JULY 2026

RESEARCH PAPER

RACE AGAINST THE CLOCK

Industrial Policy for Resource-Rich African Least Developed Economies- Transforming Wealth into Productive Capacity

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RP - 13/26

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This paper addresses the persistent challenge of resource dependence in the world's poorest countries, focusing on the ten poorest African nations where natural-resource rents average 14% of income. It argues that four decades of conventional policy advice, which treated resource dependence primarily as a revenue management problem, have failed to help these countries. While stabilization funds and permanent-income frameworks aim to smooth consumption, they do not answer the fundamental question of how to transform resource wealth into permanent productive capacity capable of generating income after rents decline.

The paper identifies a critical research gap in industrial-policy literature: many African least developed countries (LDCs) occupy a unique position characterized by weak administrative capacity and small domestic markets, but possess temporarily large fiscal space created by resource rents. This combination creates a "race against the clock," as the global energy transition and rapid technological change are shortening the economic life of both hydrocarbons and critical minerals. The paper argues that the goal of resource policy must shift from "revenue smoothing" to "productive-capacity replacement" before this fiscal window closes.

Empirical analysis reveals that the failure of resource booms did not result from a lack of investment, but an inability to convert capital into productivity. To assess this issue, the paper undertakes two complementary growth decompositions for eleven African economies, distinguishing resource-intensive countries from successful diversifiers. The results show that while many resource-intensive economies accumulated physical capital, their total factor productivity (TFP) was often negative, and labor productivity collapsed after commodity cycles peaked. In contrast, a group of "African diversifiers"—such as Ethiopia, Ghana, and Tanzania—achieved sustained gains by directing public investment toward labor-intensive manufacturing and tradable services, even without heavy resource endowments.

To address these failures, the paper proposes a rent-financed "Big Push" framework. Unlike traditional models focused on domestic demand, this strategy is value-chain-oriented, emphasizing the connection of firms and workers to regional and global production systems. The framework prioritizes the creation of export platforms (special economic zones), trade-enabling infrastructure, and human capital for tradable production. It advocates for a strict fiscal hierarchy where resource revenues are treated as "transformation finance" rather than recurrent income, separating a dedicated "transformation window" from short-term stabilization needs.

Ultimately, the paper warns that delayed transformation is, in practice, no transformation. As technological substitution and climate-consistent scenarios reduce the long-term value of resources, African LDCs must use their remaining rents to build competitive non-resource sectors. The "race against the clock" suggests that the greatest wealth of these nations is not the resources themselves, but the brief opportunity they provide to fund a permanent productive economy.

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1. INTRODUCTION

The ten poorest countries in the world derive an average of 14 percent of their income from natural-resource rents, and all ten are in Africa. The most resource-dependent among them, the Democratic Republic of Congo, obtains nearly 39 percent of GDP from these rents (World Bank, 2026). More striking than the level of dependence is its persistence. Many of these economies remain as dependent on natural resources today as they were four decades ago, despite repeated efforts to promote diversification. Four decades of conventional policy advice have produced limited structural transformation, making the search for a more effective framework increasingly urgent.

Most policy debates have treated resource dependence primarily as a problem of revenue management. The resource-curse literature focused on the institutional and macroeconomic consequences of abundance; sovereign wealth funds and stabilization funds sought to smooth commodity-price volatility; and permanent-income frameworks aimed to convert finite resource wealth into a sustainable stream of consumption. These approaches address how resource revenues should be managed. They do not address the more fundamental question confronting the countries studied here: how temporary resource wealth can be transformed into productive capacity capable of generating income after the resource rents decline.

This omission is increasingly important because many resource-rich African least developed countries occupy a position that existing industrial-policy frameworks do not explicitly recognize. Recent work classifies industrial-policy options according to government capacity, market size, and fiscal space (Fernandes and Reed, 2026). Resource-rich African LDCs share the constraints of most low-income economies—limited administrative capacity and small domestic markets—but differ in one crucial respect: for a period of time, they possess substantial fiscal resources generated by natural-resource rents. This combination of weak capacity, small markets, and temporary fiscal abundance creates both an opportunity for transformation and a constraint imposed by time.

The paper makes three contributions. First, it identifies this overlooked category of economies within the industrial-policy literature. Second, it argues that the objective of resource policy should shift from revenue smoothing to productive-capacity replacement. The relevant challenge is not how to distribute resource income across time, but how to create productive sectors capable of sustaining growth once resource rents decline. Third, it develops a rent-financed Big Push framework adapted to a world in which the global energy transition and rapid technological change are shortening the effective life of resource wealth.

2. LITERATURE REVIEW

The question of whether natural-resource abundance promotes or hinders development has occupied economists for decades. In one of the earliest systematic studies, Gelb (1988) found that major oil exporters invested substantial resource revenues yet often failed to create durable productive capacity. A decade ago, Dinh and Dinh (2016) and Dinh (2017) argued that prevailing prescriptions centered on sovereign wealth funds and complex fiscal rules were poorly suited to low-income countries characterized by widespread poverty and weak administrative capacity. Drawing on New Structural Economics (Lin, 2011; Dinh and Lin, 2014), they proposed an alternative approach based on latent comparative advantage, labor-intensive industrialization, market-based exchange rates, and the strategic use of resource rents to overcome coordination and absorptive-capacity constraints.

Subsequent research has refined this debate along four related dimensions.

The Conditional Nature of the Resource Curse

The contemporary literature rejects the view that resource abundance inevitably undermines development. Mehlum, Moene, and Torvik (2006) and Boschini, Pettersson, and Roine (2007) show that outcomes depend critically on institutional quality. Resource wealth can accelerate growth where institutions are strong and weaken development where governance is weak. Lederman and Maloney (2007) similarly reject the notion of an inevitable curse, while van der Ploeg and Poelhekke (2017) identify macroeconomic volatility rather than resource abundance itself as the principal mechanism behind poor performance. The consensus that emerges is that natural resources are neither a curse nor a blessing in themselves; outcomes depend on how resource revenues are managed and invested.

Beyond Traditional Sovereign Wealth Funds

The literature has also moved beyond the early emphasis on permanent-income rules and offshore savings. Van der Ploeg and Venables (2011) demonstrate that, in capital-scarce economies, investing resource revenues domestically often yields higher returns than accumulating foreign financial assets. Gelb et al. (2014) argue that resource funds can support development finance if supported by adequate safeguards, while Collier, van der Ploeg, Spence & Venables (2010) emphasize the importance of "investing in investing" by strengthening project selection, appraisal, and implementation capacity (Rajaram et al., 2014). Berg et al. (2013), Presbitero (2016), and Eyraud, Gbohoui, and Medas (2023) extend this perspective by highlighting absorptive-capacity constraints and the need for fiscal frameworks capable of managing volatility without sacrificing productive investment.

Structural Transformation and Diversification

A parallel literature focuses on the conversion of resource wealth into productive assets. Rodrik (2016) documents the challenge of premature deindustrialization, while Dinh and Lin (2014) show how resource-rich economies can develop labor-intensive manufacturing and tradable services consistent with their latent comparative advantages. Venables (2016) reinterprets Hirschman's linkage effects in the context of global value chains, and Cherif and Hasanov (2019) argue that resource revenues should finance public goods—such as logistics, infrastructure, vocational education, and power—that lower costs in non-resource tradable sectors and offset Dutch-disease pressures.

