

Post-Conflict Reconstruction, Stabilization and Growth Agenda for Sudan

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Abstract

Sudan is currently embroiled in high-intensity, catastrophic, and factional military warfare, which is a culmination of an acrimonious transition following a popular uprising that managed to depose the long-reigning kleptocratic regime of General Omer al-Bashir in December 2018. However, as grave as it may be, the heavy legacy of this regime was not only confined to a divided military. Under the watch of this regime, the country experienced a major economic decline following the independence of South Sudan in 2011, due to the loss of more than three-quarters of its oil revenue. The economy tumbled by almost 50 percent to become an archetype of what's known in the macroeconomic literature as the "sudden stops." In this paper, we argue that the same entrenched economic interests that explain the failure of the former regime to prepare for the massive economic and political shock waves associated with the partitioning of the country are also relevant in explaining why the military leadership reneged on their commitment to the constitutional transition to civilian democratic rule – even at the risk of squandering the economic gains and the popular political legitimacy associated with the revolution. In view of the current warfare, we argue that the post-conflict financing and policy package should target three main priorities: urgent post-conflict reconstruction support; moving fiscal policy and structural reforms from austerity to growth; and visible progress on an urgent timeline to create political support. Moreover, we use a long-term growth model to show that the economic cost for Sudan would be catastrophic should the current military warfare be left to spiral into a long-term ethnic civil war. Instead, we show that if peace is quickly restored and robust economic reforms are implemented, the country will achieve peaceful "renaissance" growth transitions, exploiting its huge agricultural potential.

Keywords: Sudan, South Sudan, military warfare, civil war, kleptocracy, sudden stops, post-conflict financing and reforms, long-term growth, catastrophic economic cost, peaceful "renaissance" growth, agricultural potential.

JEL Classifications: P1, O1

ملخص

السودان متورط حاليًا في حرب كارثية بين الفصيلين الرئيسيين من المؤسسة العسكرية السودانية، وهي تتويج لمرحلة انتقالية قاسية أعقبت الانتفاضة الشعبية التي تمكنت من الإطاحة بنظام الجنرال عمر البشير في ديسمبر 2018. ومع ذلك، وبقدر ما قد يكون الأمر خطيرًا، فإن الإرث الثقيل لهذا النظام لم يقتصر على الجيش المنقسم فحسب. ففي ظل هذا النظام، شهدت البلاد تراجعاً اقتصادياً كبيراً، بعد استقلال جنوب السودان عام 2011، بسبب خسارة أكثر من ثلاثة أرباع عائدات النفط. تراجع الاقتصاد بنسبة 50% تقريباً ليصبح نموذجاً لما يُعرف في أدبيات الاقتصاد الكلي باسم "التوقفات المفاجئة." ونرى في هذه الورقة أن نفس المصالح الاقتصادية الراسخة التي تفسر فشل النظام السابق في الاستعداد لموجات الصدمة الاقتصادية والسياسية الهائلة المرتبطة بتقسيم البلاد، هي أيضاً ذات صلة بتفسير سبب تراجع القيادة العسكرية عن التزاماتها بدعم الانتقال الدستوري إلى الحكم الديمقراطي المدني، حتى ولو أدى ذلك إلى المخاطرة بتبديد المكاسب الاقتصادية والشرعية السياسية الشعبية المرتبطة بالثورة. وفي ضوء الحرب الحالية، فإننا نرى أن حزمة التمويل والسياسات في مرحلة ما بعد الصراع يجب أن تستهدف ثلاث أولويات رئيسية: الدعم العاجل لإعادة الإعمار في مرحلة ما بعد الصراع؛ وتطوير السياسة المالية والإصلاحات الهيكلية من برامج التقشف إلى النمو؛ وتحقيق تقدم واضح في إطار جدول زمني عاجل لبناء الدعم السياسي لبرامج الإصلاح الاقتصادي المنشودة. علاوة على ذلك، وباستخدام نموذج النمو طويل الأجل، نظهر أن التكلفة الاقتصادية للسودان ستكون كارثية، إذا تركت الحرب العسكرية الحالية لتتحول إلى حرب أهلية عرقية طويلة الأمد. بالمقابل، نبين أنه في حالة استعادة السلام بسرعة وتنفيذ إصلاحات اقتصادية متينة، فإن البلاد ستحقق تحولات نمو "نهضوية"، مستغلة إمكاناتها الزراعية الهائلة.

1. Introduction

Since April 2023, Sudan has been embroiled in destructive internal warfare between the Sudanese Armed Forces (SAF) and the paramilitary Rapid Support Force (RSF). Within its first three months, this high-intensity conflict had already wreaked havoc on Sudan's economy and exacted untold humanitarian costs on the civilian population.⁶ Even worse, the spiraling of this conflict into a large-scale ethnic and regional civil war is a distinct possibility. This violent discord within the military is a culmination of an acrimonious political transition over the last four years.

Following a massive popular uprising in December 2018 against the long-reigning kleptocratic “Ingaz”⁷ regime of General Omer al-Bashir, the SAF and RSF leaders colluded to topple the regime in April 2019 and instill a ruling “Transitional Military Council.” However, under intense popular and international pressure following a massacre of protesting civilians in front of the army's high command, they were forced to dissolve the military council and join a power-sharing transitional government with the civilian coalition that led the protest against the al-Bashir regime. The country seemed to be on course to a promising democratic, developmental future. However, the hopes of the million aspiring Sudanese youth who carried out the “glorious” revolution were dashed by yet another coup in October 2021. In view of the entrenched economic interests and the desire to continue wielding political influence, the military leaders of both factions reneged on their commitment to the constitutional transition to civilian democratic rule, squandering the economic gains and the political legitimacy associated with the revolution.⁸

However, mounting popular protests combined with renewed isolation and deepening economic woes forced the military leadership to agree to an even more elaborate framework agreement, brokered by the United Nations (UN) and the African Union. The agreement calls for a purely civilian transitional authority and for the army to exit politics and economics, toward a transformation into an apolitical, unified, and professional institution. The ramifications of the security sector reform provisions, especially with regard to the pace of the integration of the RSF into the SAF and the chain of command, led to a major rift between the leaders of the two military institutions.⁹

The outbreak of this particularly destructive war suggests that the economic agenda for Sudan must be dominated by assessing its economic cost as well as the post-conflict reconstruction program. However, it is important to understand the economic and political economy context well before

⁶ Though this war is still unfolding, the Sudan Conflict Monitor provides a bi-weekly account of its developments and its tragic impact (<https://allafrica.com/stories/202306010488.html>).

⁷ “Ingaz” is an Arabic word for “Salvation.”

⁸ See Elbadawi and Alhelo (2022) and the literature cited therein for a detailed analysis of the economic and political aspects of the post-December 2018 transition in Sudan.

⁹ SAF is led by General Abdel Fattah al-Burhan, while the paramilitaries of the RSF are led by General Mohamed Hamdan Dagalo, known as Hemedti.

the war and the post-December Revolution to better understand the root causes behind the country's economic crisis. Indeed, Sudan's economy experienced seismic events after the independence of South Sudan in 2011 due to the loss of more than three-quarters of its oil revenue, and it tumbled by almost 50 percent to become an archetype of what is known in the macroeconomic literature as the "sudden stop." The export capacity diminished, imports contracted, and foreign reserves expended, leading to severe economic depression and unstable growth henceforth.

Sudan was vulnerable to South Sudan's secession because the government had failed, from 2002 to 2011, to introduce policies that would have leveraged the substantial oil wealth to build reserves, diversify the economy, raise agricultural productivity, and create more sustainable drivers of export growth. Sudan's GDP growth became consumption-driven – with much of foreign direct investment (FDI) focused on car leasing, retail shops, restaurants...etc. – particularly in the greater Khartoum area, and consumption became more import-intensive. The regime was focused on survival, which it pursued through an unsustainable social contract based on energy subsidies, investment in the security apparatus rather than infrastructure, costly wars, and the squandering of its resources to buy patronage through corruption. These are all features of what is understood as the "resource curse," and the depth of the unsettling development crisis associated with it was exposed and rendered unsustainably devastating by the secession of South Sudan.

Since the decision to partition South Sudan was not a force majeure but rather a negotiated settlement, the Ingaz regime had sufficient time to design and implement a fiscal contingency plan to reconfigure budgetary expenditure and unify exchange rates to mitigate the impact. Conversely, expenditure spiked, owing to a persistent fuel subsidies policy, while tax revenue remained amongst the lowest in Africa. Furthermore, deficit monetization became inevitable, creating a causal sequence of exchange rate depreciation and deficit expansion.

The regime's dysfunctional response to a predictable crisis that eventually sealed its fate in 2019 can be explicated by the regime's *modus operandi* of a "political marketplace" strategy backed by oil rents to support a centralized authoritarian kleptocracy,¹⁰ which could not be sustained post-2011.

Faced with a distorted macroeconomic condition of epic proportions, the transitional government planned fiscal, exchange rate, and monetary reforms as the kernel of its economic recovery program, which aimed at achieving key milestones such as asset recovery, qualifying among the Highly Indebted Poor Countries (HIPC), and introducing an SDG-based budget for the first time. The government introduced the Sudan Family Support Program (SFSP) and a new salary structure

¹⁰ The Ingaz regime was an epitome of kleptocracy; it was an authoritarian regime that pinned its survival in power on institutionalized corruption by privatizing the state for the exclusive benefit of its supporting elites (Elbadawi and Alhelo, 2022).

as part of a major social program for containing the potential impact of austerity associated with the much-needed fiscal and monetary stabilization. Moreover, the economic vision and the government reform programs came as a product of Sudan's own vision, which subsequently provided the tenets of the International Monetary Fund's (IMF) Staff Monitored Program (SMP), which is critical for the rehabilitation of the country into the international development community and for HIPC debt relief (Elbadawi, 2020).

Against this backdrop, this paper assesses the potential of the future economic growth of the SMP-associated economic reforms and debt relief. In section 2, we analyze the legacy of the economic crisis of the Ingaz regime, detail the consequences of the sudden stop following the secession of South Sudan, and explain the institutional and political economic considerations behind the making of the kleptocratic Ingaz state.

Section 3 chronologizes and discusses the main tenets of the economic reform agenda of the transitional government and its articulation in the context of the SMP program to achieve debt relief and international support; explains the political motivations that undermined the credibility of the reforms; highlights the unexpected challenge of COVID-19; and reviews the five-pillar poverty reduction strategy. In view of the current warfare, we calibrate the original re-engagement strategy to account for the policy and financing imperatives of post-conflict reconstruction.

In section 4, we review the recent growth performance of Sudan during the last 30 years of the Ingaz regime, juxtaposed with the growth of Ethiopia under the rule of the Ethiopian Peoples' Revolutionary Democratic Front (EPRDF), and we highlight the underlying political economy considerations behind the stark growth trajectories of the two countries. Having discussed the underlying political economy by comparing and contrasting the visions of the then-ruling elites in the two countries, we deploy the World Bank's Long-term Growth Model (LTGM) to assess the potential cost of the current military warfare should it spiral into a long-term ethnic civil war, which we would argue is a distinct possibility in view of the high degree of social fractionalization in Sudan. This would constitute the tragic worst-case scenario. Instead, the best-case scenario hinges on containing this war within the military institution and eventually ending it during 2023 through a robust political settlement, leading to a resumption of the constitutional path toward civilian democratic rule. Under this scenario, the economy is simulated to achieve fast and stable growth, fueled by investment, TFP growth, and other growth drivers. We also derive the investment requirements associated with an assumed "growth miracle" akin to that of Ethiopia.

Section 5 justifies the "optimistic" growth scenario by demonstrating the tremendous growth potential of the Sudanese agricultural development strategy, built around agro-industrial growth corridors. In this context, we propose 14 agro-industrial growth corridors for Sudan, detailing opportunities and prospective industries; analyze existing infrastructure (transportation, energy, and ICT) with the required investment for rehabilitation and upgrade; showcase the agricultural

industrialization program proposed by the private sector; and point out the challenges of the growth corridors model. Finally, section 6 concludes.

2. Understanding the context: “Sudden” stops and economic collapse

The former National Congress Party (NCP) government of al-Bashir and the Sudan’s Peoples Liberation Movement/Army (SPLM/A) signed the Comprehensive Peace Agreement (CPA) in 2005. The agreement was based on a two-system, one-country formula during an interim period of six years. Therefore, under the CPA, a Government of National Unity (GNU) was formed, led by the NCP and the SPLM, with the latter as a junior partner, in addition to an SPLM-led Government of South Sudan (GOSS). The advent of oil as a major new sector in the Sudanese economy, around 75 percent of which is produced in southern Sudanese fields, figured very prominently in the CPA. The wealth-sharing protocols associated with the agreement stipulated that the GNU retains all the net revenues produced in the northern part of the country, while 98 percent of the net revenues from the oil produced in the south was to be equally shared by the two governments, with two percent allocated to the producing states.

Most significantly, the CPA also called for nationwide parliamentary, state, and presidential elections in 2009, to be followed by a self-determination referendum for the people of the south in 2011. Despite the rhetoric about the virtues of keeping the country united, the referendum eventually led to the partitioning of the country; an outcome that is increasingly recognized by many Sudanese, especially in the north, as a national disaster.

Unfortunately, the “Islamawist”¹¹ elites of the National Islamic Front (NIF), which essentially controlled al-Bashir’s Ingaz regime, did not make conditions attractive for southern Sudanese to choose unity. They preferred to partition the country and consolidate their regime in the northern two-thirds of the country to the risk of loosening their grip on power in a unified Sudan under the CPA. The emerging alliances between John Garang – the visionary unionist leader of the SPLM – and the northern opposition parties had been a matter of great concern for the leaders of the NCP and the NIF. Moreover, despite the impending loss of most oil rents, they reckoned that the discovery of large deposits of gold would allow them to finance their kleptocratic regime and continue to maintain their hold on power.¹²

However, this turned out to be a fatal political calculus, because it turned out that the partitioning of the country earmarked the unraveling of the Ingaz regime and its eventual collapse in April 2019. The leaders of the regime grossly underestimated the tremendous impact of the loss of oil on the highly oil-dependent pre-secession economy in northern Sudan, which could not be

¹¹ The “Islamawists” is a term used in Sudanese political jargon to describe political parties, such as the NIF, perceived to use the religion of Islam to advance their partisan agenda.

