future comparative advantages in industries in which they were not yet competitive. He pointedly contrasted this with International Monetary Fund (IMF) advice based on concepts of static allocative efficiency (Mkandawire 1984:145).

Where Thandika departed from the East Asian experience, including in terms of its relevance and lessons for African countries, was in his own unshakeable insistence on democracy. Indeed, he himself was a refugee from an authoritarian African state (Malawi under Banda). Thandika argued forcefully that democracy and development are compatible, and that countries need not choose between them. Specifically, he argued that countries can industrialise and grow with democratic rather than authoritarian states. In this, he drew explicitly on the characteristics he admired in the Nordic countries, and how they had successfully developed – not only with but also through – democracy.

Industrialisation and Deindustrialisation in Africa

Thandika traced the historical phases of industrialisation and deindustrialisation in Africa, and the determinants of these changes. He argued that, for different reasons at different times – including colonialism and the SAPs – African countries were 'out of sync' with the rest of the world in industrialisation (Mkandawire 1999a:91).

Going back to the phase of industrialisation in many developing countries between 1914 and 1945, he points out that Africa largely lost out on this due to colonialism (Mkandawire 1988:9). Other developing countries pursued import-substituting industrialisation (ISI) during this period, aiming to replace imports with domestic production, and which they financed either through borrowing or through debt defaults. Yet African countries under the colonial yoke could not protect their own domestic markets as a basis for industrialisation, nor could they run deficits to finance industrialisation (Mkandawire 1999a:91). With the exceptions of the special cases of South Africa and what was then Rhodesia, he contrasts the experience of Africa under colonialism with the experiences of Latin America and even India, whose industrialisation during the same period (1914 to 1945) was to lay the basis for their post-World War II industrialisation (Mkandawire 1988:10). He shows that, as a result, African countries were among the least industrialised countries in the world at independence (Mkandawire 1988:11–12). The fact that Africa decolonised later than other developing regions is thus integrally connected to the continent generally being a 'late latecomer' to industrialisation.

Linked to this later decolonisation, the subsequent phase of ISI in Africa post-independence was short, at less than a decade in most countries. ISI in Africa was not only far shorter but was very different from that in Latin America, for instance. Thandika rejected narratives blaming ISI for Africa's economic problems (Mkandawire 1988, 2005a). He exposed the bankruptcy of characterisations of 'backwardness' and neo-patrimonialism as lazy explanations for the poor development outcomes in Africa. For instance, he identified two key flaws in arguments from the public choice school that attributed the adoption of ISI policies in Africa to rent-seeking:

> First, it could not be demonstrated empirically that industrial policies in Africa had been pushed by rent seekers … Second, the account is anachronistic. Beneficiaries of industrialization were not the source of the policies, but the product of industrialization (Mkandawire 2015:585–586).

He further noted that, while other regions financed their industrialisation through Eurodollar loans, most African countries did not borrow extensively, and their borrowing was used mainly to finance balance-of-payments problems rather than for industrialisation (Mkandawire 1999a:91).

The Lagos Plan of Action (Organisation of African Unity [OAU] 1980) emphasised the importance of industrialisation, seeing this as central to Africa's development and self-sufficiency. The Plan was effectively superseded by the Berg Report and the SAPs, and its recommendations were largely not implemented. Thandika wryly noted the divisions within African governments between ministers of planning, who had developed the Lagos Plan of Action, and finance ministers, who were associated more with the Berg Report.

Thandika's strong views on the centrality of structural change and industrialisation for Africa led to his serious concerns about the deindustrialisation he observed in many African countries from the early 1980s following the SAPs. The so-called 'structural reforms' of the SAPs, of course, have no affinity with structural change or structural transformation.

Thandika pointed out that a number of African countries had been on positive growth and development tracks prior to the SAPs, and had made progress in industrialisation, growth and development. He thus directly identified deindustrialisation in Africa in the 1980s as part of the 'maladjustment' caused by the SAPs (while also recognising underlying domestic political economic factors that enabled this reversal, as discussed further below) (Mkandawire 2005a).[6]

One of the channels of this relationship is that the SAPs 'prematurely exposed African industries to global competition and thus induced widespread processes of de-industrialisation' (Mkandawire 2005a:16). Thandika (with Charles Soludo) also showed how the models of perfect competition and (static) comparative advantage underpinning the SAPs negate the logic of industrial policy, while the 'incentive-neutral' trade policy prescriptions of SAPs undercut the possibilities of industrial policy (Mkandawire & Soludo 1998:95–96).

He showed how African economies were devastated and had their development pathways derailed by SAPs. For Thandika, this was not just something to be written about in academic papers, but something that he felt deeply and viscerally as being like a wound inflicted on the continent.

One of the effects of the SAPs was to undermine the capacities of African states, including emasculating states from driving industrialisation and development:

> And so African economies find themselves denied use of the state which has been the major source of dynamism in industrialisation while awaiting, in the absence of indigenous capital, the arrival of foreign investments that remains sceptical of export oriented industrialisation in Africa. The result has been stagnation and de-industrialisation (Mkandawire 1988:28).