Governance and Emerging Structural Constraints

Institutional quality remains central to resource management. Transparency initiatives such as EITI have improved information disclosure but have produced mixed results where accountability mechanisms remain weak (Rustad et al., 2017). Khan (2018) argues that political settlements frequently allow ruling coalitions to redirect resource revenues toward patronage networks, limiting the effectiveness of formal fiscal rules.

At the same time, two structural developments have altered the policy environment. The first is the global energy transition, which shortens the economic life of hydrocarbon reserves by reducing future demand. The second is the rapid expansion of critical-mineral markets, whose prices are increasingly shaped by technological change rather than geological scarcity. The sharp decline in cobalt prices between 2022 and 2024 illustrates the speed with which technological substitution can alter resource valuations. In both cases, the effective planning horizon for resource-rich economies is becoming shorter and more uncertain.

3. THE PUZZLE: RESOURCE WEALTH WITHOUT TRANSFORMATION

3.1 Forty Years of Immobility

The most striking finding from the 2026 update of the World Development Indicators is the persistence of poverty among resource-dependent economies. Of the twenty least developed countries ranked by GNI per capita in 1990, fourteen remain in the bottom twenty in 2024, a group overwhelmingly concentrated in Africa (Table 1). Extending the comparison to 1980[1] yields a similar result: sixteen of the twenty poorest countries with available data remain in the bottom twenty more than four decades later. Somalia and Burundi, among the poorest countries in 1990, remain near the bottom of the global income distribution today.

The persistence of low incomes is closely associated with continued dependence on natural-resource rents. The number of countries with rents exceeding 20 percent of GDP changed little between 1990 and 2021, while several economies—including the Democratic Republic of Congo, Chad, Liberia, and Burkina Faso—became even more dependent on extraction. Income gains within this group largely reflected commodity cycles rather than broad-based structural transformation.

1. The 1980 ranking excludes twelve economies for which 1980 GNI per capita is unavailable (among them Angola, Mozambique, Equatorial Guinea, and Nigeria); the twenty poorest in 1980 are identified among the countries that do report data for that year.

Table 1.

Least Developed Countries and Their Natural-Resource Dependency Selected Years, 1990–2024

Natural-resource rent as % of GDP; GNI per capita, Atlas method, current US$. Countries ranked by GNI per capita within each period.

Country	NR% 1990	GNI 1990	Country	NR% 2010	GNI 2010	Country	NR% 2021*	GNI
Somalia	13.5	160	Burundi	23.9	200	Burundi	14.0	260
Sierra Leone	19.8	190	Somalia	—	290	Cent. Afr. Rep	10.3	510
Burundi	13.4	210	Congo DR	26.0	320	Madagascar	5.5	510
Congo DR	20.1	230	Ethiopia	15.8	370	Mozambique	14.9	550
Equ. Guinea	21.0	230	Liberia	18.4	440	Malawi	4.2	570
Ethiopia	11.9	260	Madagascar	5.8	450	Somalia	11.2	620
Chad	7.5	270	Cent. Afr. Rep	7.9	500	Congo DR	38.8	670
Malawi	8.8	270	Niger	6.9	510	Niger	6.4	680
Mali	4.1	270	Mozambique	10.3	550	Sudan	12.8	710
Tanzania	11.5	280	Eritrea	2.5	550	Liberia	21.9	760
Madagascar	5.1	300	Rwanda	6.5	590	Sierra Leone	9.0	820
Uganda	15.8	320	Guinea-Bissau	14.9	620	Burkina Faso	20.1	850
Burkina Faso	6.8	320	Burkina Faso	11.1	630	Gambia	2.9	880
Niger	3.7	330	Zimbabwe	7.1	640	Chad	21.3	940
Rwanda	4.7	340	Malawi	6.0	650	Guinea-Bissau	10.4	990
Benin	8.0	350	Guinea	15.3	680	Uganda	7.5	
Ghana	6.9	380	Uganda	8.1	680	Mali	18.4	
Kenya	5.0	390	Sierra Leone	10.5	690	Rwanda	4.0	
Gambia	4.4	400	Tanzania	5.6	720	Togo	7.9	
Zambia	16.9	420	Togo	11.3	740	Ethiopia	5.9	

Source: World Bank, World Development Indicators (last updated April 8, 2026), extracted June 12, 2026.

Note: * NR% in the 2024 column refers to 2021, the latest year reported in the WDI. The ranking includes only countries with reported 2024 GNI; Afghanistan (GNI per capita last reported in 2023, at USD 370) would otherwise rank second-poorest, lowering the ten-poorest average rent share from 14.0 to 11.9 percent.

The post-supercycle experience reinforces this conclusion. Among African economies whose resource rents exceeded 10 percent of GDP, eleven experienced declines in per-capita income between their post-2010 peaks and 2024. Angola's GNI per capita fell by

roughly 48 percent from its 2014 peak, Equatorial Guinea's by 58 percent from its 2013 peak, Sudan's by 43 percent from its 2011 peak, and Congo Republic's by 40 percent from its 2014 peak. Resource wealth generated substantial revenues during the boom years but failed to create productive economies capable of sustaining growth after commodity conditions weakened.

3.2 Escaping the Trap: Two Routes Out

Of the twenty poorest countries in 1990, only six had left the bottom twenty by 2024: Kenya, Benin, Tanzania, Ghana, Zambia, and Equatorial Guinea (Table 1). Their exits, however, were not of a kind, and the difference is instructive.

Four escaped by diversifying. Kenya, Benin, Tanzania, and Ghana entered the period with relatively low resource dependence — rents of roughly 5 to 12 percent of GDP — and grew by expanding manufacturing, tradable services, and commercial agriculture rather than by extracting more. Kenya's GNI per capita rose from US$390 in 1990 to US$2,090 in 2024, Ghana's from US$380 to US$2,310, Tanzania's from US$280 to US$1,210, and Benin's from US$350 to US$1,430. None relied heavily on hydrocarbons, all pursued outward-oriented strategies, and all sustained relatively high public investment. Having climbed out, they stayed out.

The other two escaped on a resource boom, and the escape proved fragile. Equatorial Guinea (resource rents of 21 percent of GDP in 1990) and Zambia (17 percent, copper) rose on commodity revenues rather than structural change. Equatorial Guinea's oil boom carried GNI per capita from US$230 to a peak many times higher, only for income to fall by roughly 58 percent from that peak, to US$4,740 by 2024; Zambia reached US$1,220 but saw its within-sector productivity reverse after 2010 (Section 6.3). Their ascent reflected the price of what they sold, not a transformation of what they could produce.

This ordering is not confined to the countries that escaped. Even among those still in the bottom twenty, the diversifiers--Ethiopia, Togo, Rwanda, and Uganda, each with resource rents below 8 percent of GDP-- sit consistently near the top of the rank and the resource-dependent economies near the bottom — the same force that pushes a few countries out is the one that reorders those still inside.