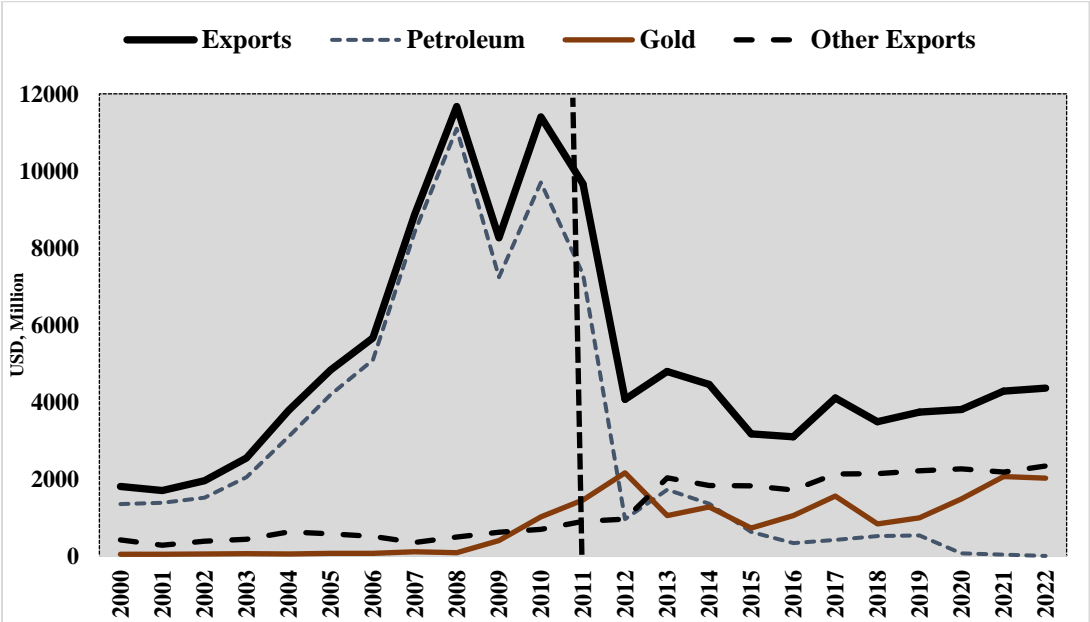
¹² See Elbadawi and Alhelo (2022) for a detailed discussion about the role of oil and then gold in financing the Ingaz regime kleptocracy.

compensated by the gold sector. The export capacity of the economy in northern Sudan (hereafter, Sudan) essentially collapsed in the aftermath of the secession in 2011 (Figure 1).

The loss of export revenues forced the precipitous compression of imports, which declined from more than USD 10 billion in 2010 to about USD eight billion in 2018, before steadily recovering to slightly more than USD 11 billion in 2022. The loss in oil revenue also led to a severe economic depression of around 17 percent in 2012, followed by a disappointing and unstable growth performance ever since, including negative growth rates since 2018, despite the recovery of imports (Figure 2).

The loss to the post-secession Sudan economy was substantial and impacted all sectors. According to the IMF, the overall loss of value-added amounted to more than 26 percent of GDP, 19 percent of which was in the oil sector.¹³ The official reserves plumped by 17 percent (USD 0.5 billion), and that of the stock of bank credit to the private sector by seven percent (0.9 of GDP), corresponding to the amount of credit outstanding provided by the southern branches of Sudanese banks (IMF, 2012). For the fiscal sector, total revenue declined by a whopping 8.3 percent of GDP in 2012, including 6.6 and 1.7 percent loss of non-oil and oil revenues, respectively. Consequently, the fiscal deficit rose from just 0.1 percent in 2011 to 4.3 percent in 2012, and in 2017-19, the fiscal crisis significantly deteriorated, when the deficit rose from 6.7 to 8.1 and then to 11.3 percent (Table 1).

Figure 1. Collapse of Sudanese export capacity post-2011 (USD, Million)



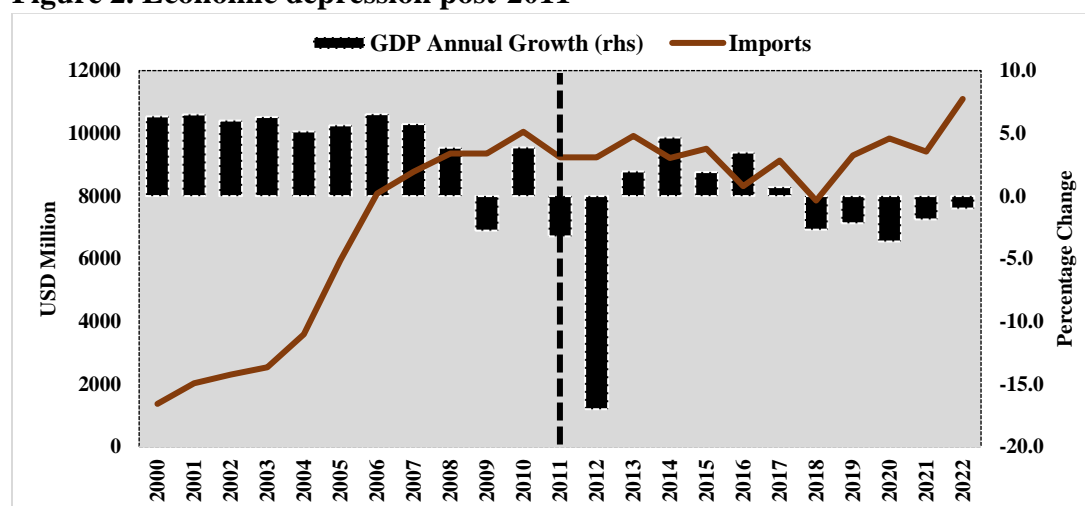
Notes:
 Source: Central Bank of Sudan (CBOS) annual reports (2000-22) and authors’ own elaborations.

¹³ This is much larger than our estimates of Figure 2, but ours is likely to have understated the true impact of the shock.

Other exports include livestock, crops, sugar, and any other exports.

The ensuing economic crisis in the aftermath of the secession has, in fact, constituted an extreme case of what came to be known in the macroeconomic literature as the sudden stops.¹⁴ This phenomenon occurs when foreign investments and other capital flows feeding an economy believed to provide a safe haven or a high return for investment capital suddenly stop. It is usually caused by the discovery of hidden problems in the management of the economy or its exposure to severe economic or political shocks, such as the Latin American debt crisis in the 1990s. Though there is nothing “sudden” about what happened to Sudan, the incumbent regime’s failure to anticipate and respond to its consequences, we will argue, has turned the secession of the south and the loss of most of the oil revenues into a sudden stops phenomenon of extreme crisis proportions.

Figure 2. Economic depression post-2011



Notes:

Source: CBOS, World Bank’s WDI database, and authors’ elaborations.

Imports (USD Million) data obtained from CBOS annual reports.

GDP annual growth (%) obtained from World Bank’s database.

Table 1. Sudden stops: Fiscal policy stance before and after 2011

In Percent of GDP	2007	2008	2010	2011	2012	2013	2014	2017	2018	2019	2020	2021
Revenue	20.6	21.8	18.7	17.8	9.5	10.4	11.4	7.0	8.8	7.4	8.5	8.1
Oil revenue	11.6	14.3	3.3	4.3	2.7	2.0	2.4	0.7	1.3	1.3	1.0	0.9
Non-oil revenue	9.0	7.5	15.4	13.5	6.9	8.4	9.0	6.3	7.5	6.1	7.5	7.2
Expenditure	21.1	20.1	19.0	17.9	13.8	13.3	13.4	13.7	16.8	18.7	11.6	11.5
Fiscal deficit	-0.5	1.7	-0.4	-0.1	-4.3	-2.9	-2.0	-6.7	-8.1	-11.3	-3.1	-3.4

Source: IMF Documents (Article IV consultations 2017 and 2019).

¹⁴ See, for example, Calvo et al. (2006, 2004, and 2003), Krugman (2000), and Bianchi and Mendoza (2020) and the literature cited therein.

In this context, this literature suggests that countries with fragile macroeconomic economic conditions prior to the onset of the sudden stop are likely to be the most severely impacted. In view of its high oil dependency and weak macroeconomic balances before 2011, this prediction was borne out very clearly for the case of Sudan (Table 2). During the five years preceding the secession of South Sudan, the Sudanese economy was completely dominated by the oil sector. For example, non-oil exports were below two percent of GDP, accounting for less than 10 percent of total exports or total imports, while the current account deficit hovered between a high of 15 percent of GDP in 2006 and a low of eight percent in 2010. In addition, FDI and portfolio investment, which are closely linked to the oil sector, steadily declined from close to USD 10 billion in 2006 to less than USD five billion in 2010. Furthermore, the already meager foreign reserves were depleted to just one month of imports by 2010, one year before the impending partitioning of the country and the loss of most of the oil proceeds that constituted the mainstay of the economy.

Table 2. Sudan’s macroeconomy before the partition

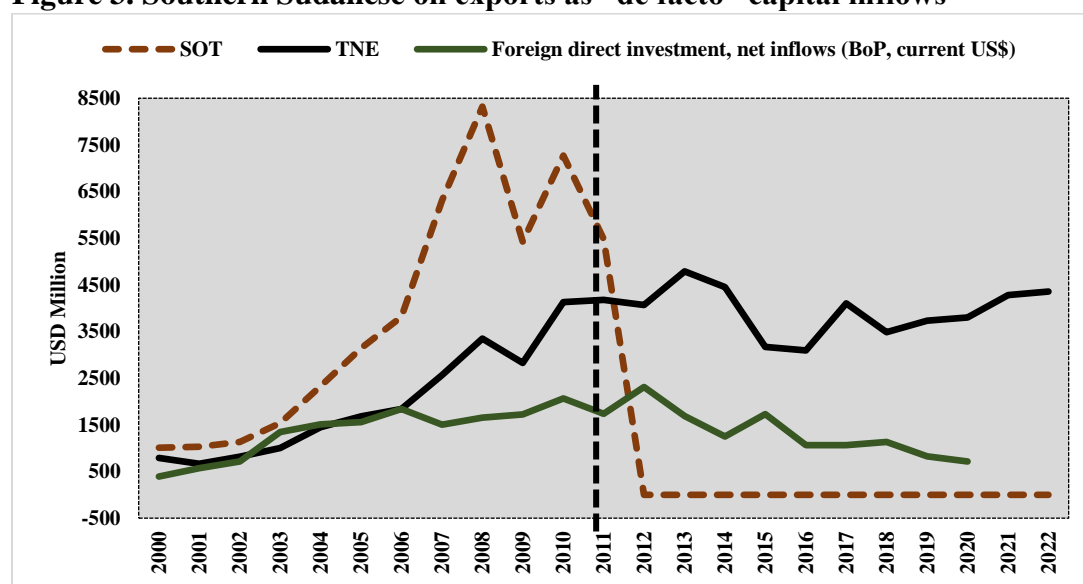
Year	2006	2007	2008	2009	2010
Non-oil exports to GDP	<u>1.6</u>	<u>1</u>	<u>1</u>	<u>1.3</u>	<u>1.4</u>
Non-oil exports to total exports	<u>9.8</u>	<u>5.2</u>	<u>4.6</u>	<u>9</u>	<u>9.5</u>
Non-oil exports to total imports	<u>8</u>	<u>6</u>	<u>6.3</u>	<u>8.2</u>	<u>10</u>
Current account balance	<u>-15</u>	<u>-12</u>	<u>-9</u>	<u>-13</u>	<u>-8</u>
Net foreign capital flows	11.4	8.3	6.7	7.8	7
Of which short term flows	1.7	1.8	2.2	3	2.5
FDI and portfolio flows	9.7	6.5	4.5	4.8	4.5
Foreign reserve (in months of imports)	<u>1.8</u>	<u>1.2</u>	<u>1.1</u>	<u>0.4</u>	<u>1</u>

Source: Table 1 and 2 of Elbadawi (2011).

To appreciate the extent of this de facto sudden stops phenomenon, we look at the de facto capital inflows – or, strictly speaking, de facto transfers – of Southern Sudanese oil exports to the economy of northern Sudan from after the CPA in 2006 until 2011. As can be seen from Figure 3, the southern oil export proceeds rose steadily since 2000, reaching a peak of USD 8.3 billion in 2008 and remaining high at an average annual level of more than USD six billion for the remaining three years, until it ceased to exist after the creation of the Republic of South Sudan in 2012. Instead, total exports from Sudan (both oil and non-oil) have remained below USD five billion ever since. Moreover, the Southern Sudanese oil not only provided most of the much-needed foreign exchange for the economy before 2012; it also leveraged FDI, which reached a peak of more than USD two billion in 2010 and 2012, before steadily declining to slightly more than USD 700 million in 2020.

Akin to the evidence from the sudden stops literature,¹⁵ the extent of the current account adjustment in post-secession Sudan was quite substantial, with the adjusted CA declining from a peak of USD 8.7 billion in 2007 to USD 4.6 billion in 2012 and just USD 1.95 billion in 2017. This amounts to a cut in the CA deficit by a whopping 7.5 percentage points of GDP between 2007 and 2012 and 5.7 percentage points between 2012 and 2017. This adjustment was much larger than those experienced by some Latin American countries in the late 1990s (Calvo et al., 2003). If we compare the CA deficit in 2006 to that of 2017, the extent of adjustment was extraordinary, at almost 16 percent of GDP (Figure 4).

Figure 3. Southern Sudanese oil exports as “de facto” capital inflows



Notes:

Source: CBOS, World Bank’s WDI database, and authors’ elaboration.

South Sudan Oil Transfers (SOT): Oil exports of South Sudanese oil fields (75 percent of total oil exports during 2000-11, and zero during 2012-22).

Total North Sudan Exports (TNE): Non-oil exports plus 25 percent of oil exports.

FDI (USD) obtained from WDI.

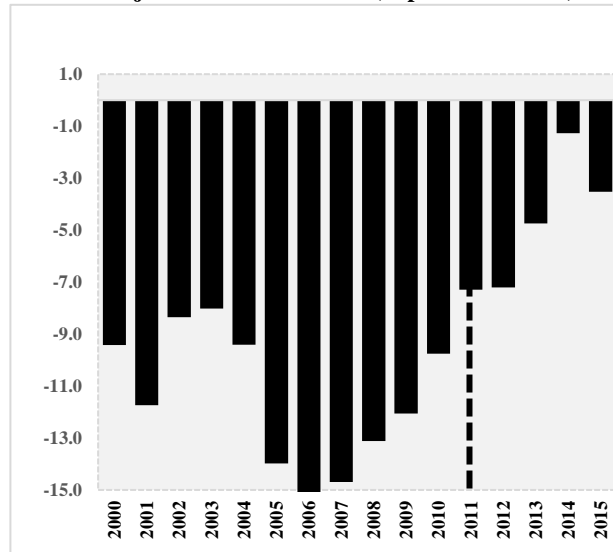
However, as seen in Figure 2, the burden of adjustment was only moderately borne out by imports, thanks to the significant rise in informal remittances by Sudanese nationals working abroad. The total size of remittances steadily increased from USD 1.9 billion in 2007 to USD 3.3 billion in 2013, and despite slowing down afterwards, it remained high – close to USD three billion. Since 2011, the parallel market for foreign exchange ran supreme, accounting for most of the remittances. For example, USD 2.4 and 2.8 billion were transferred through this market in 2011 and 2017, respectively, compared to only USD 0.8 and 0.2 billion through the official market.

¹⁵ See, for example, Calvo et al. (2003) for the evidence on CA adjustment in response to the sudden stops of the late 1990s.