In addition to SAPs, he identified two primary sources of the failures of industrialisation in Africa from the 1980s. The first was external shocks, in particular deteriorating terms of trade and heavy external debts leading to foreign exchange constraints on the import of intermediate inputs needed for industrialisation. The second was weak institutions and weak industrial capabilities that hampered modernisation and competitiveness in industry (Mkandawire & Soludo 1998:101–102). A related contributing factor was financial liberalisation, which constrained the financing of industrialisation, and more broadly undermined states' leverage over the necessary resources, and limited the policy space, to drive an industrialisation agenda (Mkandawire 1999a).

Thandika remarked that '[t]o talk of 'de-industrialisation' in a continent that is least industrialised in the world, may seem merely faddish' (Mkandawire 1988:5). Yet he argues forcefully that deindustrialisation in Africa from the 1980s was not inevitable, and that it acted as a brake on Africa's growth and development. He warned that '[t]he dismissal of deliberate, strategic industrial and trade policies to shape Africa's position in the global trading system runs the distinct danger of leaving Africa on the low-productivity, low-growth path' (Mkandawire 1999a:91) – a warning that unfortunately foretold what indeed subsequently unfolded.

The Political Economy of Industrialisation and Deindustrialisation in Africa

As with any issues to which he turned his gaze, Thandika looked at issues of industrial development through the lens of critical political economy, which was the hallmark of his approach. This approach can be summed up in his observation that 'industrialisation and its reversal are quintessentially political' (Mkandawire 1988:30).

He coined the term 'choiceless democracies' (Mkandawire 1999b) to describe systems that are nominally democratic but with no meaningful substantive choices, and specifically no meaningful choices or power over the economy.

His analysis of the early failures of industrialisation and of deindustrialisation in Africa in the early 1980s did not simplistically attribute these only to SAPs, nor did he cast African governments as the hapless victims of international financial institutions (IFIs). Thandika critiqued the class basis of African industrialisation, which he sees as part of the colonial legacy. Unlike Asia and Latin America, African countries at independence lacked a strong and autonomous indigenous bourgeoisie that could drive the industrialisation project. He argued that class and state structures made industrialisation in Africa 'socially "rootless"' (Mkandawire 1988:18), and contrasted this with India and Latin America. He thus argued that 'industrialisation in Africa was strictly speaking not a "class project". It was essentially a nationalist programme and as such it lacked the sharpness and purposefulness of a class determined project' (Mkandawire 1988:18).

In this respect, he observed commonalities in the degree of state involvement across socialist and capitalist African states. In both, the nationalist roles of the state in industrialisation were driven by the desire for increased control and the need for accumulation, in the face of the private sector not stepping up (Mkandawire 1988:18–19).

The weak social and class basis, and lack of broad-based 'ownership', of industrialisation, were fundamental weaknesses of the industrialisation project and made it vulnerable to reversal, as indeed transpired with the SAPs. Thandika observed that '[t]he weak base of the industrialisation process is revealed by the fact that outside labour and a few nationalist groups, de-industrialisation has not received much resistance internally' (Mkandawire 1988:30). His analysis of the weaknesses of the business class in most African countries, due in part to the distorting effects of colonialism on class formation, points both to the leading role of the state in industrialisation and to the need to embed this project more broadly.

Social Policy and Industrialisation

It would be remiss to reflect on Thandika's perspective on industrialisation without bringing in social policy, and his novel linking of innovation, industrial policy and social policy. This was not a 'forced marriage', considering that he had earlier focused on industrialisation and then, after joining the United Nations Research Institute for Social Development (UNRISD), turned his attention more to social policy. Rather, he was able to link industrial and social policy in a novel and organic way through an integrated development lens. He argued that social policy is not just about social protection – protecting the vulnerable and improving people's quality of life. In his conceptualisation of 'transformative social policy', social policy plays a productive role in the development process.[7]

Thandika's writing on social policy, industrialisation and development has strong relevance for contemporary debates on social policy, including specifically the possible expansion of social grants. For example, objections to expanding social grants and social policy in current debates in South Africa include: 'it will create dependency', 'we cannot afford it', 'the money would be better spent productively', 'rather put the funds towards industrial policy', and 'jobs are more important'. This is the context of what can be regarded as a crisis of social reproduction. Through well-crafted and strongly grounded arguments set out in various papers (Mkandawire 2001b, 2005b, 2007), Thandika debunked this kind of thinking. Instead, he conceptualised social development as integrally linked with innovation, industrialisation and growth.

For instance, with reference to the East Asian experience, he draws attention to the often-underplayed role of the state in social policy as the 'handmaiden' of rapid industrialisation:

> For right-wing observers, the absence of such a role for the state is the source of the good performance of the Asian economies. A closer look, however, shows that successful NICs [newly industrialising countries] pursued social policy that served as a handmaiden to the rapid industrialization aspirations of these countries (Mkandawire 2001b:16).