The contrast points to a single conclusion. The decisive factor was not geology or the scale of resource wealth but whether rents were converted into productive, tradable sectors capable of generating employment, exports, and productivity growth. A resource boom can lift a country out of the bottom group temporarily; only transformation keeps it out. This is the capability that existing industrial-policy frameworks overlook, and the subject of the next section.

4. THE MISSING CATEGORY IN INDUSTRIAL POLICY

Fernandes and Reed (2026) classify the feasibility of industrial-policy instruments according to three country characteristics: government capacity, domestic market size, and fiscal space. The framework captures an important reality: most low-income economies face constraints on all three dimensions, limiting both the scale and complexity of feasible interventions.

Resource-rich African least developed countries occupy a distinct position within this framework. Like other low-income economies, they face limited administrative capacity and

small domestic markets. Unlike them, however, they temporarily possess substantial fiscal resources generated by natural-resource rents. This combination creates a development problem not explicitly addressed in existing industrial-policy typologies.

The distinction matters because it alters the nature of the policy challenge. In most low-income countries, the central constraint is financing. In resource-rich economies, financing is available for a limited period, while the institutions, productive sectors, and organizational capabilities required to use that financing effectively are often absent. The key question is therefore not how to mobilize resources but how to deploy them productively before the opportunity disappears.

This perspective also helps explain the disappointing historical record of many resource-rich economies. Existing policy advice has typically drawn either from advanced resource exporters, emphasizing stabilization and savings, or from fiscally constrained developing economies, emphasizing gradual institution-building. Neither approach corresponds closely to the circumstances of resource-rich African LDCs. Stabilization frameworks preserve wealth but do not necessarily create productive capacity, while gradualist approaches may require more time than the resource window permits.

The argument developed in this paper is therefore straightforward. The objective of resource policy should not be limited to smoothing revenues across generations. It should be the transformation of temporary resource wealth into productive capacity capable of sustaining growth after resource rents decline. Once framed in this way, the challenge becomes one of structural transformation under severe time constraints.

5. WHY THE WINDOW IS CLOSING

The urgency of this challenge stems from a simple reality: the fiscal space created by resource wealth is temporary, and its duration is becoming increasingly uncertain.

For hydrocarbon exporters, the global energy transition is shortening the economic life of reserves. Under climate-consistent scenarios, global oil demand peaks before reserves are exhausted, and roughly 60 percent of current African production could be uncompetitive by 2040 (McKinsey, 2022), leaving a realistic window of ten to fifteen years. For critical-mineral exporters, technological change introduces a different source of uncertainty. New battery chemistries, materials substitution, and evolving industrial technologies can rapidly alter demand and prices.

The relevant planning horizon is therefore determined less by the quantity of resources in the ground than by how long global markets will continue to value them. Resource-rich economies face the risk that the revenues needed to finance transformation may decline before the productive sectors intended to replace them have been established.

This shifts the policy problem from resource depletion to opportunity depletion. The critical question is not whether natural resources will eventually be exhausted but whether the productive economy capable of replacing them can be built before the fiscal window narrows. Speed therefore becomes a central element of development strategy. Delayed transformation may be equivalent to no transformation at all.

The historical record reviewed in the next section suggests that previous resource booms failed not because revenues were unavailable, but because those revenues were not converted into productive capacity. Understanding why this occurred is essential to designing a strategy capable of avoiding the same outcome.

6. WHY PREVIOUS RESOURCE BOOMS FAILED

If resource-dependent economies have repeatedly enjoyed large revenue windfalls, why have those booms left so little durable productive capacity behind? The evidence points to a common pattern: resource revenues financed investment, but that investment often failed to generate sustained productivity growth. The problem was therefore not the availability of capital but the inability to convert capital accumulation into productive transformation.

6.1 Governance Failures

The governance record of Africa's resource funds illustrates this challenge. Botswana's Pula Fund remains a notable success, supported by fiscal discipline, institutional continuity, and credible oversight. Ghana's Petroleum Funds have also demonstrated relative resilience under parliamentary and civil-society scrutiny.

The failures, however, have been more common. Nigeria's Excess Crude Account was largely depleted despite repeated oil-price booms (SOAS Anti-Corruption, 2022); Angola's sovereign fund suffered major governance failures; Chad dismantled its Future Generations Fund only a few years after its creation; and large-scale revenue leakages have been documented in the Democratic Republic of Congo. The contrast suggests that formal fiscal rules alone do not guarantee success. The effectiveness of resource funds depends less on their design than on the institutions capable of enforcing them.

The experience of Africa's diversifiers reinforces the same lesson. Ethiopia, Rwanda, Kenya, and Côte d'Ivoire did not succeed because of superior ***natural***-resource endowments. They succeeded because public investment was directed toward productive sectors and sustained over time. Their experience highlights the central limitation of stabilization-focused approaches: they provide guidance on how much to save but little guidance on what resource revenues should build.

6.2 Structural Transformation Failures

The governance evidence explains why resource revenues were often poorly managed. The growth decompositions help explain why the resulting investments failed to generate lasting transformation.

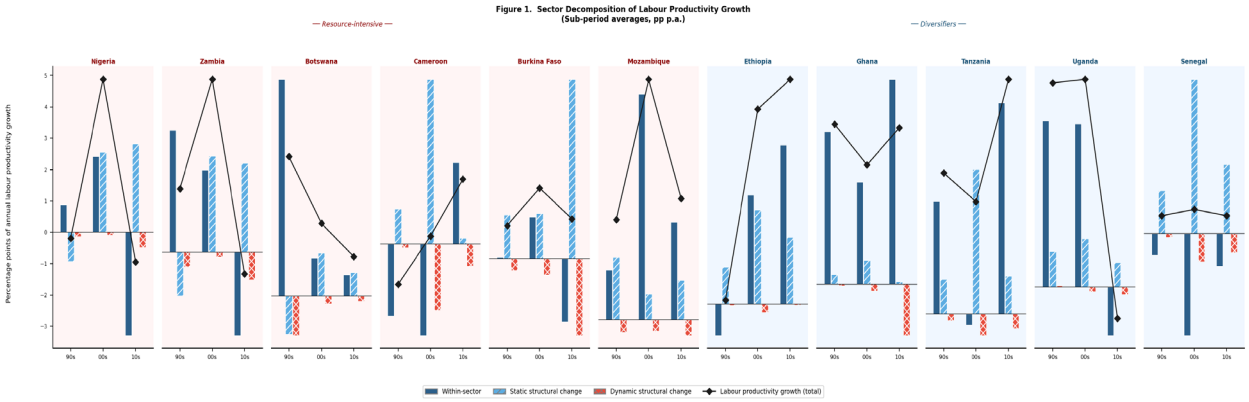
The analysis covers eleven African economies divided into two groups: six resource-intensive economies—Nigeria, Zambia, Botswana, Cameroon, Burkina Faso, and Mozambique—and five lower-resource economies—Ethiopia, Ghana, Tanzania, Uganda, and Senegal. Following McMillan et al. (2014) and Timmer et al. (2014), labor-productivity growth is decomposed into a within-sector effect, a static structural change effect (gains from labor moving toward higher-productivity-level sectors), and a dynamic structural change effect (positive when labor moves toward sectors whose productivity is simultaneously growing):

$$\Delta Y_t = \sum_{i=1}^{n} \theta_{i,t-k}\ \Delta y_{i,t} + \sum_{i=1}^{n} y_{i,t-k}\ \Delta\theta_{i,t} + \sum_{i=1}^{n} \Delta\, y_{i,t}\, \Delta\theta_{i,t} \qquad (1)$$

The sum of the second and third terms is the structural transformation effect (Diao, McMillan, & Rodrik, 2019). Figure 1 presents the three-component decomposition for each economy across the sub-periods 1990–99, 2000–10, and 2011–18, with each component shown separately so the specific mechanism of failure can be identified.