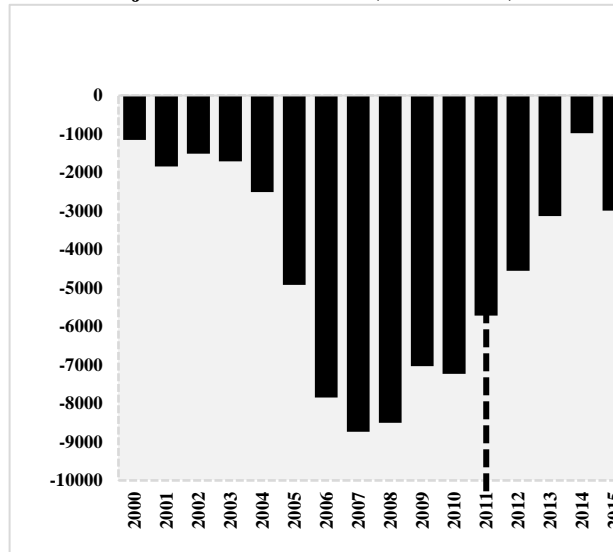
Consistent with this trend, the parallel market premium (parallel/official exchange rates) remained at 1.0 throughout 2000-09, but steadily rose thereafter, reaching 3.0 in 2017 (Figure 5).

Figure 4. Sudden stops and adjusted “northern” current account adjustment

Panel A: Adjusted current account (in percent of GDP)



Panel B: Adjusted current account (USD Million)



Notes:

Source: CBOS, UNDP, World Bank’s WDI database, and authors’ elaboration.

Adjusted “Northern” CA is given by the reported CA net of Southern Oil Exports, with informal remittances added. Informal remittances obtained from UNDP.

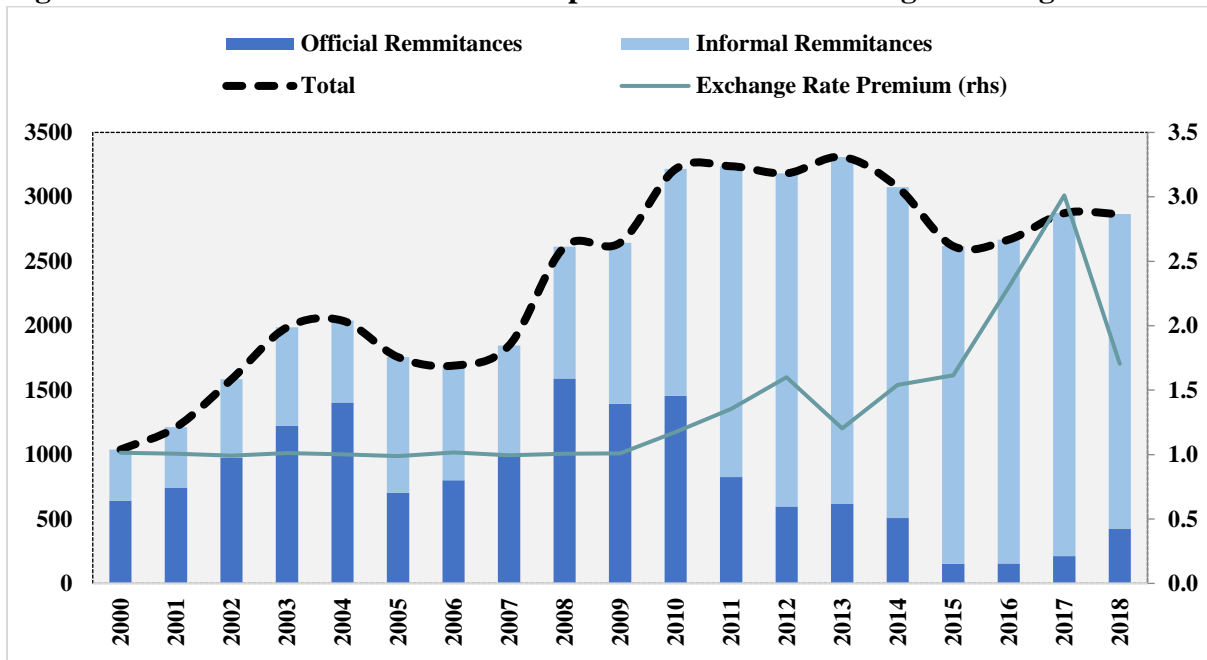
2.1 The underlying political economy for the post-secession lack of reforms

The loss of oil as a source of foreign exchange and public revenue required a major overhaul of the fiscal efforts, downsizing, and better allocation of budgetary expenditure, in addition to unifying the exchange rates and eliminating the parallel market for foreign exchange, or at least relegating this market into a sideshow.

Instead, the GDP share of tax revenue in 2011 was around 7.6 percent, among the lowest in Africa, and remained so. On the expenditure side, after a brief respite, it rose considerably during the last three years (2017-19). This was driven by fuel subsidies, which accounted for a whopping 12 percent of GDP – more than the combined expenditures on wages, goods, and services in 2019.¹⁶

¹⁶ The Transitional Government of Sudan Budget (2020) and IMF (2019).

Figure 5. Remittances and the rise of the parallel market for foreign exchange

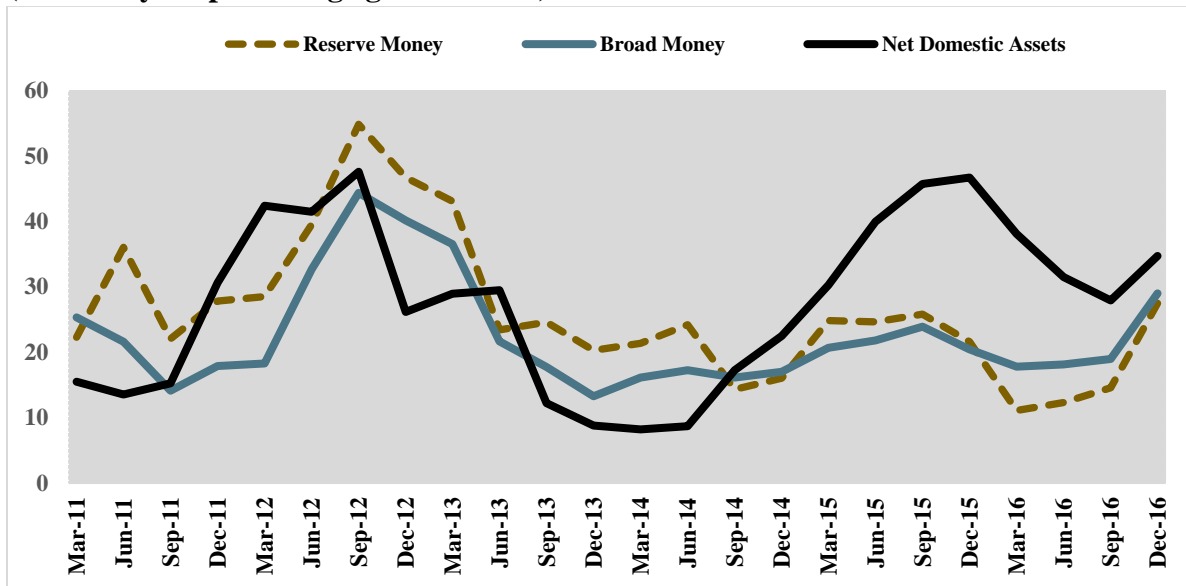


Notes: Authors' elaboration, using UNDP and CBOS databases.

Moreover, due to the limited external financing, monetization of the deficit becomes unavoidable, fueling a vicious cycle of exchange rate depreciation and deficit expansion. With domestic fuel prices fixed in Sudanese pound (SDG) terms, exchange rate depreciation automatically increases the size of the fiscal subsidy, which, in turn, increases deficit monetization, leading to further pressures on the exchange rate and inflation (Figure 6). The regime, therefore, callously pursued its expansive pre-secession macroeconomic policy, igniting a major inflationary spiral driven by food price inflation (Figure 7).

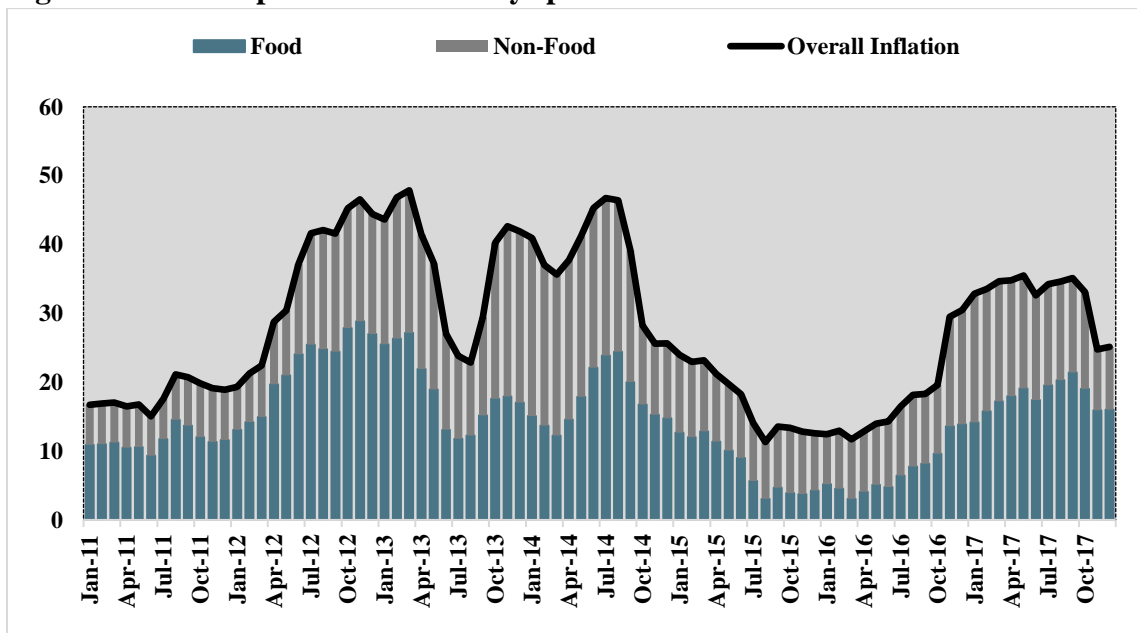
The ensuing impact on the cost of living caused considerable hardship for the remaining seven years of the regime, thus further eroding its fast-shrinking popular base. The failure to realign the exchange rate to more realistic levels, commensurate with the loss of such a major asset, led to a rising exchange rate premium between the parallel and official rates and the absolute dominance of the parallel market for settling foreign exchange transactions (Figure 5).

Figure 6. Sudan's post-oil monetary aggregates
(Year-on-year percentage growth rates)



Notes: Authors' elaboration, using CBOS and IMF databases.

Figure 7. Sudan's post-oil inflationary spiral



Notes: Authors' elaboration, using CBOS database.

The post-secession Sudanese economy continues to deteriorate, assuming severe crisis proportions. It is not surprising that the economic crisis pushed the cumulative anger and disdain for the Ingaz regime's blatant kleptocracy, leading to its eventual removal from power through a massive popular uprising that triggered a coup in April 2019 (Elbadawi and Alhelo, 2022).

The central question to ask at this juncture pertains to political economy: Why has the Ingaz regime failed to respond through meaningful reforms to avoid its eventual demise now that it lost most of the oil, i.e., the locomotive of its kleptocratic economy?

To address this central question, it is important to understand the political agenda of the movement that controlled the Ingaz regime. Having concocted a plan for ruling Sudan well before its 1989 coup, the NIF wasted little time before starting to implement a far-reaching political and economic agenda aimed at essentially “privatizing” the state as an exclusive property of the new political order. This agenda came to be known in the Sudanese popular culture as “Tamkeen” (an Arabic word for “empowerment”), giving an otherwise good concept a bad name, because it was meant to be exclusive empowerment for only the narrow popular base of the ruling NIF.

The Tamkeen political ideology pushed Sudanese politics and public policy into an “opportunistic social equilibrium,” where the political marketplace was the main institution for political settlement. As such, the system of governance under this marketplace was run on the basis of personal transactions in which political services and allegiances are competitively exchanged for material reward. A ruler bargains with members of the political elite over how much he needs to pay – in cash or access to other lucrative resources, such as contracts – in return for their support. They exert pressure on him using their ability to mobilize votes, turn out crowds, or inflict damaging violence (Alex de Waal, 2019).

Moreover, rather than opening up an opportunity for the regime to modernize the country’s agro-industrial base and create job opportunities for the emerging youth bulge, the newly found oil rents became a facile source for the financing of an even more expanded and entrenched Tamkeen program. Due to divisions within the NIF that led to the weakening of the regime’s ideological base, al-Bashir felt the need to shore up his power base by expanding patronage to tribal and regional leaders while trying to maintain the allegiance of his NIF supporters. Therefore, the oil rents-enabled centralized political marketplace was contributing to regime survival at the cost of a squandered opportunity for transforming the economy.¹⁷

Under the Tamkeen patronage system, state institutions lost meritocracy and professional capacity, while the entrenched crony capitalist class failed to create wealth beyond predatory and corrupt economic activities. Moreover, as a consequence of the ruling party’s preoccupation with empowering and monopolizing power in the face of a resistant society, the regime failed to design and implement a credible development vision for modernizing and diversifying the economy during the oil era (Elbadawi, 2016).

¹⁷ de Waal (2019) provides a compelling analysis of the functioning of the political marketplace during the first half (2000-05) of the oil era, covering the political economy; the structure of political firms and strategies; and the organization of the marketplace. See also Elbadawi and Alhelo (2022).

However, with the creation of the State of South Sudan and the subsequent loss of most of the oil rents for Sudan, the marketplace could no longer be centralized, especially with the advent of gold as the main source of financing for the marketplace. Instead, it became one of “collusive oligopoly” in the center and the near peripheries and “rivalrous oligopoly” in the conflict-affected far peripheries (de Waal, 2019). Nonetheless, the “rentier” mentality continued even after the loss of oil and, as before, the pattern of rent allocation remained the same under the ensuing “decentralized” political marketplace. This is fairly consistent with the predictions of the studied political economy literature,¹⁸ which suggests that the best option for ruling elites to remain in power under mature democracies would be to invest rents in human capital (education, health, and social welfare) and other public goods (physical and soft infrastructures). Instead, under kleptocratic regimes, such as Ingaz, clientelistic deals tend to be the central strategy for the ruling elites.

Therefore, the political marketplace, which prevailed for some 30 years of the Ingaz regime and was further consolidated during the decade of the oil era, became so entrenched that the regime simply could not extricate itself from it. Oil rents allowed for financing a centralized authoritarian kleptocracy.

The transitional government had, therefore, inherited an economy in deep crisis, with extremely distorted macroeconomic conditions. Thus, the first order of business was to deal with the daunting agenda of fixing the macroeconomy before addressing the medium to longer-term institutional and sectoral problems. Therefore, fiscal, exchange rate, and monetary reforms along with mitigating social measures have been the central programs of the reforms agenda, which also underpinned engagement with the international development community.