Thandika's conceptualisation of social policy can be understood as part of his broader perspective on catching up, drawing on Structuralism and on Gerschenkron and adapting to the African context. Even among the advanced economies, he noted that late industrialisers adopted social policy at an earlier stage of development than did early industrialisers. He understood social policy as closely linked to the innovation and technological progress that are needed for late industrialisers to catch up.

He pointed out that '[r]apid industrialisation produces enormous social dislocations and strain, challenging the social acceptance of innovations' (Mkandawire 2007:24). This heightens the role of social policy in cushioning these dislocations and strains, both to protect those negatively affected and as part of building wide support for innovation and industrialisation, despite these uneven distributional effects. A second key role of social policy in this context lies in building the capabilities needed for technological progress, industrialisation and growth. As Thandika wrote, '[t]he catch-up process demands … "social capability" which includes the attributes and qualities of people and institutions that condition a society's capability selectively to adopt, adapt and improve technologies' (Mkandawire 2007:15).

Another channel through which he linked social and industrial policy was in the financing of industrialisation, noting that the availability of finance has been a constraint on industrial development in Africa. Drawing on the Scandinavian experience, he observed how public pension funds, as part of social policy, were instrumental in the domestic financing of industrialisation.

Trade and Regional Integration

Thandika had strong views on trade orientation, and the international development debates of the time around 'import-substituting industrialisation' (ISI) and 'export-oriented industrialisation' (EOI). He critiqued what he characterised as a false binary between ISI and EOI:

> the dichotomy of 'export-oriented versus import substitution' is misleading because even the most successful exporters continue to pursue import substitution. For another, import substitution was not a strategy for autarky but for the eventual diversification of the export base away from primary products toward industrial products (Mkandawire 1999a:81-82).

He rebutted the mischaracterisation of the trade orientation of the newly industrialising countries (NICs) as EOI. Instead, he pointed out that nearly all the NICs used import substitution for an extended period of time as a necessary basis for export success. In addition, he notes that the NICs continued to selectively use protection for industries in which they were not yet competitive, but in which they were aiming to develop a comparative advantage (Mkandawire 1984:45).

As discussed above, Thandika emphasised that the period of ISI was short in Africa, and he rejected neo-patrimonialist explanations for the adoption of ISI as well as accounts blaming ISI for Africa's economic problems.

His concerns about ISI in Africa were different, one of these being that the manner in which it was implemented undermined regional integration. In a piercing critique of African governments, he writes:

> Many factors have worked against regional integration in Africa. One is the small-mindedness of import substitution industrialization in Africa, where Lilliputian markets were taken to be the basis of viable industrialization. This, in turn, reflected the pettiness of the many dictators that were to proliferate on the continent. Content with their little fiefdoms, they lacked the vision and will to imagine larger units to which they would have to surrender some of the power they exercised over their hapless citizens (Mkandawire 1999a:100).

As well as these internal factors, he attributes the failures of regional integration to 'the continued divide-and-rule tactic of the neocolonial powers' (Mkandawire 1999a:100), as well as the SAPs that undermined countries' adherence to regional co-operation arrangements (Mkandawire 1999a:100–101). He also observed that the nature of Africa's articulation with globalisation fostered regionalism among contiguous states, rather than true integration across the continent.

Thandika contrasted this with the post-independence pan-African visions of regional integration that would unify Africa. He lamented the 'petty nationalism' generated both by the nature of colonial rule and by the choices made by nationalist movements, which led to little progress with regional co-operation. 'As a result, the continent with the most vocally expressed ideology of regional collaboration (pan-Africanism) has probably moved least in the direction of establishing viable regional arrangements' (Mkandawire 1999a:100).

Thandika emphasised the integral relationship between regional integration and industrialisation in Africa and saw integration as being of enduring importance for growth and development. Linking this with his views on import substitution and export orientation, he argues:

> Regional arrangements can be used as a collective agency of restraint. In addition, regional integration could serve the dual function of extending and deepening import substitution and promoting exports and Africa's competitiveness in global markets. Forms of regional integration that are protective from the point of view of the rest of the world but that allow and encourage competition within the boundaries could serve as training grounds for industries of the region preparing for global markets (Mkandawire & Soludo 1998:124).

In addition to regional integration, Thandika (with Charles Soludo) identified two key directions for Africa's trade orientation. Firstly, enhancing competitiveness by shifting the production structure towards products that are more dynamic in global demand and more technologically advanced. Secondly, addressing the structural bottlenecks in the trade governance system and aiding export promotion and industrialisation. In this approach, the authors link trade (especially export promotion) with industrialisation and structural change (Mkandawire & Soludo 1998:95).