Figure 1.

Sector decomposition of labor productivity growth



Source: Author's calculations from UNU-WIDER Economic Transformation Database (2021 release). Note: Resource-intensive economies (pink background): Nigeria, Zambia, Botswana, Cameroon, Burkina Faso, Mozambique. Lower-resource economies (blue background): Ethiopia, Ghana, Tanzania, Uganda, Senegal. Three sub-periods: 1990–99, 2000–10, 2011–18. Dark blue bars = within-sector effect; hatched blue bars = static structural change; red hatched bars = dynamic structural change; diamond markers connected by line = total labor productivity growth.

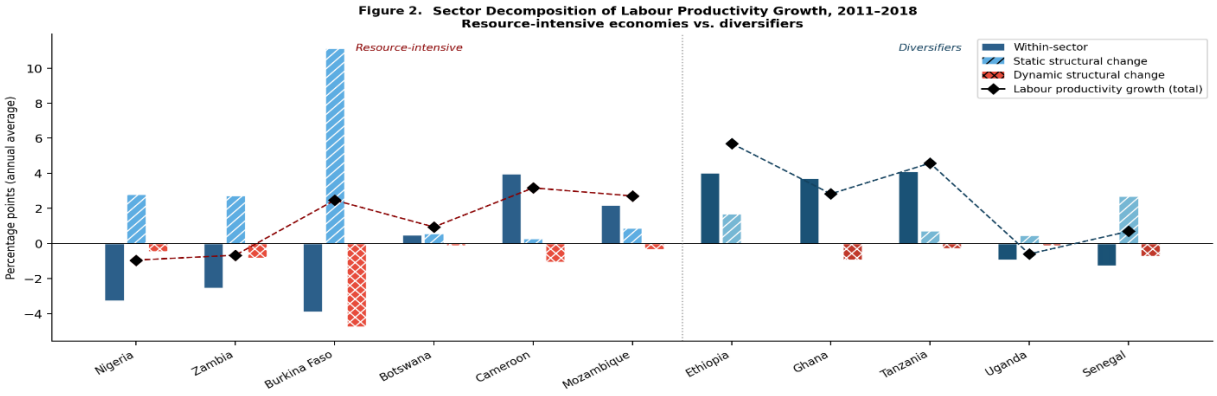
Four findings emerge from the analysis.

First, dynamic structural change was negative or near zero in thirty of thirty-three country-period observations. Across both groups, workers generally moved toward sectors with higher productivity levels but not toward sectors experiencing the fastest productivity growth. This confirms the broader African pattern identified by McMillan and Rodrik (2014).

Second, the most striking divergence appears after 2010. Within-sector productivity collapsed across the resource-intensive economies while improving or remaining positive among the lower-resource economies. Nigeria, Zambia, and Burkina Faso all experienced sharp declines, whereas Ethiopia, Ghana, and Tanzania recorded substantial improvements.

Figure 2.

Within-sector divergence, 2011–18



Source: Author's calculations from UNU-WIDER Economic Transformation Database (2021 release). Note: 2011–18 sub-period only. Countries ordered within groups by within-sector contribution. Dashed lines connect total labor productivity growth values within each group.

Third, labor reallocation continued despite the productivity collapse. Workers kept leaving low-productivity agriculture, but the sectors receiving them lacked the productive capacity required to sustain growth. The failure therefore lay not in labor movement itself but in the weakness of the receiving sectors.

Fourth, the resource-intensive economies failed to build productive structures capable of withstanding commodity downturns. When revenues weakened after the commodity super-cycle, the underlying productivity weakness became visible.

6.3 Growth Decomposition by Factors

The second decomposition draws on the Conference Board Total Economy Database (September 2025 release). Output growth is decomposed into contributions from labor quantity and quality, ICT and non-ICT capital, and total factor productivity:

$$\hat{Y} = \alpha\hat{K} + (1-\alpha)\hat{L} + \hat{A} \qquad (2)$$

where $\hat{Y}$, $\hat{K}$, $\hat{L}$ and denote growth rates of output, capital, and labor; α and $1-\alpha$ are the income shares of capital and labor; and $\hat{A}$ —total factor productivity (TFP)—is obtained residually. Table 2 presents period-average contributions for each economy from the 1980s through 2025.

The results reveal a striking contrast between investment and productivity. Capital accumulation contributed substantially to growth across most resource-intensive economies, yet TFP was negative in eight of the eleven countries during 2011–25. Botswana recorded negative TFP in every period after 1990. Nigeria's TFP contribution fell from 5.5 percentage points in the 2000s to slightly negative values after 2010, while Zambia experienced a similar reversal (Zambia Ministry of Mines and Minerals Development, 2025).

Table 2.

Factor Decomposition of Real GDP Growth (%)

Country	Period	Real GDP	Lq	Lc	ICT	non-ICT	TFP
Botswana	1980–89	10.4	1.2	0.4	1.2	5.5	2.06
	1990–99	3.8	1.1	0.4	1.3	4.0	−3.02
	2000–10	3.1	0.4	0.2	1.3	3.7	−2.47
	2011–25	3.5	0.8	0.2	0.7	4.2	−2.46
Burkina Faso	1980–89	4.1	1.3	0.1	0.0	3.5	−0.83
	1990–99	4.9	1.2	0.1	0.1	2.7	0.81
	2000–10	5.4	0.7	0.1	0.2	2.4	2.05
	2011–25	5.0	0.1	0.2	0.4	3.8	0.51
Cameroon	1980–89	4.4	0.7	0.1	0.4	4.8	−1.66
	1990–99	0.8	0.7	0.1	0.3	1.2	−1.59
	2000–10	3.6	0.5	0.1	0.6	2.3	0.07
	2011–25	3.8	0.4	0.1	0.4	3.8	−0.83
Ethiopia	1980–89	2.5	1.6	0.1	—	—	—
	1990–99	2.0	1.3	0.1	−0.05	1.2	0.30
	2000–10	7.5	1.8	0.1	0.6	3.2	1.83
	2011–25	8.3	1.7	0.2	0.3	6.1	0.17
Ghana	1980–89	1.9	1.7	0.3	0.2	−0.26	−0.08
	1990–99	4.4	0.6	0.1	0.4	1.0	2.26
	2000–10	5.4	1.7	0.2	1.0	2.0	0.51
	2011–25	5.1	1.0	0.2	0.6	1.3	1.91
Mozambique	1980–89	−0.33	1.9	0.1	0.0	0.6	−2.89
	1990–99	6.1	2.2	0.1	0.1	1.8	1.88
	2000–10	7.2	1.4	0.1	0.4	2.1	3.13
	2011–25	4.5	1.8	0.1	0.5	2.4	−0.26
Nigeria	1980–89	0.6	0.2	0.1	0.3	2.9	−2.92
	1990–99	2.6	0.2	0.1	0.4	1.8	0.08
	2000–10	8.2	1.0	0.2	0.3	1.2	5.52
	2011–25	2.8	2.0	0.4	0.0	0.5	−0.10
Senegal	1980–89	2.4	0.8	0.1	0.2	2.4	−1.13
	1990–99	3.1	0.4	0.0	0.5	2.7	−0.53
	2000–10	3.4	0.5	0.1	0.3	3.5	−1.00
	2011–25	5.0	0.8	0.0	0.8	5.8	−2.46