3. The policy framework for re-engagement and debt relief

1.1 Chronology of reform processes

The transitional government that took office in September 2019 faced multiple deep economic challenges that needed to be addressed simultaneously. The economy was in secular decline, contracting by 2.5 percent, on top of a 2.25 percent contraction in 2018. Public services (including health, education, infrastructure, and civil service) were neglected and deteriorating due to the misguided policies of the Ingaz regime and its corruption, which privatized assets as forms of patronage rather than to qualified owners and managers. As discussed in previous sections, the economic structure had never adequately adjusted to the sudden stop of oil revenues resulting from the secession of South Sudan in 2011. The fiscal deficit widened to 10.8 percent of GDP in 2019, driven by ballooning fuel subsidies, part of the failed social contract of the Ingaz regime, and one of the lowest tax-to-GDP ratios in the world. The current account deficit stood at 10.5 percent of

¹⁸See, for example, Ali and Elbadawi (2016).

GDP in 2019, and gross usable international reserves reached a very low level of USD 190 million at the end of 2019. In 2020, COVID-19 containment measures to save lives further reduced both domestic and external demand, and – together with the disruption of international trade – exacerbated the GDP contraction in 2020. Sudan also experienced historically severe flooding in 2020 that destroyed more than 1,000 homes.

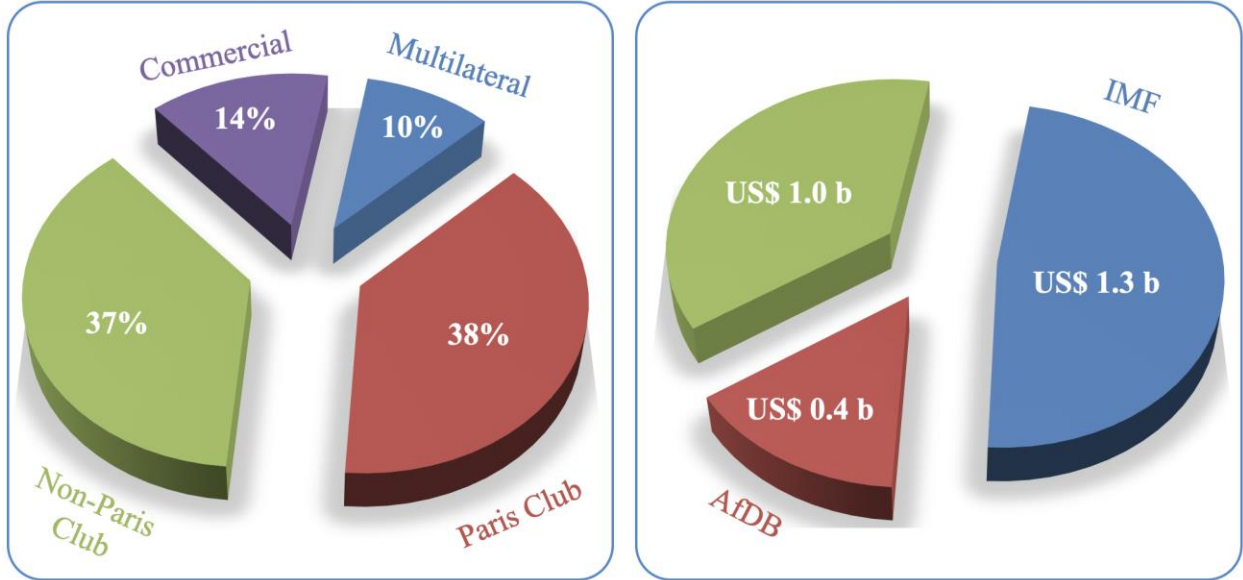
Debt sustainability

Sudan has been in debt distress for nearly four decades. The country’s nominal debt stock was initially estimated at USD 50 billion as of 31 December 2019, and after reconciliation it was estimated at USD 56.3 billion or 199 percent of GDP at the end of 2019, rising from 182 percent of GDP in 2018 due to large currency depreciation from SDG 45/USD to SDG 72/USD on a weighted average basis. Domestic debt only accounted for eight percent of GDP. The bulk consisted of public and publicly guaranteed (PPG) debt (USD 54.6 billion, of which 85 percent are in arrears), mainly owed to bilateral creditors and roughly equally divided between Paris Club and non-Paris Club creditors. Despite very limited access to new external financing, the total estimated debt burden continued to grow due to depreciation and interest as well as fee payments and charges on debt in arrears.

Figure 8 breaks down the structure of the external debt by creditor.

The present value (PV) of PPG external debt stood at around 164.6 percent of GDP at the end of 2019 – more than five times the 30 percent threshold for weak policy performers. Similarly, in 2019, the PV of debt to exports, as another indicator of debt distress, was about 1,028 percent.

Figure 8. Structure of external debt



Economic rescue without finance

Sudan had accumulated arrears to the major sources of development finance, including the IDA, the IMF, and the African Development Bank (AfDB), and therefore could not avail of the lowest-cost sources of development finance. Furthermore, the Ministry of Finance and Economic Planning (MOFEP) mismanaged its obligations in domestic bond markets by not paying in a timely manner, which limited its ability to finance budget deficits through long-term public borrowing. Finally, the financial sector was severely undercapitalized, in large part due to macroeconomic mismanagement and years of inflation and devaluation that depleted bank capital. Substantial shares of bank balance sheets were frozen in large-scale, hard currency-denominated loans to the government, which it used to finance imports. There was little prospect of this being repaid, but these loans were maintained assets on bank balance sheets. Lacking access to either domestic or foreign sources of finance, the budget deficit continued to be monetized, which resulted in triple-digit levels of inflation and a rapidly declining currency, directly impacting the lives of the Sudanese people.

The transitional government prescribed a homegrown economic reform program to remove distortions and restore macroeconomic stability despite political ramifications. An initially estimated USD 4.5 billion in external finance over 2020-21 was required, with only USD 490 million forecasted from illegal asset recovery. The military promised to contribute a share of this from its enterprises, but this proved to be illusory. As such, Sudan needed to find resources in order to clear its arrears to the major sources of development finance, get removed from the list of state sponsors of terrorism, and qualify for the HIPC program to unlock concessional development finance. To achieve this, an Upper Credit Tranche (UCT) grade program was designed and implemented. The hallmarks of the program were (a) control of expenditures through subsidy reform, (b) substantially increased domestic revenues, (c) bringing the state enterprise sector under the governance of MOFEP, and (c) unification of the exchange rate, which at the time stood at SDG 85 per USD. A new budget framework using the SDGs as a long-term anchor was introduced.

Typically, such deep structural reforms would need to be implemented gradually, supported by the concessional finance of adjustment costs. In the case of Sudan, because of the arrears and sanctions that prevented concessional finance, Sudan would need to demonstrate at least six months of successful reforms to qualify for debt relief before substantial Multilateral Debt Relief (MDB) support. However, the government sought grant support from donors, who organized (as Friends of Sudan) to finance the SFSP. The quasi-universal basic income scheme was intended to mitigate the impact of the reforms on families, who would inevitably face higher costs for fuel and other subsidized commodities, as well as higher costs for imports. The SFSP was to be piloted in June 2020 and expanded to cover 80 percent of families by 2021. The broad sequence of actions anticipated by the government is described in Box 1.

Implementation challenges: The policy consensus

The government emphasized investment to enhance real sector productivity and unlock Sudan's substantial potential for agriculture, industry, technology, and service-led growth, given its geography and human capital. The government strategy to enhance real sector productivity was unlikely to succeed in the context of the degree of macroeconomic instability and policy uncertainty in which Sudan found itself (Bernanke, 1983; Baker, Bloom, and Davis, 2016). Uncertainty would result in low investments, or direct investments to inappropriate sectors. The government proposed a sequence in which reforms would produce macroeconomic stability and appropriate price signals, thereby allowing production and investment decisions to be made effectively and incentivizing a more efficient allocation of economic resources. Growth-enhancing public investments in the real economy, articulated in the form of "growth corridors," would then be launched as stabilization efforts started to bear fruit and markets reached new equilibria (see section 5).

Stabilization in Sudan would require strong and credible price signals. Global experiences, particularly in Latin America, suggest that inflationary shocks may become chronic and lead to price spirals if policy responses are not viewed as credible. Sudan's political structure during the transition did not support the credible signals needed for the reform (Dornbusch, 1991). The power to approve budgets was vested in the Transitional Legislative Council (Article 25.1.c). Since the Legislative Council (Parliament) had not been established, the parliamentary function was implemented through a joint meeting of the Sovereignty Council and the Cabinet that took decisions by consensus (Article 25.3). However, the Central Economic Committee of the FFC, then dominated by the Sudan Communist Party, opposed key elements of the government's reform program. As such, the Sovereignty Council could not achieve consensus and decided to delay reforms multiple times.

The government focused on the public acceptance of the structural reforms to pave the way for debt relief and economic re-engagement, but the delay proved costly. The fiscal savings from subsidy reform were delayed, thereby continuing and deepening monetization and driving inflation. The government ultimately signed the SMP in September 2020. However, the weakened reform signals may have incentivized traders to stockpile goods and increase imports before currency depreciation, thereby accelerating the decline of the SDG and increasing inflation even further. While the official rate was held constant at SDG 55, the parallel market rate ballooned to SDG 150/USD in June 2020, **while** inflation grew to 114 percent. Both indicators accelerated their decline throughout 2020.

Box 1. The Government's Stabilization Program, articulated in the SMP, contained six broad themes.

- 1. Subsidy reform:** The reform of fossil fuel subsidies, which account for 79 percent of total subsidies, was at the center of fiscal consolidation efforts and would allow for a refocus of spending on health, wage adjustment, and social protection. The government began to implement this program by gradually increasing the share of gasoline and diesel gas stations selling at a new commercial rate of SDG 0.28/liter and SDG 0.23/liter, respectively.
- 2. Increasing public revenue:** Prior to the outbreak of COVID-19, the government had committed itself to a program of reforms to increase public revenues through (a) improving tax administration to widen the tax base and curb tax evasion; (b) lifting exemptions from 80 percent of companies; (c) raising corporate tax rates; and (d) completing a single revenue administration. The government targeted a reduction of the deficit to 6.75 percent by 2021, and further reductions in 2022.
- 3. Exchange rate reform:** The government proposed unifying exchange rates by September 2020 and allowing markets to set exchange rates within a band that would gradually increase from +/-5 percent to +/-10 percent. At the end of March 2021, the policy called for markets to freely set exchange rates in line with the market. The Central Bank of Sudan (CBOS) would set the daily official exchange rate as the weighted average market exchange rate of the previous day. Exchange rate and structural reforms would strengthen competitiveness, narrow the current account deficit, and increase growth. The customs exchange rate would need to be repealed to remove the practice of multiple exchange rates.
- 4. Control over military and state-owned enterprises (SOEs):** The proposed program, defined in the Government's Emergency Economic Committee, would categorize SOEs and restructure governance so that all SOEs with non-military production would report to MOFEP, and that SOEs would be audited and pay taxes.
- 5. Financial sector reform:** This includes central bank independence as well as reviews of the asset quality of the major banks to pave the way to restructuring and recapitalization.
- 6. Anti-corruption reform, including the establishment of an Anti-Corruption Commission.**
- 7. SFSP:** To provide a cash transfer to families equal to USD five per person in the family, converted to SDG at market rates, for six months in order to offset the costs of the reform.

Fuel subsidized were lifted in several phases, the largest of which were in September 2020 and February 2021. The liberalization of the exchange rate also took place in February 2021. By this time, the parallel market rate had risen to SDG 375/USD, against an official rate of SDG 55/USD. This, along with the customs exchange rate reform that took place in June 2020, paved the way for a positive decision by the IMF to approve Sudan's entry into HIPC. Donors finally funded the SFSP, which was launched in February 2021.

The Extended Credit Facility (ECF)

Based on the successfully implemented SMP, Sudan qualified for HIPC, which was to be the largest HIPC program ever conducted in terms of the quantity of debt relief required.

At the 2021 decision point, the IMF Executive Board approved a 39-month USD 2.5 billion arrangement for Sudan under the ECF. The six-month reviews would become policy benchmarks for HIPC debt relief.

The policy program was largely an extension of efforts at macroeconomic stability, and the quantitative targets called for a deficit of 1.5 percent of GDP for 2022 and one percent thereafter. The heart of the ECF was fiscal consolidation through strengthened public financial management, increased revenues, and continued reforms in energy to reduce fuel and electricity subsidies. SOE reforms would start by publishing the complete list of SOEs, including the military and intelligence sector SOEs, and publishing audited accounts of the largest 10. While these are all essential and include substantial underlying reforms such as a new procurement law and budget law, the focus on economic growth was limited. This increased the political risk, given that the population had already faced deep budget contractions and subsidy and currency reforms, largely without external finance, and the SFSP was grossly underfunded.

3.2 Debt relief: HIPC and Paris Club

At the decision point, as indicated in the Debt Sustainability Analysis, Sudan's external debt stock was extremely high relative to weak performers and relative to exports. Even with the implementation of reforms under the SMP, Sudan's debt remained unsustainable without substantial debt relief. Debt would only become sustainable at the HIPC completion point and assuming effort from the MDB Initiative.

HIPC post-decision point (interim) debt relief

Under the HIPC methodology applied by the IMF, Sudan's macroeconomic indicators would determine the level of reduction (the reduction factor) required to achieve debt sustainability. In Sudan's case, the net present value of this debt, USD 30.9 billion, needed to be reduced by USD 23.3 billion in NPV terms for debt to become sustainable. This reduction factor, 75.4 percent, was the highest recorded under HIPC. The volume of debt treated was also by far the largest HIPC case.

The Paris Club treated USD 22.07 billion, of which USD 14.06 billion was canceled at the July 2021 decision point, and USD 8.01 billion was rescheduled. Two-thirds of pre-cut-off date non-ODA claims were canceled, and one-third was rescheduled over 23 years with a six-year grace period. All pre-cut-off ODA claims were rescheduled more than 40 years with a 16-year grace

period (see Annex I). Reaching bilateral agreements with Paris Club creditors was expected to be relatively straightforward, since the terms were specified in the agreed minutes from the 15 July 2021 Paris Club meeting at the decision point. Sudan committed to concluding these agreements by 15 April 2022.

The Paris Club agreement sets the benchmark for the treatment of other debt, including non-Paris Club and commercial debt. Paris Club creditors expect Sudan to agree with non-Paris Club creditors on terms comparable, or at least as favorable, to Sudan as granted by Paris Club creditors. The comparability of the terms would be assessed based on factors such as the change in nominal debt service, the net present value of restructured debt, and the tenor or duration of the restructured debt.

At the HIPC completion point, Sudan was expected to receive a full and irrevocable reduction of debt under the HIPC Initiative and MDRI. Due to the 2021 coup, the required bilateral agreements with Paris Club members were not executed, and negotiations with non-Paris Club bilateral creditors and private (London Club) creditors were not meaningfully started. As a result, Sudan's debt remains unsustainable.

3.3 Finance and FDI scenarios

At the decision point (July 2021), it was estimated that Sudan needed external financing amounting to USD six to seven billion. The first year of the three-year program was considered to be funded through a combination of IMF funding under the ECF, the IDA, and the AfDB programs, and substantial debt relief that would provide fiscal space (see Table 3). The assumption was that Sudan would continue its key reforms, including administrative reforms of the tax system, as well as fiscal consolidation.