Concluding Remarks on Thandika's Perspectives

Space does not permit me to discuss all aspects of Thandika's approach to industrialisation. There is much more to say about his thoughts on the role of the state, on the financing of industrialisation, and on his critique of narrow environmentalism, among other issues. I have nevertheless tried to bring out and engage with his emphasis on the importance of industrialisation for Africa's development, his concerns around earlier deindustrialisation, and his views on trade and regional integration, and the links between industrial and social policy. He considered these issues through the lens of critical political economy, never shying away from challenging dominant orthodoxies.

Industrialisation and Development in Africa

Next, I put forward my own analysis of some key issues pertaining to industrial development and policy in Africa. I identify some of the economic and broader effects of Africa's weak record of industrialisation and 'pre-industrial deindustrialisation', and argue that industrialisation remains important for Africa's development. In Thandika's tradition, I consider Africa's industrialisation through a critical political economy lens, suggesting a dialectic of political economy conditions both influencing and being influenced by industrialisation. I discuss some topical issues of industrial development in Africa – technological advancement, regional integration, and green industrialisation – building up to a case for 'Transformative Industrialisation for Africa' (TIfA).

The Economic Effects of Weak Industrialisation and 'Pre-industrial Deindustrialisation' in Africa

While explanations for poor growth and development in Africa need to be multifaceted and country-specific, I contend that the failures of industrialisation are an important part of the story. Industrial development in Africa has been stop-start, and most countries have never reached significant levels of industrialisation. The various phases of deindustrialisation in Africa have been premature, in the sense of setting in at lower levels of gross domestic product (GDP) per capita and at lower shares of manufacturing in GDP and in total employment than would be typical at the onset of deindustrialisation internationally (Tregenna 2009, 2016, 2017). In previous writings I have characterised this phenomenon in some African countries as not only premature deindustrialisation, but as 'pre-industrial deindustrialisation' (Tregenna 2015). This is in the sense of beginning to deindustrialise before industrialising in any meaningful sense. There have of course been successes – within countries at particular times, including in the present, and in particular sectors, but this is an overall *longue durée* appraisal. Besides the low shares of manufacturing in countries' total employment and GDP, the weaknesses of African industrialisation are manifest in generally low technology intensity in manufacturing, weak productive capabilities, poor competitiveness and export performance, and manufacturing not strongly pulling along other sectors as an engine of economic growth.

In addition to the negative effects on economic growth, deindustrialisation is also likely to have negatively affected wider socio-economic development in Africa, including the levels of economic diversification and complexity, technology intensity, export strength, and poverty and other developmental outcomes.

I argue that the failures of industrialisation in Africa have had broader social and political economy effects, beyond the socio-economic effects discussed above. Industrialisation that is deep and sustained has profound and irreversible effects on a society. This is evident, for example, in how the First Industrial Revolution transformed European economies and societies (Ashman *et al.* 2020). These effects (which are not necessarily all positive) reach far beyond matters of productivity and growth: these are the transformative effects of industrialisation on social and class relations and on a country's broader political economy.

The Political Economy of African Industrialisation

Industrialisation is class formative. It is the central route to proletarianisation and the formation of a working class. Internationally and historically, it is also through industrialisation that countries have typically developed a robust middle class. Industrialisation also forms the basis for the establishment of a national bourgeoisie as a class that is able to drive a nation's economic progress in ways that agrarian landowning classes cannot.

The nature and longevity of colonialism in Africa meant that most countries lacked a robust and autonomous indigenous bourgeoisie that could drive the industrialisation project, and the weaknesses of industrialisation in turn hampered the emergence of such a class.

One dimension of the class-formative effects of industrialisation is the subjective one of class identities. Any individual's identity may always be 'overdetermined', through an intersecting mix of national, ethnic, class, religious, gender, sexual, regional or other identities. The primacy among these multiple identities, and the ways in which they intersect and interact, will vary over time for the same individual, and will of course be heterogeneous among individuals in any community or country. We might speculate that, for the overwhelming majority of the poor and 'working class' (in the broadest sense) in Africa, class identity or class consciousness are not necessarily among the foremost of their identities.

In various civil and cross-country conflicts that have taken place in Africa in the post-independence era, those directly involved in combat are typically of the same class or socio-economic status. We can only speculate as to whether conflict would have been as prevalent had their countries become industrialised and prosperous, and if they had regular and unionised factory jobs. This is of course not to suggest that industrialisation is a recipe for peace – the various conflicts between industrialised European countries, including the two world wars of the past century, could readily disabuse us of such a notion. Yet, with weak or incomplete class formation, the associated weaknesses in working-class organisations and working-class consciousness, and with persistent economic deprivation and perceived lack of prospects, other identities, such as religious or ethnic identities, will be more prominent.

In terms of electoral politics, the electoral platforms on offer in African countries can generally not be most aptly characterised along a linear 'left-right' ideological spectrum. Economic issues do of course feature, for instance around food security, infrastructure and basic services, and job creation. In some countries, voting patterns arguably tend to follow regional or ethnic patterns more strongly than socio-economic status. Incomplete class formation in societies with strongly pre-industrial characteristics means that traditional notions of class need to be reconstructed, or at least adapted, in these contexts.