Tanzania	1980–89	1.8	1.0	0.1	0.2	−0.47	1.15
	1990–99	2.9	0.6	0.1	0.3	1.6	0.33
	2000–10	6.2	1.0	0.1	0.3	6.8	−1.94
	2011–25	5.8	0.9	0.1	0.0	8.0	−3.22
Uganda	1980–89	2.9	1.0	0.1	0.1	0.9	0.77
	1990–99	5.9	1.2	0.1	0.2	2.7	1.65
	2000–10	7.3	1.3	0.2	0.7	3.8	1.22
	2011–25	4.7	3.9	0.2	0.1	3.8	−3.20
Zambia	1980–89	1.6	1.8	0.2	−0.03	−1.28	0.95
	1990–99	1.2	1.0	0.1	−0.02	−1.07	1.28
	2000–10	6.9	1.6	0.1	0.2	1.4	3.68
	2011–25	4.0	2.3	0.2	0.5	2.1	−1.07

Source: Conference Board Total Economy Database, September 2025 release.

Note: Ethiopia 1980s: capital-stock series begin in late 1980s; cells reported with —. Lq = labor quantity; Lc = labor quality; ICT = ICT capital; non-ICT = non-ICT capital; TFP = total factor productivity. All values are percentage points of annual real GDP growth, period-averaged. Negative values in red.

Non-ICT capital — structures, machinery, and equipment — accounted for the bulk of measured growth in these economies. Across the six resource-intensive countries in 2011–25 it contributed roughly 70 percent of GDP growth on average, and in Botswana and Cameroon it equaled or exceeded total growth, with the remainder offset by negative TFP. Capital deepening was not merely present but dominant; what was missing was the productivity growth needed to convert that capital into sustained development.

These findings suggest that resource revenues were not primarily consumed. They were invested, but often in ways that failed to generate productivity gains. Capital accumulated while productive capacity stagnated.

6.4 The Hartwick Rule Revisited

The Hartwick Rule (Hartwick, 1977) provides a useful benchmark for interpreting these results. The rule holds that resource-dependent economies can maintain future consumption by reinvesting resource rents in reproducible capital. Yet the rule is fundamentally a quantity condition: it specifies how much should be invested, not whether those investments generate productive returns.

The African experience reveals the distinction. Many countries satisfied the investment requirement in a narrow accounting sense. Resource revenues financed substantial physical-capital accumulation. What failed was the productivity condition. Investment increased the capital stock without creating the productive capabilities required to sustain growth after resource revenues weakened.

The implication is that the Hartwick Rule must be interpreted more broadly. Resource rents must not merely be transformed into physical assets; they must be transformed into productive capacity. Ethiopia's experience demonstrates that such a conversion is possible when investment is linked to industrialization, export expansion, and institutional

commitment. The broader record suggests that achieving this outcome is considerably more demanding than simply maintaining high investment rates.

6.5 Investment Without Productive Absorption

Taken together, the two decompositions point to a common conclusion. Resource-intensive economies accumulated capital and reallocated labor, yet neither process generated sustained productivity growth. The missing ingredient was productive absorption: the institutional, organizational, and sectoral capacity required to convert investment into productivity gains.

The diversifiers provide the counterexample. Their success did not stem from superior geology but from directing investment toward sectors capable of generating exports, employment, and learning-by-doing effects. Resource-intensive economies, by contrast, often accumulated capital without creating comparable productive structures.

The central failure of previous resource booms was therefore not insufficient investment but investment without productive transformation. This diagnosis provides the foundation for the alternative strategy developed in the next section.

7. A NEW BIG PUSH FOR PRODUCTIVE-CAPACITY REPLACEMENT

The Case for a New Big Push

Resource-rich African least developed countries face a closing window in which to turn temporary natural-resource rents into lasting productive capacity. Existing approaches to resource-revenue management mis-specify the objective: they emphasize smoothing and preserving wealth rather than deciding what to build, so even properly saved rents often yield capital without productivity. Permanent-income and sovereign-fund prescriptions are poorly suited to capital-scarce economies, where the return to domestic investment exceeds the return on foreign assets, and they have also proven politically fragile in many settings.

Gradualist strategies that postpone large-scale investment until institutions improve also fail to confront the binding constraint of time. For poor, resource-dependent African economies, the central issue is not how to spread a windfall over time but how to replace it with an economy capable of generating jobs, exports, and fiscal capacity after the rents decline. Employment creation in tradable sectors is central because it embeds learning-by-doing and human capital formation, turning temporary rents into lasting capabilities.

Diversification should follow latent comparative advantage. In low-skill, labor-abundant economies, labor-intensive manufacturing remains the most effective vehicle for large-scale employment creation, with assembly industries such as apparel, footwear, and light manufacturing offering practical entry points into global production networks. Services also matter, but policy must distinguish between productive export-oriented services and low-productivity informal activities; otherwise, labor released from agriculture may be absorbed into a "local services trap" with little productivity growth. Resource revenues should therefore support a dual strategy in which manufacturing leads structural transformation while enabling services—transport, logistics, telecommunications, finance, and targeted digitalization—raise the competitiveness of both manufacturing and urban service activities.

From this perspective, the central policy question shifts from managing a windfall to replacing it. The appropriate instrument is a Big Push: a coordinated, time-bound program of public investment financed by resource rents and aimed at building a labor-intensive tradable sector before the rents expire. But this is not the traditional closed-economy Big Push of Rosenstein-Rodan (1943) or of Murphy, Shleifer, and Vishny (1989), in which coordination works mainly through domestic demand and simultaneous industrialization across sectors. In small, open African economies, the binding problem is different: not the size of the home market, but the difficulty of connecting firms and workers quickly and competitively to regional and global production systems. The coordination target therefore shifts from broad domestic market creation to the practical requirements of export production—reliable infrastructure, logistics, imported inputs, skills, and supplier capabilities—so the proposed strategy is best understood as a value-chain-oriented Big Push rather than a classic import-substituting one. That is also why regional platforms matter: where one small economy cannot alone reach efficient scale or build the full range of complementary activities, regional markets and cross-border value chains can help do so.

The policy instruments follow from that logic. The emphasis should fall on first-choice tools suited to small-market, low-capacity settings: industrial parks and special economic zones, skills development, market-access support, quality infrastructure, and related measures that make export production viable. Equally important are the exclusions: protective import tariffs aimed at building industry behind a domestic-market wall (import substitution), prestige infrastructure disconnected from tradable production, and untargeted subsidies that consume fiscal space without creating productive capacity.