While Sudan's basic allocation of IDA resources was USD 500 million for IDA 19, the effort to mobilize support for Sudan through all available means expanded this to over USD two billion in new grants from the IDA alone, in addition to arrears clearance. Similarly, the IMF exerted significant mobilization efforts internally and externally to raise USD 2.5 billion under the ECF, including repaying France for its bridge loan and disbursing the remainder against performance benchmarks.

Table 3. International support for Sudan prior to the October 2021 coup

Source	Status	Amount	Prospect
Bilateral grants	Suspended	USD 2.5 billion	Originally intended for SFSP and humanitarian support.
IDA	Suspended	USD 0.5+ billion	Subject to performance-based allocation, and for amounts under various windows related to Fragility, Conflict and Violence, Human Capital, or Climate Change.
		USD 2 billion	Assuming an accepted and recognized government is established and a strong pro-poor reform program, Sudan can aim for grant financing.
IMF - ECF	Suspended	USD 2.5 billion	Subject to a new formal IMF review to start a new program.
Other ODA	Suspended	USD 1-2 billion	AfDB, IsDB, Afrexim, TDB...etc.
FDI	Suspended	USD 1-4 billion	Large-scale FDI is highly sensitive to political risk, and thereby unlikely to invest at the levels envisaged during the Paris investment conference.

Sudan's prospects for international support

The October 2021 coup caused donors to halt all official support for Sudan, including the HIPC process, the ECF, and all ODA. Nearly USD 950 million that was expected within six weeks in three transactions was canceled, as well as the remaining series of grants being prepared for other projects. Overall, the coup in Sudan caused the loss of over USD two billion in IDA grants. After the coup, with UN-led efforts to reach an agreement to restart the transition, it remained possible to rescue the debt relief and financial program. If an agreement was reached allowing a legitimate government to be established that enjoyed public acceptance, stability, and recognition from other countries and international organizations, re-engagement could have been restored. However, flows would have likely been more modest.

The goodwill that existed for Sudan prior to the October 2021 coup was unlikely to be restored quickly, given the magnitude of the agreed debt relief and that many international organizations and policymakers that committed political and financial capital to support Sudan's revolution were disappointed.

IDA: Assuming that an accepted and recognized government is established, a strong pro-poor reform program is put in place, and projects are designed, Sudan could aim for grant financing in the range of USD 500-700 million per year, along with support from other sources.

IMF: The ECF expired in December 2022, as no assessments under the program took place due to the coup. Once a government is in place, Sudan must request a formal IMF mission to take stock

of the economy and negotiate a new program. Sudan must describe its program and its ability to implement it. If it is a strong, credible program, some level of trust can be regained to restart the HIPC process.

FDI: Sudan cannot expect the rapid resumption of FDI given the political risk and ongoing uncertainty. The conflict, the fragility of any political settlement, and the geopolitical interests of different actors will have created a strong perception of ongoing risk that will take time to reverse. Large-scale FDI is highly sensitive to political risk, and thereby unlikely to invest at the levels envisaged during the Paris investment conference.

Domestic revenue mobilization: Tax revenues have increased, in large part due to the increased valuation of the value-added tax (VAT) of imports due to the elimination of the customs exchange rate (also used to value VAT), but the ability of the private sector to shoulder an increasing fiscal burden will be limited, particularly given the substantial destruction of the assets of the private sector. Tax policy should focus on a longer-term goal of expanding the tax net and encouraging employment and formalization, which may require very low tax rates in the immediate post-conflict period.

3.4 Recommendations: The conflict demands a shift in focus

The conflict changed Sudan's economic trajectory, and the post-conflict macroeconomic framework needs to be adjusted accordingly. With the cost of reconstruction due to the current conflict now impossible to estimate, Sudan's needs will have gone up, perhaps to USD 10-12 billion. The conflict in Sudan has created a new economic reality in which the tremendous damage from the current conflict must now be added to the large external financing need that prevailed prior to the conflict.

Prospects for external support had already dimmed due to the coup, and FDI flows will certainly dry up. While the administrative capacity for domestic revenue mobilization and effective public financial management should remain a focus; in purely financial terms, the conflict demands a slower pathway for mobilizing public revenue. Taking into consideration the current situation, the financing and policy package should include four main aims:

- Urgent post-conflict reconstruction support.
- Revival and increase in cash transfer support.
- Moving fiscal policy and structural reforms from austerity to growth.
- Visible progress on an urgent timeline to create political support.

Reconstruction and the humanitarian catastrophe will dominate the financing discussion. It is impossible to estimate the fiscal cost of an ongoing conflict, particularly as post-conflict reconstruction costs will depend on the duration and severity of the conflict, which continues to

escalate at the time of writing. In addition to a massive loss of life and public infrastructure as well as a dramatic setback in progress against sustainable development goals, the conflict has destroyed many assets in the private sector: hospitals, telecommunication networks, banks, homes, and personal property. The IMF estimates that the economic costs of conflict can range from 10 to 25 percent of GDP.¹⁹

The cost of the Libyan civil war, which was relatively short in duration but included urban conflict, exceeded USD 10 billion, whereas the cost of the more extensive destruction caused by Russia's invasion of Ukraine has already exceeded USD 411 billion.²⁰ A brief survey of some of the experiences of recent conflicts hints at some of the potential implications of the war in Sudan:

- Bosnia-Herzegovina: By 1995, the GDP had shrunk to 20 percent of pre-war levels.
- Kosovo: Cost of the conflict estimated at over EUR 30 billion.
- Libya: GDP fell by 24 percent in 2014.
- Yemen: GDP fell by 25-35 percent in 2015.
- Syria: 2016 GDP was estimated to be less than half its 2010 pre-conflict level.²¹

Should these historical precedents apply to the case of Sudan, and the cost range from 15-25 percent of Sudan's GDP of USD 46 billion in current prices, we may preliminarily estimate a cost of USD seven to 12 billion.

A refocus on economic growth calls for key changes to ECF parameters. In the context of fiscal policy, while maintaining the direction of better public financial management, substantial changes are warranted. First, there will be a substantial need for cash transfers to support immediate needs, alongside humanitarian food and housing assistance. Higher employment-generating and productivity-enhancing investments will be needed to drive domestic private sector recovery. This may require the relaxation of non-concessional debt restrictions, specifically in the case of infrastructure investment. Secondly, given the need to rely on more on-budget resources to spur a private sector takeoff, a relaxation of the one percent budget deficit target will be needed. A more appropriate deficit target of three percent would have been warranted before the conflict. International development partners, as indicated by the recent IMF and World Bank post-conflict strategy, recognize the need for conflict-sensitive parameters for macroeconomic stability.

Infrastructure and PPPs: Investment in transportation networks, energy, and telecommunications, are needed to recover from the conflict, improve productivity, and facilitate business growth. It will be essential to combine the resources and expertise of both the public and

¹⁹ IMF Policy Paper: IMF Strategy for Fragile and Conflict-Affected States (FCS), March 2023.

²⁰ Ukraine Rapid Damage and Needs Assessment: February 2022 - February 2023 (English). Washington, DC: World Bank Group.

²¹ The Cost of Conflict. Finance and Development, December 2017, Vol. 54, No. 4.

private sectors. This would lead to more efficient infrastructure development and reduce the potential for SOEs to crowd out private sector investments. ECF conditions prevent Sudan from assuming government-guaranteed debt on non-concessional terms. This policy will need to be recalibrated within limits.

The frequent delays and poor infrastructure availability of Port Sudan, including high demurrage charges and increasing insurance costs due to its unreliability, constituted a de facto tax on the economy and a significant drag on productivity. A high priority will be to ensure that it is open, well-organized, functional, and efficient. With the upcoming surge in construction material imports to support rebuilding, the port and road network will be essential. Given the significant time it will take to expand the national electrical grid, the focus should be on on-grid and off-grid renewable energy, including utility-scale, or village-scale, as well as satellite-based communication.

Human capital: This focus must include a significant – perhaps tripling – investment in human capital. Sudan spends 1.2 percent of its GDP on health. This is lower than both the regional average (2.4 percent) and the average for its income group (2.1 percent). According to the World Bank Human Capital Index (2020), a child born in Sudan today will be 38 percent as productive when she grows up as she could be if she enjoyed complete education and full health. Sudan spends 2.2 percent of its GDP on education. This is lower than both the regional average (four percent) and the average for its income group (3.6 percent). Sudan’s investment in human capital should triple to **exceed regional averages**. A program to rebuild primary school and health access, implemented with community-level and Resistance Committee support, would provide visibility and ownership.

SOEs: The question is less about the share of the economy they now control; it is about the share of the future economy they will control, and whether they prevent the emergence of an effective state and economy. SOEs dominate key supply chains and therefore prevent the growth of the private sector and formal tax base. The policy position should focus on making markets contestable by ensuring the competitive neutrality of the government, including SOEs. As many countries, including Ethiopia, have now done, following the lead of Singapore’s Temasek and Malaysia’s Khazanah, SOEs should be governed by a national holding company whose governance consists entirely of independent directors who meet the highest standards of effective corporate governance. SOEs should have clear performance targets and management held accountable for achieving those targets, including their financial contribution to the state through tax revenues, as well as any public service obligations.

The various military pension schemes that SOEs reportedly contribute to should be put on a budget and not serve as an excuse to create new SOEs. Roles for ex-officers in the boards and management of SOEs are acceptable, so long as they meet fit-and-proper tests for good corporate governance.

Financial sector: In addition to the scale of capital required for Sudan’s recovery, productivity also comes from how the resources in an economy are allocated. With the same level of resources, an economy that allocates those resources more efficiently will achieve higher productivity than an economy that allocates those resources poorly, especially in the presence of major shifts. To increase allocative efficiency, Sudan needs a capable, well-governed, and well-capitalized financial sector. A clear plan was in place to strengthen the governance and financial resilience of the banking sector, building on asset quality reviews, and scheduled to be reviewed by the Council of Ministers in October 2021 (the same week the coup took place). Given the widespread destruction and looting that the CBOS and commercial banks experienced during the current conflict, a recovery plan will need to be revived and new timetables established.

Digital economy and entrepreneurship: A new economic strategy will need to accelerate the move to digital finance, including non-bank financial intermediation. At around 20 percent of the population, the banking sector’s reach is insufficient to support formalization and growth. Digital technology supports output growth due to reduced transaction costs, a widening of the tax base, and an improved monetary policy transmission mechanism. Since the 2018 revolution, hundreds of young Sudanese have entered incubators and started firms. From around 500 in 2018, entry into 249Startups reached 2,500 in 2021 and around 5,000 in 2022. Given the opportunities created by structural reform (for example, in renewable energy following subsidy removal) and the gaps created by state-led or badly governed efforts in areas ranging from agriculture to education, innovators have great room for opportunity. They will need to be supported through a new startup law and appropriate legal and regulatory framework for venture capital.

Credibility and capacity: Finally, Sudan cannot afford a lack of consensus, or political processes that undermine the confidence and credibility of Sudan’s economic program. These proved extremely costly politically. Stabilization efforts would have been more effective and less costly to the economy and to ordinary people had they been implemented quickly and credibly. Sudan cannot afford such delays in the future. Any reform program will depend on a surge of public sector capacity, given the years of deterioration of the civil service. The transitional government’s reform efforts were significantly impacted by capacity gaps. Efforts should begin as soon as security conditions allow, to train a new, young generation of leaders to assume roles in public service at the federal and local levels. This may be complemented by international expertise, hired with a mandate to transmit capacity to this new generation of leaders.

2. Growth and investment transitions

The two previous sections discuss the imperatives of the de facto sudden stop that impacted the Sudanese economy following the secession of South Sudan and the consequent loss of most of the oil revenues; make the case for deep economic reforms; and review the key elements of the country’s rehabilitation and re-engagement reform program. In this context, we argue that post-conflict reconstruction and humanitarian aid are required alongside stabilization and debt relief.

This is necessitated by the recent setback in the Sudanese political transition process following the 25 October 2021 coup and the more recent and ongoing violence that pitted the two branches of the army in high-intensity warfare. Building upon the preceding analysis, this section argues for the case of launching growth in the immediate short to medium runs as a key requirement for successful macro stabilization.

The recent ERF-FDL Commission on Stabilization and Growth report (2022)²² issues three fundamental growth-oriented messages. First, the Middle East and North Africa (MENA) needs to undertake deep economic adjustment. However, austerity alone in the highly socially mobilized societies of the region, with its falling growth and rising poverty, is an exercise in futility. It could only stabilize debt in the very short term and at a very high risk of social tensions. Second, much of the “political” capital invested in adjusting to high indebtedness should go toward improving growth prospects. Therefore, even as countries undertake major public expenditure cuts, they must re-orient more public funds to safety nets and pro-growth spending. Third, igniting growth in the short to medium runs requires a robust pro-growth macroeconomic framework as well as structural transformation, which must be effected at sufficient scale and depth in order to achieve a shift in expectation. Fourth, successful growth-oriented economic reforms are “eminently political exercises that need to mobilize the political elites to work. The latter need to believe that the risks ahead are catastrophic, but that a better future is possible, and to convey these messages to the citizens with brutal honesty.”

Economists have recently started to distinguish between the requirements for *igniting* and *sustaining* growth. It has been argued that these two aspects of growth appear to be driven by two different processes. Launching the economy into a growth path for a few years, as challenging as it is, may only require identifying and addressing the most serious constraints facing the private sector or capital accumulation. Sustaining growth, however, can be a much more complex process that requires not only capable economic management capacity but also, very importantly, robust political institutions for promoting grand bargains among social groups, as part of a national development strategy or a social contract.²³ In this context, the assessment of the recent development experiences of a diverse set of countries suggest that a society’s choice of inefficient policies and institutions is more a reflection of the interests of the elites holding on to power rather than due to differences in ideology or regime type (Dercon, 2022). Nonetheless, kleptocratic policies are more likely in socially divided societies, with weak institutions and elites having access to substantial resource rents or foreign aid.²⁴

²² The Commission was set up in May 2022 by the Economic Research Forum (ERF) and the Finance for Development Lab (FDL). The report provides a regional perspective on the adjustment and growth agenda for MENA and motivates an in-depth set of case studies, covering six heavily indebted, energy-importing countries, including Egypt, Jordan, Lebanon, Morocco, Sudan, and Tunisia.

²³ See, for example, Rodrik (2005, 1999) and Elbadawi (2004).

²⁴ See, for example, Acemoglu (2002) and Acemoglu, Robinson, and Verdier (2004).

For the remainder of this section, we first review the recent growth performance of Sudan during the last 30 years of the Ingaz regime, contrasting it with the case of Ethiopia under the rule of EPRDF and highlighting the underlying political economy considerations behind the stark growth trajectories of the two countries. Next, we undertake a growth accounting exercise centered around three equations from a version of the World Bank's LTGM.²⁵ The first states an extended Solow-type growth equation, accounting for the key growth drivers; the second states the formula for the investment/GDP ratio required for achieving the assumed growth path; while the third contains the sources for financing such an investment transition. Subject to informed assumptions, we calibrate this simple model for Sudan to assess the cost to the economy should the current military warfare deteriorate into a large-scale, long-duration ethnic civil war. Instead, should the current war be confined to the military institutions and eventually end in 2023, robust economic reforms could produce a peaceful renaissance growth scenario.