Beyond subjective identities and consciousness, industrialised economies are generally less conflict-prone than those dependent on natural resources. There is an extensive literature debating the links between natural resource dependence – specifically dependence on minerals – and conflict (although some strands within this body of literature remain contentious and more nuance is certainly called for).[8] One aspect of this is the high value and portability of minerals, for example conflict diamonds, relative to most manufactured goods.

All this is not intended to essentialise or romanticise industrialisation. It would be absurd and reductionist to attribute the range of complex and context-specific challenges across Africa to the failures of industrialisation, or to advocate industrialisation as the 'silver bullet' for Africa's underdevelopment. The political economy conditions for, and political constraints on, industrialisation have been discussed extensively over the years. My argument here is that this relationship is a dialectical one: the successes and failures of industrialisation also partially shape a country's political economy. A country's political economy is to some extent endogenous to industrialisation. Without being too crudely materialist or mechanistic, this is part of the influence of productive relations on social relations.

One policy implication of this is that countries cannot wait for the 'right' political economy conditions for industrial development and policy. While recognising that political economy configurations in different countries may be differentially conducive to industrialisation, it is important for countries to 'get on with it'. Industrialisation that is of sufficient scale and duration will itself influence political and economic conditions. One aspect of this is that industrialisation changes the balance of economic power within countries (as well as internationally).

Sustaining industrial development in a market-based or mixed economy requires vesting the industrialisation project within a vigorous 'indigenous' national bourgeoisie. Beyond the narrow class fraction of owners of industrial capital, a deep rooting of industrialisation requires that other fractions of capital depend on the continuity and success of industrialisation (including through intersectoral linkages).

'Vested interests' have often been condemned, sometimes in a manner that quite bizarrely suggests that there are any issues or processes in which there are no stakes or interests. We do need interests that are deeply vested and invested in the success of an industrialisation project, not as mere rent-seeking beneficiaries of state largesse, but as a range of stakeholders prepared to fight (not literally) for industrialisation. This is essential to avoiding the stop-start industrialisation that has been the experience of many African countries. Here I am referring not so much to the earlier experiences of the SAPs, but to inconsistent support for industrialisation in more recent years. If industrial policy is seen as a system of patronage, to be doled out as payback for electoral support and to be reversed by the next administration, then industrialisation will not go anywhere.

For industrialisation in Africa to be sustained, it thus needs to be socially rooted – having a strong class and broader base, including in the state bureaucracy. State 'embeddedness' is important for the design and implementation of effective industrial policy (Andreoni *et al.* 2021a). This means a depth and breadth of interests across fractions of capital and across classes, and across regions and ethnic groups, that are vested in the success and continuation of industrialisation.[9]

Weak state capacity is one of the arguments that has been voiced against an industrial policy agenda in Africa. Curiously, this argument is applied specifically to industrial policy: we do not hear arguments that African governments should not undertake macroeconomic policy, for example, because of weak state capacity. I argue that state capacity and state capabilities are, at least to some extent, endogenous to what the state actually does. A weak and 'hands-off' state that does not undertake vigorous industrial policy will not build up the capabilities to do so. These capabilities also cannot be built up just by sending public servants on training courses. It is through the actual design and implementation of industrial policy that public sector capabilities are built up – 'learning by doing' at the policy level. There will be failures, and there will be cases where scarce public resources are not used optimally – as has happened in industrial policy all around the world. What matters is learning from these failures and strengthening industrial policy capabilities through practice.

Industrialisation Remains a Key Tenet of Development for African Countries

Both the theory of economic development, and the experiences of development across countries and over time, show the importance of industrialisation for the development process. Internationally and over time, there are very few observed country experiences of sustained fast growth without industrialisation.

In brief, manufacturing has certain characteristics that enable it to play a special role as an engine of growth. These growth-pulling properties include the scope for dynamic increasing returns; the strength of linkages (especially backward linkages) with other sectors; the role of manufacturing in alleviating balance-of-payments constraints; and the contributions of manufacturing to technological advancement. It is important to recognise that there is a high degree of heterogeneity in each sector of the economy, with a diversity of activities within each sector, and that some activities within services or agriculture will have these growth-pulling properties more strongly than some activities within manufacturing. Furthermore, there is growing integration between sectors, and 'fuzziness' of sector boundaries (Cramer & Tregenna 2020). We thus need a nuanced view that considers both sector-specificity and activity-specificity, and that promotes dynamic activities in any sector. Still, there are common denominators across manufacturing activities that are relevant to growth, and industrialisation remains key to growth and development internationally.