A Fiscal Framework for the Big Push

A detailed fiscal framework for the Big Push is presented in a companion paper (Dinh, 2026) and only a short summary is provided here. The framework starts from a different premise than the conventional resourcerevenue literature: the central problem is not smoothing volatile income, but using a temporary fiscal windfall to build a nonresource tradable economy before the window closes. Fiscal policy is thus the principal instrument for transforming exhaustible rents into productive capacity, export capability, and mass employment in laborintensive activities.

For resourcerich least developed African countries, this implies a shift from permanentincome logic to a productivecapacity replacement logic. Success is measured less by the size of a sovereign wealth fund than by whether the resource boom leaves behind industrial parks, logistics systems, trained workers, domestic supplier networks, and competitive exporting firms that can survive once rents decline. The framework is a fiscally disciplined, timebound, exportoriented Big Push, governed by strict rules and project selection, constrained by a temporary fiscal window, and geared toward integration into regional and global value chains.

Expenditure Sequencing and Spatial Concentration. Resource revenues should be treated as transformation finance, not recurrent income. The state must distinguish the temporary rent stream from permanent tax capacity, avoiding recurrent commitments—especially wage bills, generalized subsidies, and prestige projects—that outlive the boom and crowd out transformational investment.

The objective is to channel a large share of windfalls into five classes of productive assets that support valuechainintegrated industrialization:

- **Tradeenabling infrastructure:** reliable power and water, transport corridors, ports, customs modernization, and digital backbone systems.

- **Placebased industrial infrastructure:** special economic zones, industrial parks, and bonded logistics platforms.
- **Human capital for tradables:** technical and vocational education, factoryfloor supervisory skills, and worker housing and transport where binding.
- **Firmlevel capability upgrading:** supplier development, quality and standards infrastructure, and technology absorption.
- **Temporary fiscal support:** to offset initial cost disadvantages for exportoriented firms in highcost environments.

The expenditure framework should be organized around a hierarchy of uses rather than line ministries. At the top are highreturn public goods with strong complementarities—reliable power, freight logistics, trade facilitation, industrial land development, and vocational training tied to specific export activities—while generalized consumption subsidies, untargeted transfers to insiders, and prestige projects with weak tradablesector links should be excluded from the Big Push envelope.

A practical sequencing involves three phases. First, "investing in investing": building projectidentification and appraisal systems, procurement controls, transparent pipelines, customs digitization, and planning a small number of priority industrial clusters, while rapidly removing binding bottlenecks such as power reliability, border delays, serviced land, and workforce readiness. Second, scaling up spending into a limited number of export platforms—industrial parks or special economic zones linked to ports, airports, or corridors, with reliable utilities, onestop clearance, bonded warehousing, and onsite training. Third, shifting fiscal effort from enclave infrastructure to domestic linkage deepening through supplierdevelopment programs, standards and technologyextension services, and local skills upgrading so that anchor firms source more inputs domestically.

Concentration of expenditure is essential. Weak state and implementation capacity argue against nationwide rollout at the outset; instead, investment should be spatially focused in a few commercially credible clusters where demonstration effects, reliable services, and clear performance monitoring are feasible. The aim is to create islands of competitiveness that anchor structural transformation, rather than thinly spread projects that yield incomplete infrastructure and no tradablesector takeoff.

Within these clusters, public money should reflect valuechain realities. African export assembly firms often fail not because wages are intrinsically high but because total operating costs—power outages, logistics delays, customs uncertainty, quality problems, lack of supervisors, and expensive imported intermediates—erase thin margins. Fiscal policy should therefore subsidize fixed entry costs rather than ongoing operations by funding off and onsite infrastructure, utilities, customs systems, training, standards institutions, commonuser facilities such as labs and cold chains, and only temporary, declining subsidies that solve specific coordination failures.

Trade Taxes, Revenue, and Subsidy Design. A valuechainintegrated Big Push requires a fiscal regime very different from traditional importsubstitution. In global value chains, laborintensive exporters depend on imported machinery, components, fabrics, chemicals, packaging, and services, so taxing these inputs is tantamount to taxing exports and can destroy competitiveness. Intermediate and capital goods used in export production should therefore enter duty free, quickly, and predictably through bonded warehouses, dutydrawbacks, zerotariff zones, temporary admission regimes, and digitized customs that minimize discretion and delay.

Dutyfree regimes must be matched by tight administration to prevent leakage into domestic markets. Integrated digital tracking, inventory reconciliation, and credible penalties for diversion are essential so that trade facilitation and revenue protection become complements, while taxation shifts toward domestic consumption, resource rents, landvalue gains, and nonexport activities.

Financing the Big Push cannot rely solely on volatile and temporary resource rents. While the windfall provides catalytic funding, domestic revenue should gradually expand through broadbased consumption taxes, targeted excises, revalued property taxes in infrastructureenhanced areas, and stronger income and business taxation outside the export platform, following the principle of not penalizing imported intermediates, hiring in tradables, or earlystage export profitability.

In this context, direct fiscal support to firms must be temporary, transparent, and performancebased. Three categories of support are justified early on: entry support for anchor investors in activities consistent with latent comparative advantage; wage and trainingrelated support to bridge the gap between subsistence earnings and wages needed to attract workers into formal production; and domesticsupplier support, including matching grants for machinery, certification, and technical assistance. All such support should be governed by sunset clauses and performance triggers, with incentives declining automatically and contingent on verifiable investment, export, employment, training, and localsourcing commitments.

Because resource revenues belong to society as a whole, firm support must be visibly linked to public outcomes. The framework should therefore require public disclosure of beneficiaries, support amounts, obligations, and periodic performance results, so that the regime remains a development instrument rather than a vehicle for rent distribution.

Human Capital, Labor Costs, and the Social Wage. The Big Push is as much a labormobilization agenda as an infrastructure and investment program. Many resourcerich African economies have abundant lowskill labor that is not employable at scale in modern tradables because of weak basic capabilities, health conditions, and work discipline, and firmlevel evidence shows labor is often more costly for African firms than for comparators at similar income levels (Gelb, Meyer, Ramachandran & Wadhwa, 2017). Fiscal policy must therefore finance the social and institutional conditions that make workers productive.

Technical and vocational spending should be reorganized around targeted export activities, delivered in close partnership with firms in industrial clusters, and focused on factoryrelevant skills such as machine operation, maintenance, quality control, supervision, logistics, and industriallanguage training where needed. Health spending should include workerfocused interventions with high productivity payoffs—occupational health, maternal health, sanitation, nutrition, and access to transport and housing near zones—treated as core inputs into productivity, attendance, and laborforce attachment.

The framework should also recognize the role of the social wage in maintaining competitive money wages. If the state provides or subsidizes transport, training, health access, and selected worker services in and around export clusters, firms can attract labor without pushing up cash wages to unsustainable levels, especially in settings where formal wage norms are distorted upward by public spending or enclave extractive sectors.