4.1 The political economy of growth: A tale of two countries

The similarities and contrasts between Ethiopia and Sudan were very aptly characterized by Sarkar and de Waal (2022): “These two large multi-ethnic developing countries share a common border, the Blue Nile, and a host of political and economic challenges from separatism to chronic food insecurity, and both faced scenarios of imminent state failure at the cusp of the 1990s. For a generation thereafter, the respective governments in Addis Ababa and Khartoum pursued radically divergent political and economic policies, each guided by its endowment and history, but also by leadership decisions. In the policymakers’ caricature, Ethiopia became a model for an African developmental state while Sudan reproduced a pathological rentierism that foretold intractable crisis” (p. 1).

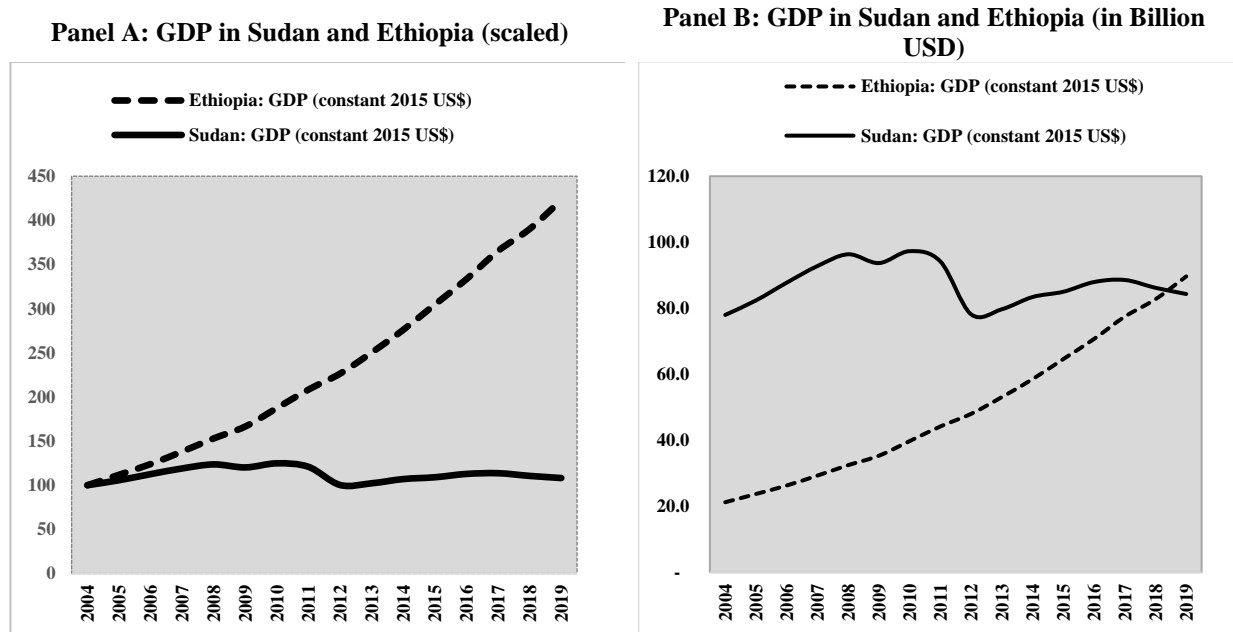
Our analysis reveals extremely divergent growth experiences and sheds light on the very different cast of elites who governed the two countries. While the Sudanese economy stagnated for 15 years, the Ethiopian economy more than quadrupled. In less than one generation, the Ethiopian economy bridged the gap of more than USD 60 billion that separated it from the Sudanese economy in 2004 (Figure 9). In the same vein, while the per capita income of the Sudanese remained stagnant for 15 years, Ethiopia’s income per person increased by nearly three times, which allowed the abjectly poorer Ethiopia to reduce the income gap from nearly a fifth of the Sudanese per capita income in 2004 to half in 2019 (Figure 10).

²⁵ This link contains all the information needed about the LTGM and its applications: <https://www.worldbank.org/en/research/brief/LTGM>

Ethiopia achieved half a miracle, as its average annual growth rate of per capita income reached around seven percent for a period of 15 years.²⁶ On the other hand, growth in Sudan was modest and unstable, and an economic collapse occurred after the secession of the south.

Despite their comparable investment ratios, it is clear that Sudan’s investment was very inefficient and likely driven by the kleptocratic political marketplace that pervades resource allocation under the Ingaz regime (Figure 11). Furthermore, while Ethiopia witnessed a steady improvement in state effectiveness, reaching the level of a middle-income country like Egypt, the fragility of the Sudanese state continued to deteriorate, where the state effectiveness index reached nearly the lowest level (-2.5) since 2014. However, both countries suffer from instability of governments,²⁷ especially in recent years (Figure 12).

Figure 9. A tale of two countries: Ethiopia and Sudan’s divergent growth path



Source: The World Bank, World Development Indicators.

Note: In panel A, the GDP for both countries was converted to an index using 2004 as a base year; we divided the GDP for both countries during (2004-19) by the GDP in 2004 and multiplied by 100. Therefore, in 2004, both GDPs equal 100 in 2004 for both countries. In panel B, constant GDP in USD for both countries is used.

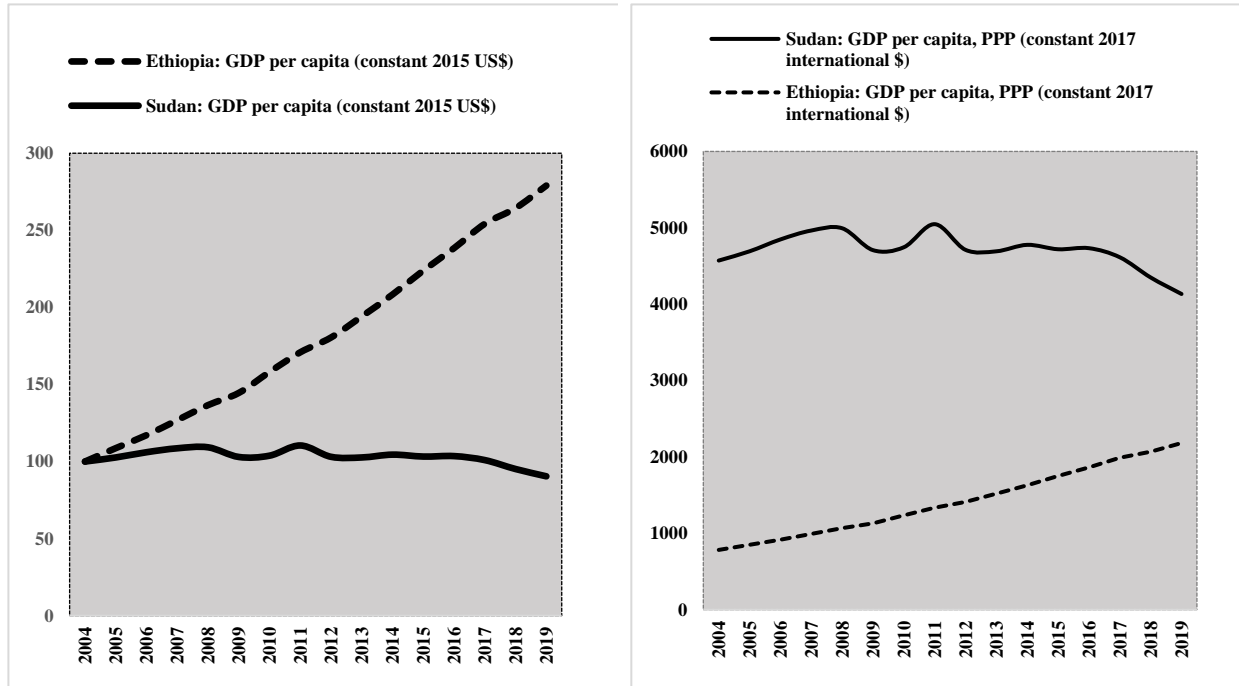
As a first approximation, most scholarship communities coalesce around the view that states emerge as a result of agreement by the elites to share the rent available under the existing power, no matter how small it is. However, in a few cases, ruling elites would “gamble” on development and, therefore, would be willing to sacrifice available rent for future growth and development. This

²⁶ The Growth Commission Report identifies growth miracle developing countries as those that achieved or exceeded a threshold of seven percent annual average growth for 25 years.

²⁷ The government stability index includes popular support, government cohesion, and strength of legislation.

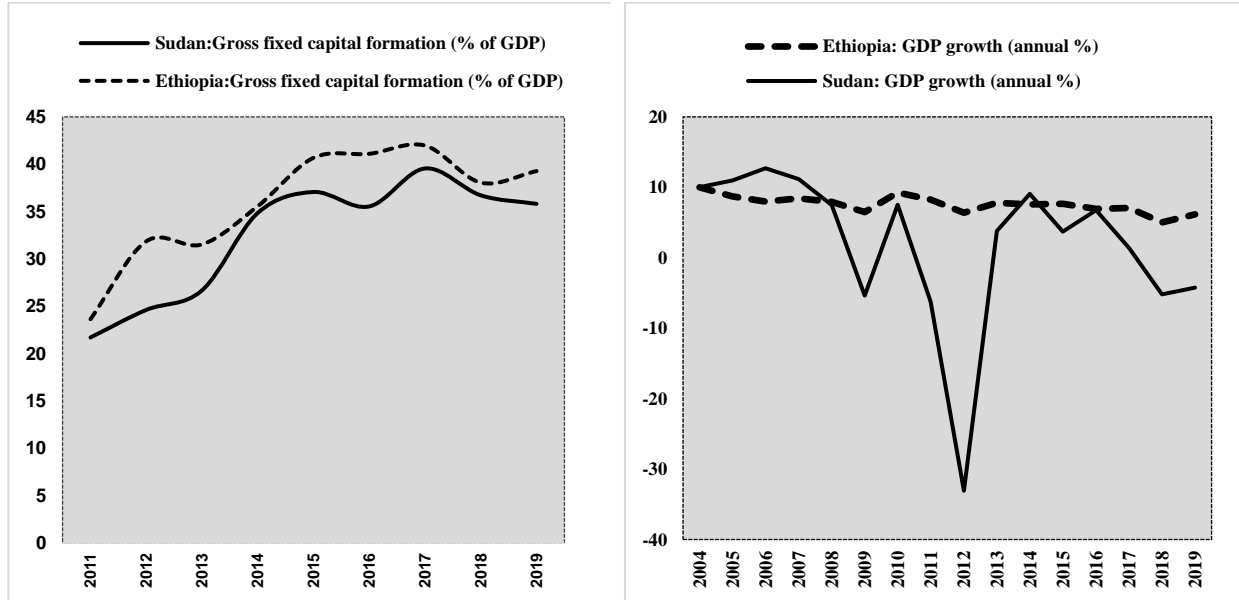
is a gamble because there is no recipe for success, just general principles, such as investing in physical and human capital, institutions...etc. Hence, if success is not guaranteed, why would some elites take the risk?

Figure 10. A tale of two countries: Ethiopia closing on a stagnating Sudanese income per capita



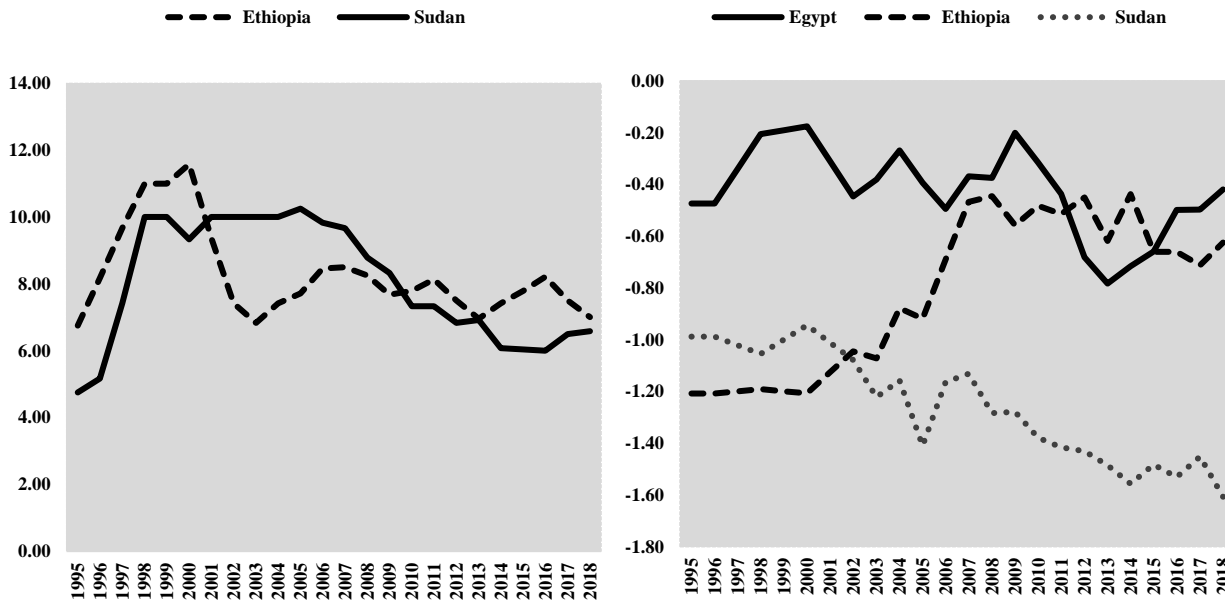
Source: The World Bank, World Development Indicators.
 Note: The same approach as in Figure 8 is adopted here.

Figure 11. A tale of two countries: Growth and investment effectiveness



Source: The World Bank, World Development Indicators.

Figure 12. A tale of two countries: Governance and government stability



Ruling elites might choose to gamble on development should they reckon that there is an imminent risk for the incumbent regime due to economic stagnation, such as the case of the Chinese Communist Party (CCP) elites during the era of the “Cultural Revolution.” Under Chairman Deng Xiaoping, who assumed power shortly after the death of Supreme Leader Mao Zedong in 1976, the CCP leadership radically restructured the party’s ideology and public policy and transformed China into a phenomenal growth miracle. In other cases, such as countries coming out of devastating civil wars, choosing to bet on development depends on the ability of elites to learn from mistakes and engage in course correction. The Ethiopian ruling elites under Meles Zenawi decided to undertake a major economic transformation in 2004 after a decade of adopting an extreme Albanian brand of Marxism.

In view of their apparent economic success, the Ethiopian elites decided to build “economic legitimacy” as a basis for regime survival in power. On the other hand, the elites of Ingaz, at their own peril, relied on oil- and gold-financed kleptocracy to hold on to power, as discussed in section 2. The lessons from the experiences of the Ethiopian EPRDF and Sudanese Ingaz regimes suggest that developmental authoritarianism has a better chance of survival than outright kleptocracy. However, equally important are the lessons from the failure of the former to maintain peace in the highly socially fractionalized Ethiopia, with the recent civil war and ongoing political instability threatening to undo two decades of spectacular economic achievements.