In recent times, there have been debates on whether services can act as an alternative engine of growth in Africa.[10] It is true that services now account for much of employment in Africa, there is great diversity within the service sector, and there are pockets of services activities that are strongly growth-pulling. There is no doubt that services play an important role in various respects, and that certain kinds of services are high in productivity, skills-intensive and technologically advanced and can contribute strongly to growth. But overall, I see no basis at this stage for confidence in the viability of the services sector taking the leading role in driving growth in African economies, pulling along other sectors, and enabling African countries to catch up with more advanced economies. In addition to the inherent characteristics of activities within different sectors and the 'special properties' of manufacturing as an engine of growth (Tregenna 2008), one reason for this is the low level of economic development still generally prevailing on the continent. Without having fully industrialised, and still being at relatively low levels of income per capita, it is not feasible to transition on a significant scale economy-wide into the kinds of high-productivity, advanced tradable services that could serve as engines of growth. This is in contrast with the nature, scale and role of services in some of the richest countries in the world. Advanced economies have typically already undergone long and deep industrialisation (even if they have since deindustrialised), through which they have built strong productive capabilities, and these economies are typically complex and diversified with dense linkages and learning channels. In many African countries, and notwithstanding some important exceptions, the nature of the service sector often has a high degree of informality, with relatively low skills, low productivity and low technology, with limited tradability, and is more oriented towards consumer than producer services. All these characteristics are not always adequately taken into consideration in some of the 'hype' around the potential of services as an alternative leading engine of growth in Africa. Certainly, services are highly heterogenous within and across African countries and there are some highly dynamic services activities. Services play a very substantial role in employment creation, and have a range of important intermediary roles in any economy. But this does not detract from the centrality of industrialisation for sustained growth, and of the importance of industrial policy to realising this.

Some Key Topical Issues for Industrial Development and Policy in Africa

Upgrading and technological progress

The whole world is now 'running', and African countries need to run faster to keep pace and catch up. One dimension of this is in technological upgrading. Innovation and technological progress are fundamental to economic progress. Sustained rapid growth is unlikely without technological advancement. Innovation is relatively low in African firms, relative to other developing regions of the world (Paus *et al.* 2022). While there are opportunities for leapfrogging, sustained industrial progress is only possible with ongoing investment, learning, building of capabilities and upgrading (see Figueiredo 2001; Andreoni 2014; Lee 2019; Avenyo *et al.* 2021a). It is important for African countries to take a dynamic view of comparative advantage, and to actively build up strengths in activities in which they are not currently competitive, but to have the potential to become so in the short to medium term.

We can understand innovation, technological upgrading, and the building of productive capabilities as part of the 'microfoundations' of structural change. There is an iterative relationship between capabilities and industrialisation. While capabilities are needed for industrial development success, these capabilities are also partially endogenous to and are built through industrialisation. This endogeneity is included through 'learning by doing' at the firm, sector and country levels.[11]

This is of course challenging in countries that are relatively scarce in capital and skills. Furthermore, an abundance of low- or semi-skilled labour, and the need for large-scale job creation in the context of high unemployment, will push countries towards prioritising more labour-intensive activities. Yet even for low-income countries that are trying to gain a foothold in industrialisation, it remains important to invest in innovation, capabilities and technological upgrading. Even for middle-income African countries, there is a danger of getting stuck in a 'middle-income technology trap', referring to 'specific structural and institutional configurations that are not conducive to increasing domestic value addition and to sustained industrial and technological upgrading' (Andreoni & Tregenna 2020:324).

Regional integration

It is well recognised that the domestic markets in many African countries are too small to serve as a springboard for industrialisation, as it is difficult to achieve the required economies of scale. This points to the importance of regional integration as a core part of the continent's industrialisation pathway. Africa's combined population is about the same as that of China and potentially provides a good basis for Africa's industrialisation.

There are different approaches to regional integration in Africa – few would argue against it, but there are different views as to the form it should take. Neo-liberal approaches focused on just removing trade barriers can be contrasted with 'developmental regionalism' (see Ismail 2021). There are also different perspectives concerning the extent to which regional integration should extend to the movement of people, in addition to the movement of goods, services and capital.

The AfCFTA is a fundamental development with the potential to be a 'game-changer' for industrial development in Africa. The AfCFTA is the largest free-trade area in the world (by number of participating countries). It aims at a single market for goods and services contributing to the movement of capital and persons, and at laying the foundation for a later Continental Customs Union. Regional integration in Africa is projected to have significant net benefits for the continent, including in growth and in poverty alleviation. The broader goals of the AfCFTA explicitly include structural transformation and industrialisation, and the vision is one in which these are integrally intertwined with trade and regional integration.

Beyond the immediate economic benefits, the AfCFTA can be understood as one part of giving effect to post-independence dreams of a united Africa, pan-Africanism, and economic independence. Without overly romanticising the AfCFTA in this spirit, it is important for a regional integration project to be animated by a vision that goes beyond economic benefits.

As with any processes of regional integration, there will inevitably be (at least relative) winners and losers, based both on prior conditions and on policy choices on how the integration unfolds. One particular concern is the need to ensure that nascent manufacturing sectors in the poorer and less industrialised countries are not thwarted by increased manufacturing imports from the more advanced industrialised economies of the continent. This underscores the importance of active steps to build manufacturing productive capabilities in the less advanced economies, including through their productive integration into regional value chains (RVCs).[12] Another issue is that removing trade barriers is only part of what is needed to significantly upscale trade within the continent. Non-tariff barriers, infrastructural deficiencies and border delays are among the issues needing to be addressed.