MacroFiscal Consistency, Governance, and Rules. Even a welldesigned Big Push can fail if macro management allows the boom to appreciate the real exchange rate (Rodrik, 2008), inflate costs, and destabilize spending. The framework must therefore embed industrialization in a macro regime that protects nonresource tradables through attention to

the nonresource fiscal balance, expenditure smoothing, and partial sterilization of shortterm windfalls. A portion of revenues should be saved in stabilization form to prevent abrupt spending swings, while a precommitted transformation envelope finances the Big Push pipeline on a multiyear basis so that smoothing and transformation become complements rather than competing objectives.

Exchangerate policy should aim to shield laborintensive tradables from full Dutchdisease pressures, including via gradual scaling of domestic spending with absorptive capacity and temporary support for nonresource exporters where learning externalities are large. The goal is not permanent protection but preservation of an internationally competitive cost structure during the limited period in which export capabilities are being built.

Institutional design is critical because the strongest objection to a rentfinanced Big Push is weak state capacity. All major Big Push expenditures should pass through a centralized appraisal and independent review process, with projects screened for export relevance, employment intensity, cluster complementarity, readiness, and contribution to nonresource productive capacity. The program should operate through a published multiyear pipeline, with disbursements tied to milestones and recurrent liabilities explicitly costed so that new assets do not decay when revenues fall.

Oversight should be distributed across local officials, civil society, and multilateral or independent technical actors, with regular public reporting on commitments, disbursements, physical progress, jobs, firms, and exports. The central capability is a credible projectselection gate informed by established appraisal practice, combined with respect for absorptive capacity and gradual scalingup, so that when spending reaches full scale it finances the parks, power systems, and logistics corridors required by the strategy rather than white elephants. The stakes are large: the IMF estimates that low-income countries lose on the order of 40 percent of the potential value of public investment to inefficiencies (IMF, 2015).

These principles translate into a small set of six operational fiscal rules:

- **Dual-Window Allocation:** Splitting revenues into protected transformation and stabilization windows.
- **Productivity Bounds:** Restricting the transformation window to non-resource capital and capability spending, explicitly excluding generalized consumption subsidies or untargeted bailouts.
- **Tax Neutrality:** Eliminating or fully rebating import duties on inputs for export production.
- **Performance Conditionality:** Tying all firm-level incentives to declining, time-bound contractual targets.
- **Independent Review:** Mandating independent appraisal and publication for major projects.
- **Unified Budget Reporting:** Evaluating the non-resource primary balance and recurrent-cost implications alongside the capital layout.

Ultimately, the framework should be judged by replacement metrics rather than fiscal aggregates. The relevant scorecard is whether resource revenues have financed a selfsustaining export base—workers moved into productive formal employment, firms entering valuechainlinked activities, domestic value added created around anchors, logistics and power bottlenecks reduced, and nonresource export revenue generated—

since a regime that preserves financial wealth while leaving the productive base unchanged fails the deeper development test.

8. SOUTH SUDAN: A CAUTIONARY ILLUSTRATION

South Sudan illustrates both the importance and the difficulty of productive-capacity replacement. Despite substantial oil revenues, weak institutions, conflict, and political fragmentation prevented the country from converting resource wealth into productive assets. Much of the revenue financed current expenditure rather than diversification, leaving the economy highly vulnerable to fluctuations in oil production and prices.

Box 1. The Framework Applied Ex Ante: The Case of South Sudan

The material in this box is drawn from the author's earlier book, Jobs, Industrialization, and Globalization (Dinh, 2017, Annex 4A), where it was prepared in 2015 as a case study of what a resource-dependent least developed country could do with its remaining oil revenues. The numbers have changed substantially in the decade since — mostly for the worse — and no attempt is made here to update them. The box is presented instead for what it demonstrates: that the country-specific diagnostic this paper prescribes was feasible, at modest cost and within a year, in the hardest case on the continent; and that what failed in the decade that followed was not the analysis but the political precondition, a lesson taken up below.

South Sudan at independence was the limiting case of every condition this paper describes: an economy deriving over 80 percent of GDP and nearly all exports from oil, a finite reserve horizon measured in decades, nascent institutions, social indicators below the Sub-Saharan average, a landlocked position with some of the highest transport costs in the region, and a labor force with little formal education. If the framework could be operationalized there, it could be operationalized anywhere.

It could be. Using revealed comparative advantage and the growth identification method, the study identified a short list of labor-intensive subsectors consistent with the country's latent comparative advantage — agribusiness and food processing, leather goods, wood products, and metal products — and then used firm-level surveys to map the binding constraints of each: industrial land for metal working, telecommunications for wood products, electricity for food and beverages. The macro diagnosis turned on the two macro disciplines this paper's framework emphasizes (Section 7): exchange-rate competitiveness and wage discipline. The currency had inherited a severe overvaluation, sustained by a dual exchange rate system; at the official rate, South Sudanese wages appeared hopelessly uncompetitive, while at the market rate they were competitive with the cheapest light-manufacturing locations in the region. Exchange-rate unification was therefore the single highest-return reform available. On the wage side, widespread expectations of high-paying government employment — financed by oil revenue — had raised reservation wages far above what the private sector could pay, compressing precisely the wage wedge on which manufacturing entry depends.

The recommendations were sequenced as the Big Push framework prescribes (Section 7), deliberately rejecting the exhaustive reform list: let private firms reveal where clusters form and ease the binding constraints within them; develop plug-and-play industrial parks near main towns only as clusters mature; recruit FDI into assembly-type operations; simplify customs and trade logistics; remove import tariffs on manufacturing inputs; and avoid raw-material export bans, which the input-cost analysis showed to be self-defeating. The first call on public resources was not construction but capability — the appraisal, survey, and coordination capacity that the program itself would consume.

The decade since supplies the political-economy lesson. The prescriptions were not implemented. Conflict resumed, oil production fell and was repeatedly disrupted, and the revenue window has continued to burn down without being converted into reproducible capacity. Notably, the firms surveyed in 2015 had themselves identified peace and security — ahead of finance, land, or electricity — as their top priority. South Sudan is thus the purest case of the political-settlement override formalized in Section 10.1: the binding constraint was never the diagnostic, the financing, or knowledge of the instruments, but a political settlement unable to protect the program. It is the strongest single argument for this paper's insistence that institutional protections be built in parallel with the investment program — and that the window will not wait for them.

This lesson is developed formally in Section 10.1. The political-economy objection — that a rent-financed program asks the very state whose incentives produced the failure to administer its own restraint — takes South Sudan as its exhibit, and the response there illustrates how the Big Push could be seen as an instrument of political change: an export sector creates a constituency, of exporters and the workers they employ, whose interests run counter to the rentier lobby and whose growth raises the political cost of predation. South Sudan defines the precondition of that mechanism rather than refuting it: where recurrent conflict forecloses the program before a single competitive firm can take root, the coalition that would later defend it never forms, and the diagnostic, the financing, and the instruments — all of which were available in 2015 — prove necessary but not sufficient.

9. THE RACE AGAINST THE CLOCK

The framework developed in this paper applies to both traditional hydrocarbon exporters and the emerging generation of critical-mineral producers. Although the commodities differ, the underlying development challenge is the same: temporary resource revenues must be converted into productive capacity before changing market conditions erode their value.