The equally socially divided Sudan, still reeling from 30 years of dysfunctional kleptocracy and severe political instability, and, more recently, a devastating factional conflict within its army,

needs a genuine democratic transition. However, even that, though valuable in its own right, is not enough. The emerging democratic elected elites must choose to “gamble on development” and seek “economic legitimacy” and not be content with electoral “political legitimacy.”

4.2 Growth and investment transitions: Growth accounting in a long-term growth model

Countries need to achieve high growth rates due to the importance of economic growth in the development process, but this requires designing growth strategies and defining the necessary conditions and assumptions. The targeted growth rate requires some assumptions related to the size of the required investments and that of investment efficiency. In order to determine the required growth rate over a specific timeframe, the investment profile required to achieve the targeted growth, and how to finance such an investment, we find that the LTGM developed by the World Bank is a useful tool (a brief description of the model and associated assumptions are contained in the Annex).

We calibrate the World Bank's LTGM for Sudan to analyze three distinct scenarios: two catastrophic scenarios associated with a long-duration civil war – one “pessimistic” with only limited post-conflict economic reforms, and another that is “optimistic” with robust reforms in the aftermath of the conflict. The third is a peaceful renaissance scenario. To establish a baseline, we consider a 20 percent decline in GDP for the year 2023 (referencing Caselli et al., 2017) and a corresponding 10 percent decrease in the capital stock due to the prevailing conflict. Building upon this initial setting, we proceed to examine the outcomes within each scenario.²⁸

The conflictive catastrophic scenarios

The catastrophic scenario we are examining entails a potential transition into a civil war, projected to occur between 2024 and 2037.²⁹ The notion behind this scenario is deeply concerning, as it could result in severe devastation due to the high intensity and destructive nature of this warfare, with essentially two “de facto” independent armies fighting each other in the capital and other major cities across this vast country. If such an extended civil war never comes to pass, it would render the country exceptionally vulnerable, posing an existential threat to the unified Sudanese state. Even if such a scenario is averted, our analysis demonstrates that the ramifications of a civil war would be catastrophic for the Sudanese economy. This would consequently destroy the aspiration of millions of the December Revolution's generations of youth and those that follow, plunging them into abject poverty and ignorance, at a time when the world and neighboring nations are preparing for the challenges and eagerly embracing the opportunities presented by the digital revolution and artificial intelligence.

²⁸ This subsection draws heavily from a companion (forthcoming) paper by Elbadawi and Fiuratti (2023).

²⁹ Previous episodes of Sudanese civil wars ranged between 15 to 20 years (Elbadawi and Alhelo, 2022).

In the catastrophic scenarios, we make certain assumptions regarding the period until 2037. These include a low investment rate of eight percent of GDP, no increase in labor force participation, negative total factor productivity (TFP) growth ranging from -4.5 percent to -1 percent, and reduced Human Capital (HC) growth compared to what would be expected in the absence of war (utilizing the LTGM-HC extension). Subsequently, we consider a “catastrophic-pessimistic” recovery scenario with limited post-conflict economic reforms, where investment and TFP growth revert to historical averages by 2050. Additionally, for HC, we assume that years of schooling for cohorts aged zero to four by the end of the war return to the levels observed in 2020. Instead, in the robust, post-conflict reforms “catastrophic-optimistic” recovery scenario, we anticipate higher values for investment, TFP growth, HC growth, and labor force participation, drawing upon the experiences of other countries (for a more comprehensive summary of the assumptions made for each scenario, see Appendix Table 4.1).

Under the two catastrophic scenarios, it is evident that the GDP exhibits different post-conflict growth patterns (Figure 13.A). In the catastrophic-pessimistic scenario, the GDP experiences a decline of -2 percent in 2024, gradually reaching zero percent growth by 2037 and eventually expanding to 4.5 percent by 2050. Consequently, it takes until 2051 for the GDP to return to its 2022 pre-war level (Figure 13.B). Conversely, in the catastrophic-optimistic scenario, GDP shows more favorable growth, starting at -2 percent in 2024, progressively increasing to zero percent by 2037, and then rising further to 8.7 percent by 2050. As a result, the pre-war GDP level is restored by 2046. It’s worth noting that if we compare these scenarios with the GDP growth rate of four percent per year starting from 2022, achieving convergence only occurs by 2079 in the optimistic scenario.

In terms of GDP per capita (GDPPC), the projections indicate a similar pattern (Figure 14.A). In the catastrophic-pessimistic scenario, the GDPPC experiences a decline of -4.7 percent in 2024, gradually improving to -1.9 percent by 2037, and eventually reaching a growth rate of 2.7 percent by 2050. In the catastrophic-optimistic scenario, the GDPPC starts at -4.7 percent in 2024, progresses to -1.9 percent by 2037, and then accelerates to a growth rate of 6.9 percent by 2050. Consequently, achieving convergence with the GDPPC level of 2022 is not realized until 2050 due to the positive population growth that reduces GDPPC growth (Figure 14.B). If we extend our simulation, the pessimistic scenario takes until 2075 to reach the GDPPC level of 2022, whereas the optimistic scenario achieves it by 2056. It is important to note that when comparing these scenarios to the GDPPC level that would be attained with a consistent four percent GDP growth year by year since 2022, convergence is only achieved by 2079 in the optimistic scenario.

Figure 13.A. GDP growth under the catastrophic scenarios

GDP growth %

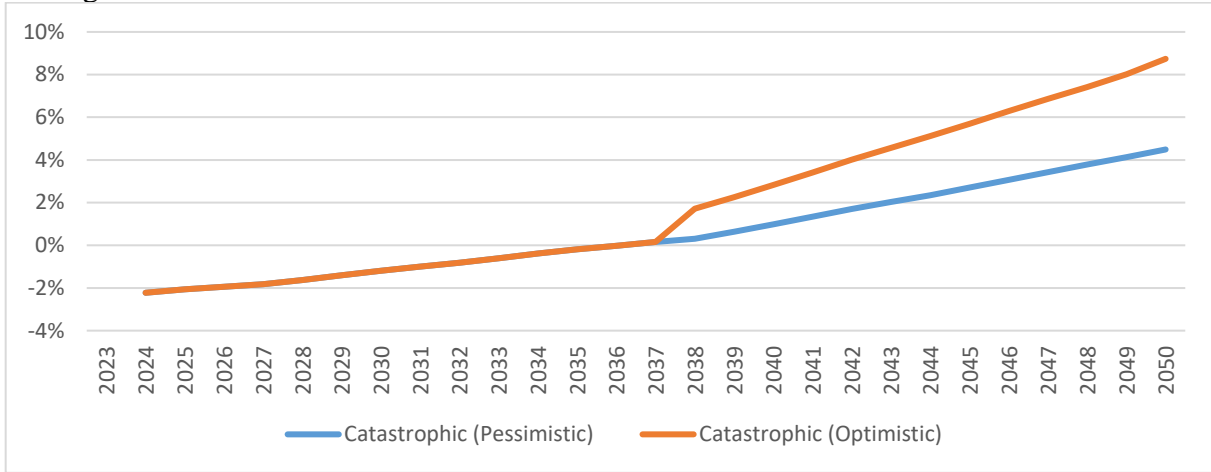


Figure 13.B. GDP under the catastrophic scenarios

GDP (Million 2021 USD)

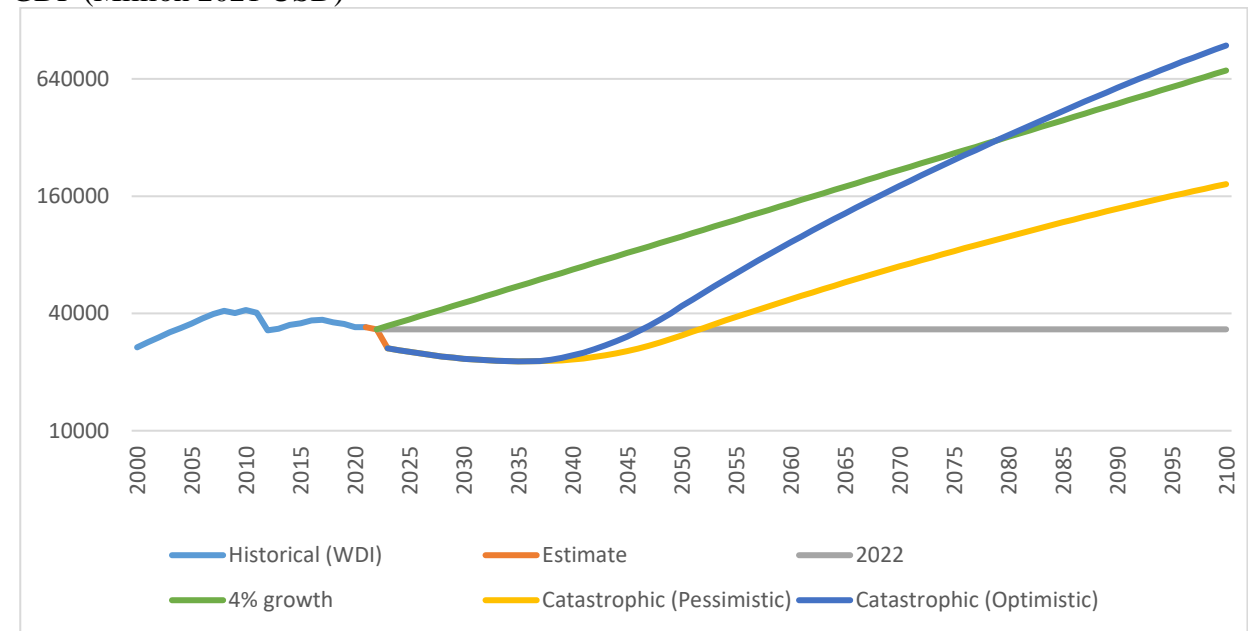


Figure 14.A. GDP per capita growth under the catastrophic scenarios
GDP PC growth (%)

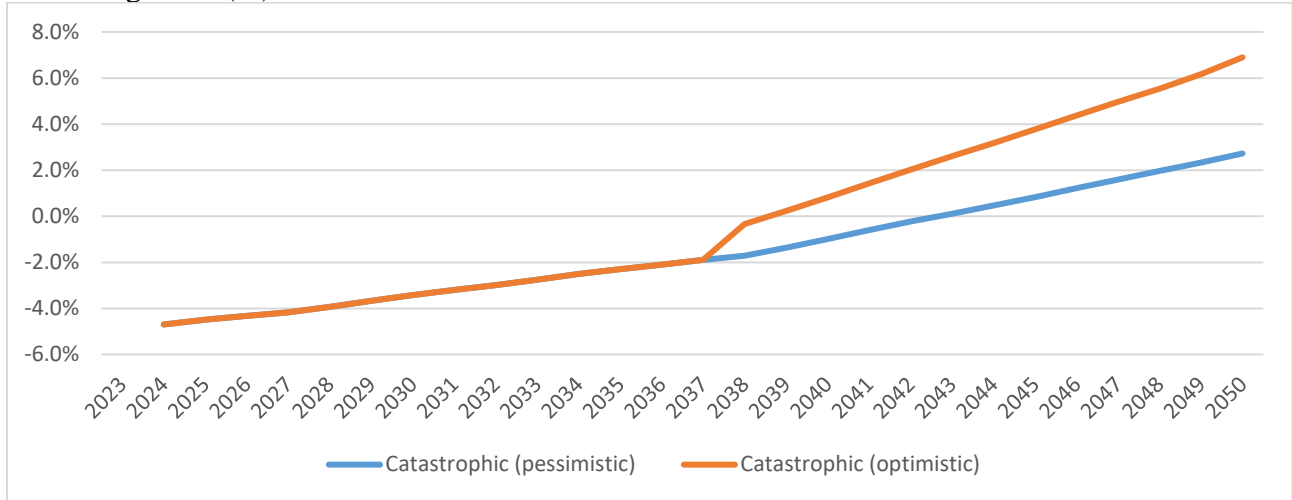
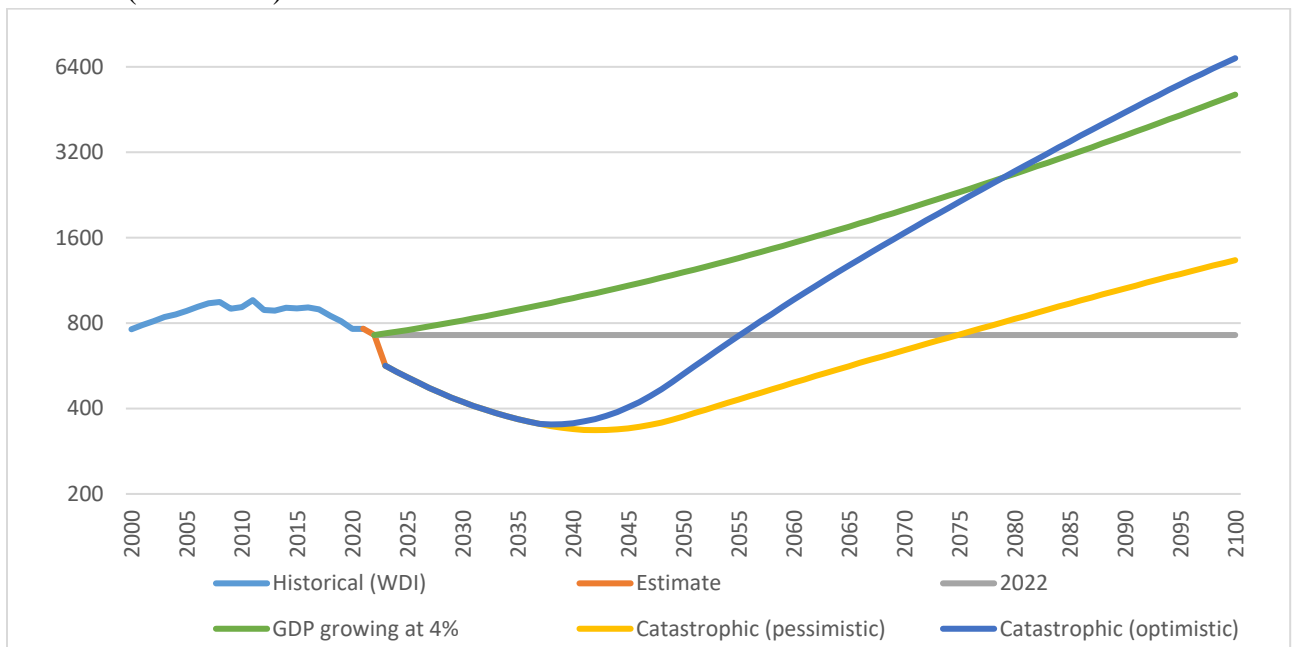


Figure 14.B. GDP per capita under the catastrophic scenarios
GDP PC (2021 USD)



A pivotal question to ask at this juncture is how costly a long-duration civil war might be for Sudan relative to a modest counterfactual peaceful growth scenario. A very conservative assessment would be to assume a stagnant economy at the 2022 GDP level, with zero annual growth. Another still conservative scenario would be to assume an annual growth of four percent during the post-2023 period. Under the first approach and assuming a comprehensive economic reform after the war (as in our catastrophic-optimistic scenario), the cost of the war amounts to USD 195 billion, which is nearly six times the size of the GDP in 2022. Conversely, with limited economic reform after the war (as in our catastrophic-pessimistic scenario), the cost rises to 236 billion USD,

approximately seven times the size of the GDP in 2022. However, if we consider the loss compared to the GDP level that would have been reached with four percent growth, the estimates become even more alarming. In our optimistic scenario, the cost of the war amounts to 2.2 trillion USD (or more than 66 times the country’s GDP in 2022), while in the pessimistic scenario, the cost exceeds 4.5 trillion USD (or more than 136 times the GDP in 2022, bearing in mind that convergence is not achieved until 2100, which is where our LTGM simulation concludes).