Green industrialisation

Lastly, it will be crucial for an African industrialisation agenda to take on board new developments, in particular the green transition. Industrialisation pathways in any country need to be environmentally sustainable.

Africa has made a negligible contribution to global climate change.[13] The advanced economies of today underwent centuries of industrialisation, causing vast environmental damage not limited to climate change. It would be morally and politically unacceptable to 'kick away the ladder' for late (or especially late, late) industrialisers. Having said that, it is also essential to recognise climate change as an existential crisis facing humanity, about which all countries need to be concerned and to take action. The 'greening' of manufacturing is not only a moral imperative but also a 'business necessity' for successful industrialisation, as it will become increasingly difficult for firms to access large markets for goods not produced in an environmentally sustainable manner.

There are fundamental distributional issues – both national and international – with the green transition, which cannot be fully discussed here due to constraints of space. Considering the climate debt of the global North to the global South, and the rights of developing countries to pursue viable growth paths, two of the relevant issues are access to finance and access to technology for green industrialisation in Africa. Access to finance does not mean just credit facilities or soft loans, but significant net transfers of resource to directly fund a green transition. Access to technology is essential for viable green industrialisation in developing countries.[14] Provision of these is part of a 'Just Transition', especially in the context of the climate debt of the global North.

'Transformative Industrialisation for Africa' (TIfA)

In the discussions above, I have underscored the importance of industrialisation in Africa, reflected on the political economy of this, and have discussed just some key aspects of industrial development and policy in Africa. The 'grand vision' is one in which industrialisation is fundamentally transformative: 'Transformative Industrialisation for Africa' (TIfA).

Deep and sustained industrialisation can be transformative not only economically, but also socially and politically. Transformative industrialisation is broader than structural transformation. I identify four dimensions of industrialisation as potentially transformative. First, it needs to be *disruptive* – of existing political economy, comparative advantage, production systems, social relations and others that are sub-optimal for growth and development. Second, it needs to be *catalytic* of economic and social change. Third, the impact can be *systemic*, going more widely beyond growth and beyond just economic effects. Fourth, the effects can be *long-lasting*: not stop-start, but with long-term effects that endure even post-industrialisation.

I would suggest that industrialisation in Africa needs to meet certain conditions to be transformative. Scale is important (including the shares of manufacturing in GDP and in total employment). If manufacturing is of insignificant scale in an economy, and there is a lack of depth of industrialisation, it cannot have a broad transformative impact. Furthermore, while there will always be heterogeneity within each sector, the manufacturing sector on balance needs to have higher productivity, greater complexity, and be more innovative and technology-intensive on average than the rest of the domestic economy in order to play that progressive transformative role. In addition, manufacturing needs to have strong and dense linkages with the rest of a domestic economy, not only to pull it along, but also to have a transformative impact. This does not refer only to forward and backward linkages, but also to technological linkages and spillovers, learning and transfers of knowledge and skills, and so on.

Industrial policy needs to take account of country specificities (as well as even sub-national, sectoral and other specificities within countries). TIfA will thus mean different things in different contexts. Space has permitted only a very brief discussion here. It is an ambitious agenda, asking us to look with fresh eyes at the potential of industrialisation, and to aim at a 'big push' as part of new growth and development pathways for African countries.

Conclusion

In noting that global conditions have changed since the rapid industrialisation successes of the four original NICs, Thandika opined in 1988 as follows:

> So obviously whatever industrialisation 'miracles' take place, or for that matter whatever reversal of the de-industrialisation process Africa achieves it will be under radically different conditions. There can, however, be no doubt that the current process of de-industrialisation, the dismantling of structures that sustained much of the industrialisation, the institution of social structures of accumulation that are highly volatile will once again leave Africa unprepared to capture whatever new opportunities an upturn in the world economy may have (Mkandawire 1988:31).

These prescient words were penned about a third of a century ago under different continental and global conditions. They remain relevant regarding both the problems of African industrialisation and its enduring importance, and in highlighting how underlying economic weaknesses constrain African countries from taking advantage of emerging opportunities. Yet I would suggest that we do have cause to be more cautiously optimistic now.

The SAPs dealt a long-lasting blow to African industrialisation. Path dependency, feedback loops and cumulative causation meant that what could have been a virtuous circle of building capabilities, upgrading, industrialisation and growth became a low equilibrium trap. The breaking down of productive capabilities through deindustrialisation cannot be reversed easily, and the collective nature of capabilities and of learning-by-doing mean that this has broader negative effects beyond individual firms.

Had Africa been able to maintain pre-SAPs rates of industrialisation or growth, or to follow pathways closer to its Asian counterparts, the continent would be very different today.