For hydrocarbon exporters, the pressure comes from the global energy transition. IEA scenarios consistent with 1.5°C imply oil demand peaking before 2030. Future demand is increasingly uncertain, and the economic life of reserves may be significantly shorter than their geological life. Countries that postpone diversification risk discovering that the revenues needed to finance transformation have diminished before transformation has occurred.

For critical-mineral producers, the challenge is different but no less urgent. The minerals required for batteries and grids are concentrated in Central and Southern Africa—the DRC produced 73 percent of global cobalt in 2024 (U.S. Geological Survey, 2026)—but mineral

rents are structurally identical to hydrocarbon rents: enclave revenues, Dutch-disease dynamics, single-commodity volatility, and nothing left behind at depletion. Their prices, moreover, are driven by technology: cobalt fell nearly 60 percent between 2022 and 2024 as battery chemistries shifted.

This uncertainty strengthens rather than weakens the case for diversification. Resource wealth should be treated as a temporary financing mechanism for structural transformation, not as a permanent development strategy. The objective is not to maximize extraction revenues indefinitely but to use those revenues to create competitive tradable sectors capable of sustaining growth after the resource boom ends.

The practical implications are straightforward. Countries with emerging resource discoveries should focus on building export platforms, enabling infrastructure, productive capabilities, and competitive non-resource sectors from the outset. Countries already dependent on resource revenues should accelerate diversification while fiscal space remains available. In both cases, delay increases the probability that the opportunity will be lost.

10. POLITICAL ALIGNMENT AND POTENTIAL RISKS

One objection is that the framework prescribes a technocratic solution to what is, at root, a political problem. Rents were squandered not because policymakers lacked an appraisal system or a fiscal rule, but because the political settlement in resource-dependent states rewards rent capture: ruling coalitions sustained by extractive revenues have little incentive to build a competitive tradable sector that would create independent centers of economic power and a tax base beyond their control. The fiscal rules, the review gate, and the published pipeline presuppose precisely the commitment capacity that rentier politics erodes—and South Sudan (Section 8) is, on this view, not an aberration but the rule.

The response is that the Big Push is not only an economic program but an instrument of political change. Policy does not merely respond to politics; it creates politics (Pierson, 1993). An export-oriented sector generates a constituency—exporters and the workers they employ—whose interests run counter to the rentier and import-substitution lobbies, and as it grows it raises the political cost of predation. Mauritius is the African demonstration: an export-processing zone cultivated a manufacturing-export constituency that later anchored a durable commitment to open, competitive policy against the sugar-and-import elite (Subramanian and Roy, 2003).

The coalition, however, is endogenous to success: it cannot protect the program in its most fragile phase, before any competitive firm exists. This is why the framework places such weight on spatial concentration and early demonstration wins (Section 7)—to reach critical mass before the window closes. Two residual risks remain: co-optation, the capture of the program by incumbent elites (the rationale for public disclosure of beneficiaries and time-bound, performance-conditional support), and the footloose character of foreign anchor firms (the rationale for treating domestic supplier and skills development as political, not merely economic, investments). Where the settlement is wholly closed—amid active conflict or state collapse—the framework presupposes a minimal reformist opening it cannot manufacture from nothing.

The objection also treats the status quo as the safe default and the Big Push as the gamble. The asymmetry runs the other way: the rents are finite, and under the energy transition and shifting mineral demand (Section 5) the window is closing on a schedule the country does not control. Inaction does not preserve options; it guarantees depletion with nothing durable left behind.

A second objection points to the record of industrial policy in Africa, and of special economic zones in particular, littered with underused parks and stranded infrastructure. Two features distinguish the proposed approach. First, the world-market test: because the strategy is export-oriented, international competition rather than the state selects viable activities—the discipline absent from the import-substitution regimes whose failures dominate the record. Second, the restriction to capacity-appropriate, first-choice instruments—trade facilitation, serviced industrial land, reliable power, targeted skills—rather than discretionary, easily captured tools. Ethiopia's industrial parks attracted anchor investors, created formal employment, and generated manufactured exports; their reversal owed less to economic design than to domestic conflict and the suspension of preferential market access—validating the proof of concept while underscoring the fragility the governance provisions and market diversification are meant to address.

A final objection concerns internal consistency: the framework seeks both to spend rents domestically and to prevent the real exchange-rate appreciation that would undermine the tradable sector, yet large domestic spending on parks, utilities, wages, and skills is itself a principal driver of appreciation. The tension is real but managed by the dual-window design (Section 7): the stabilization window is held in foreign assets and released into domestic spending only as absorptive capacity expands, while the composition of transformation spending—tilted toward import-intensive capital goods and productivity-raising inputs—exerts far less upward pressure than spending on non-tradables and recurrent wages. What remains is a genuine trade-off between speed and absorption, managed by sequencing and composition rather than abolished.

In summary, none of these objections is fatal, and several identify real limits that the framework manages rather than removes. Taken together, the responses point to a consistent position: the diagnosis is robust to disputes about measurement because it rests on outcomes; the prescription is distinguished from the industrial policy that failed by its export discipline and its restriction to capacity-appropriate instruments; the political-economy objection, the most serious, is met not by denying the constraint but by treating the program as a means of changing it; and the macroeconomic tension is contained by design. The decisive consideration remains the asymmetry of the closing window. The cost of the status quo is certain, while the cost of action is bounded and carries the only prospect of a different outcome. It is on that balance of risk, rather than on any certainty of success, that the case for the Big Push ultimately rests.

11. CONCLUSION

This paper began with a puzzle. Despite decades of resource extraction and repeated policy reforms, many of Africa's resource-rich least developed countries remain among the poorest economies in the world. The evidence presented here suggests that the problem is not a lack of resources, nor even a lack of investment. Resource revenues financed substantial capital accumulation across much of the continent. What they often failed to create was productive capacity.

The paper has argued that resource-rich African LDCs occupy a distinct position within the development landscape. They combine weak administrative capacity and small domestic markets with a temporary period of fiscal abundance created by natural-resource rents. Existing industrial-policy frameworks do not adequately address this configuration, and traditional resource-management approaches focus primarily on how revenues should be saved rather than what they should build.

The empirical evidence points to a consistent diagnosis. Labor moved out of agriculture, capital accumulated, and resource revenues expanded public spending. Yet productivity growth remained weak because investment was not translated into competitive productive sectors capable of sustaining growth once resource revenues weakened. The central development challenge is therefore not revenue management but productive-capacity replacement.

To address this challenge, the paper proposes a rent-financed Big Push strategy centered on labor-intensive tradable sectors, global value-chain integration, enabling infrastructure, selective public investment, and targeted institutional safeguards. The objective is not to preserve resource wealth indefinitely but to use it as a temporary instrument for building a diversified productive economy.

Ultimately, the question facing resource-rich African economies is not whether their natural resources will be exhausted. It is whether the temporary wealth generated by those resources can be transformed into a permanent source of productive capacity before the opportunity disappears.

The race is already underway. Countries that use this window to build productive sectors, competitive firms, and skilled workforces may emerge from the age of resource dependence as diversified middle-income economies. Those that fail may discover that their greatest natural wealth was not the resource itself, but the opportunity it briefly provided—and that opportunity, once lost, cannot be extracted a second time.

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