It is important, however, to recognise that very different choices could have been made, at least in the more than three decades since the SAPs. There is a dialectic between factors internal and external to a country, and countries do make choices that in turn have implications for the balance of forces and for their own policy space. Even within global constraints, African states have agency and have not been prevented from pursuing active industrial policy over all these intervening years. While there are always limited financial resources, capacity constraints and so on, it is in countries' domestic political economy that we can understand the failure of most countries on the continent to pursue effective industrial policy.

Industrial policy has made something of a comeback in Africa, even before its more recent return to prominence and mainstreaming internationally (Noman & Stiglitz 2015; Oqubay 2015; Whitfield *et al.* 2015; Cramer & Tregenna 2020; Lopes & Kararach 2020). Industrial development and policy now feature prominently in the visions and policy documents of governments as well as of regional and continental bodies of the continent. There is an ongoing battle of ideas as to the scope, purpose and instruments of industrial policy, and how it connects with other policy domains such as macroeconomic policy. Furthermore, implementation and outcomes have been uneven. The industrialisation successes of countries such as Ethiopia serve to demonstrate the possibilities of success, even in low-income countries with limited resources, where there is political will to industrialise and concrete actions taken to actualise this.

Concomitant with the changing fortunes of industrial policy in Africa has been changing interest in this field within academic research. In the 1980s and 1990s, there was a dearth of research on industrial development and policy in Africa. As well as the general struggles of many African universities during this time, the reliance on donor or consultancy funds for research, and the practical weaknesses of industrial development and policy during this period, meant that economic research was focused overwhelmingly on different issues. During this hiatus, Thandika was one of the few to continue impactful research in this field in Africa, along with some others based both on and outside of the continent. We can thus observe a generational gap in African researchers specialised in these issues. It is exciting to see the upsurge in interest and in active research in this field across the continent, especially among young scholars. We need ambitious research agendas that connect with the fundamental development questions facing African countries.

We have seen the rise and fall, and possibly now again the rise of industrial policy in Africa. Hopefully the current emphasis on industrial policy will be sustained, and there will be the intentionality and political will to make daring and sometimes difficult choices and to boldly implement on a scale that can make a difference. 'Transformative Industrialisation for Africa' (TIfA) is part of an ambitious pathway towards this. Let us re-ignite our ambitions of development and re-imagine an industrialised, prosperous and integrated Africa.

Notes

1. In referring to Mkandawire simply as 'Thandika' hereafter, those who knew him will understand that no disrespect is intended; the fact that people generally refer to him by his first name is indicative of the informality and affection of his interpersonal relations.
2. The comparisons in this paragraph are based on gross domestic product (GDP) per capita data sourced from the World Bank (2022).
3. Recent monographs on industrial development in Africa by African scholars include Chitonge (2019), Lopes and Kararach (2020) and Oqubay (2015).
4. For contributions on Thandika's broader thinking and on the wide range of his writings, see, for instance: the special issue of the *Journal of African Transformation* edited by Vusi Gumede (Gumede 2022); Cheru (2022); and the many tributes to him, including those collated in a special issue of the *CODESRIA Bulletin* (2020).
5. Seminal contributions in the Structuralist tradition include Chenery (1955), Furtado (1964), Hirschman (1958) and Prebisch (1950, 1963); see also Blankenburg *et al.* (2008) and Ocampo (2020) on the Structuralist approach.
6. In addition to Mkandawire, see Jalilian and Weiss (2000), Noorbakhsh and Paloni (1999) and Stein (1992) on the effects of the SAPs on industrialisation and deindustrialisation in Africa.
7. See also Adesina, 2011, and Bangura, 2007, who build on Thandika's thinking on the potentially developmental and transformative role of social policy.
8. See, for example, Humphreys (2005), Mildner *et al.* (2011), and Nillesen and Bulte (2014).
9. For instance, in the South African context, Andreoni et al. (2021b:351–352) point to the need for 'building a broad coalition for reindustrialisation' as part of a new political settlement in support of industrialisation, which includes constituencies such as the industrial working class, productive black entrepreneurs, and producers of high-value agricultural crops.
10. See, for example, Owusu (2021).

11. A recent econometric analysis across African firms points to a two-way relationship between innovation and export performance at the firm level. This suggests that firms both 'learn to export' through innovation, and also 'learn to innovate' through exporting (Avenyo *et al*. 2021b).
12. Ncube and Tregenna (2022) find that forward and backward linkages among southern African countries are especially high in the manufacturing sector, particularly in the food and beverages industry, and are strongest between neighbouring countries.
13. Although South Africa is highly emissions-intensive.
14. Avenyo and Tregenna (2022) find that medium- and high-tech manufacturing is less intensive in carbon dioxide (CO_2) emissions than is low-tech manufacturing in developing countries, and suggest that technology-intensification can be part of a route towards environmentally sustainable industrialisation. This underscores the importance of access to technology for African countries and other developing economies, both new 'green' technologies and technology access more broadly.

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