Table 4. The simulated cost of a long-duration Sudanese civil war

Catastrophic scenarios	Compared to 2022 level	Compared to GDP growing at four percent from 2022
Comprehensive economic reform after the war (optimistic scenario)	195B Convergence achieved by 2047.	2.2T Convergence achieved by 2079.
Limited economic reform after the war (pessimistic scenario)	236B Convergence achieved by 2051.	More than 4.5T Convergence is not achieved even until 2100.

The peaceful renaissance scenario

The peaceful renaissance scenario envisions the war coming to an end in 2023, as part of a robust political settlement, leading to a transformative civil-democratic transition. This scenario is grounded in fundamental changes, such as amicably and effectively ending the militarization of Sudanese politics and economics and building unified, apolitical, and professional armed forces. It involves implementing security reforms in line with international standards that are typically recommended for countries emerging from civil wars. These reforms would be overseen by a transitional civil authority. Furthermore, a national conference for peace would be convened, bringing together all civil and military stakeholders to foster reconciliation and unity. The scenario also entails putting an end to the devastating Sudan Syndrome³⁰ and embarking on a comprehensive social, political, and economic renaissance, guided by a social contract inspired by the “iconic” principles of the “glorious” December Revolution: Freedom, Peace, and Justice. The imperatives of a peaceful, democratic renaissance require that the envisaged social contract account for both economic as well as political legitimacy. The ruling elites of the future should, therefore, be held accountable for achieving development and prosperity, not just majorities in the electoral competition.

Having laid out the underlying political and institutional context for a peaceful, democratic renaissance, we now specify the specific growth-oriented assumptions for delivering the desired outcome. By 2030, we anticipate investment reaching the average level seen in Ethiopia between

³⁰ The “Sudan Syndrome” phenomena is discussed in Elbadawi and Alhelo (2022) and refers to the post-independence political and economic development history of fragile, short-lived democracies; military coups, leading to long-reigning autocracies; massive popular uprisings; weakening and eventually deposing the authoritarian regimes and paving the way for free elections; and yet another fragile democracy ripe for a new coup, and so on.

2004 and 2019. Additionally, we expect TFP growth to align with the 90th percentile TFP growth observed in countries classified as low income (LI) by the World Bank. From 2043 onwards, TFP growth is projected to increase further, eventually surpassing its initial trajectory by an additional percentage point by 2050. Furthermore, we envision significant improvements in male and female Labor Force Participation (LFP), with both reaching the 75th percentile of their 2019 values for LI countries. Additionally, HC reforms are introduced to stimulate HC growth, yielding a considerable boost (detailed in the table summarizing these assumptions).

Subject to the above assumptions under this scenario, the GDP is projected to experience robust growth, increasing from 5.6 percent in 2024 to approximately 10 percent by 2030 (Figure 15.A). It is expected to maintain this level of growth until 2050. Concurrently, GDPPC is forecasted to rise from 2.9 percent to seven percent by 2030, reaching 8.6 percent by 2050 (Figure 16.A). These optimistic growth rates indicate a rapid recovery ((Figures 15.B, 16.B). By 2029, the GDP is estimated to surpass its 2011 level, followed by GDPPC in 2033. This swift recovery is, indeed, of “miracle” proportions. By 2050, the GDP is projected to be more than seven times higher than its 2011 value, while the GDPPC is expected to be around 3.5 times higher. These figures highlight substantial economic progress and growth over the years.

Finally, we also need to consider another pivotal question pertaining to the required level of investment for Sudan to achieve the assumed “miracle” growth record at 9.8 percent, akin to that of Ethiopia, but for the much longer period of 2024-50. Using equation 2 and taking into account the proposed reforms in TFP, human capital, and labor force participation, we derive the required investment ratios in Figure 17 below.

As depicted in the graph, the initial investment required to achieve a growth rate of 9.8 percent is notably high, surpassing 45 percent in 2024. However, the investment needed gradually declines to around 40 percent between 2030 and 2043. Subsequently, with the acceleration of TFP and the consequent increase in the marginal product of capital (MPK) due to the implemented reforms (Figure 18), the required investment begins to decrease. By 2050, the investment needed reaches approximately 33.5 percent. This trend is primarily driven by the significant increase in MPK until 2030 when most of the reforms are assumed to take place. Furthermore, another increase in TFP growth is anticipated from 2043, contributing to the decline in the required investment.

Figure 15.A. GDP growth under the peaceful renaissance scenario
 GDP growth (%)

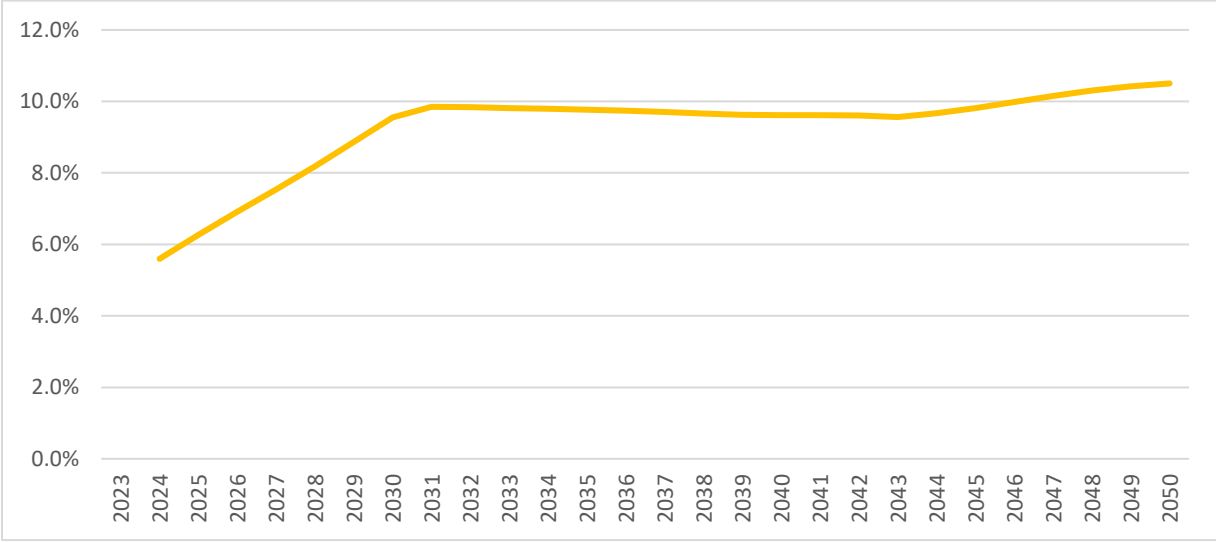
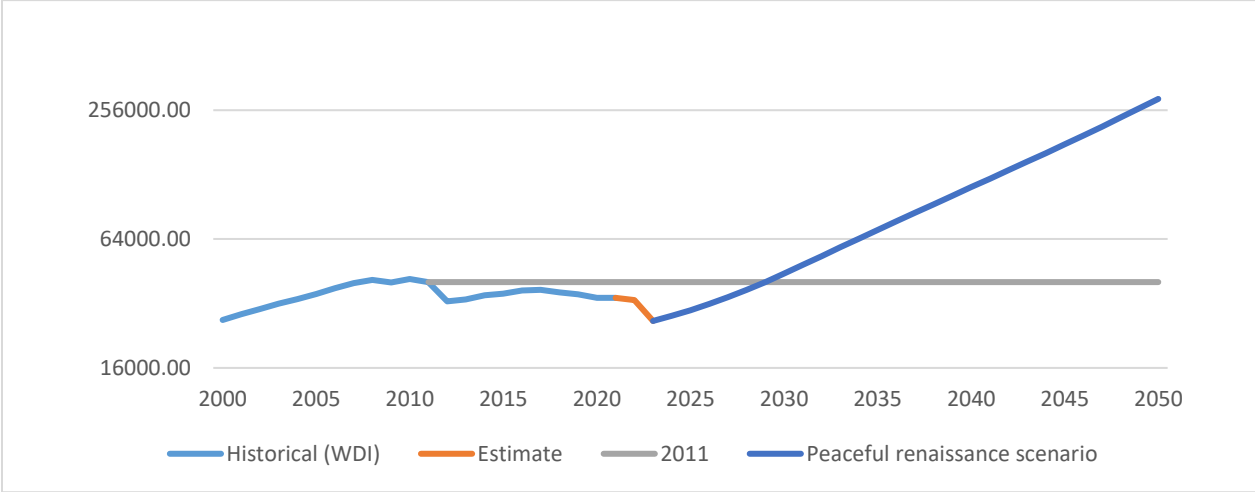


Figure 15.B. GDP under the peaceful renaissance scenario
 (Million 2021 USD)



In fixed 2021 USD, the simulated investment ratios come to about USD 186 billion for the first 10 years of the growth profile (2024-33). As equation 3 makes clear, financing such a hefty level of investment requires large national savings, enabled by robust fiscal and other economic reforms; substantial debt relief, but also new preferably concessional borrowing for financing the much-needed social programs in education, health and social protection. However, as we will argue in the following section, FDI will likely be the main source of finance, attracted by the growth prospects of the huge agricultural potential of Sudanese agriculture.

Figure 16.A. GDP per capita growth under the peaceful renaissance scenario

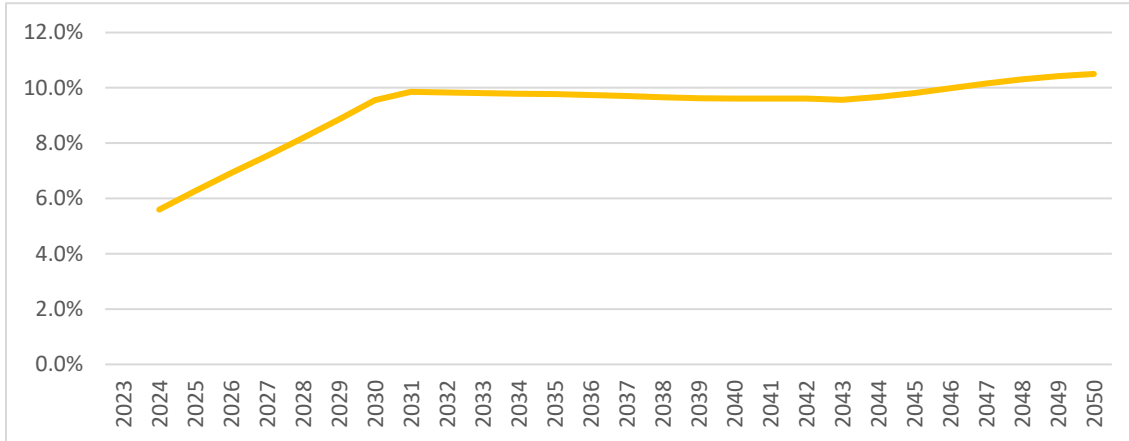


Figure 16.B. GDP per capita under the peaceful renaissance scenario

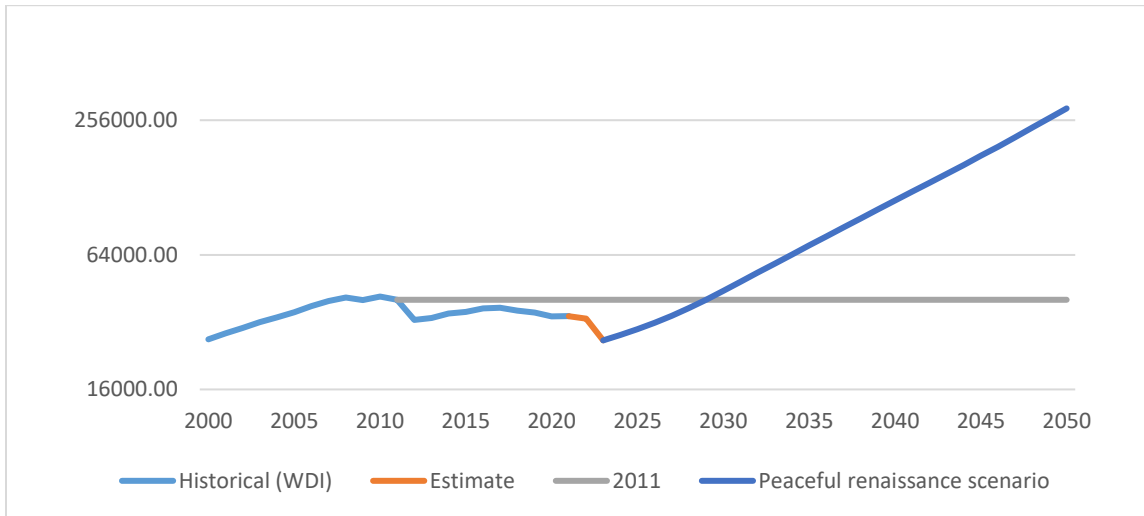


Figure 17. Required investment for Sudan to grow at a “miracle” rate

Investment (% of GDP)

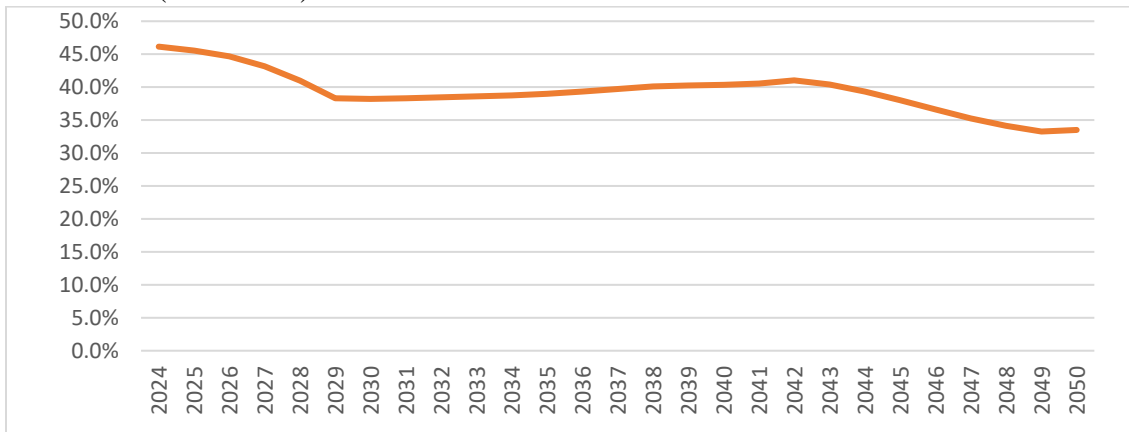
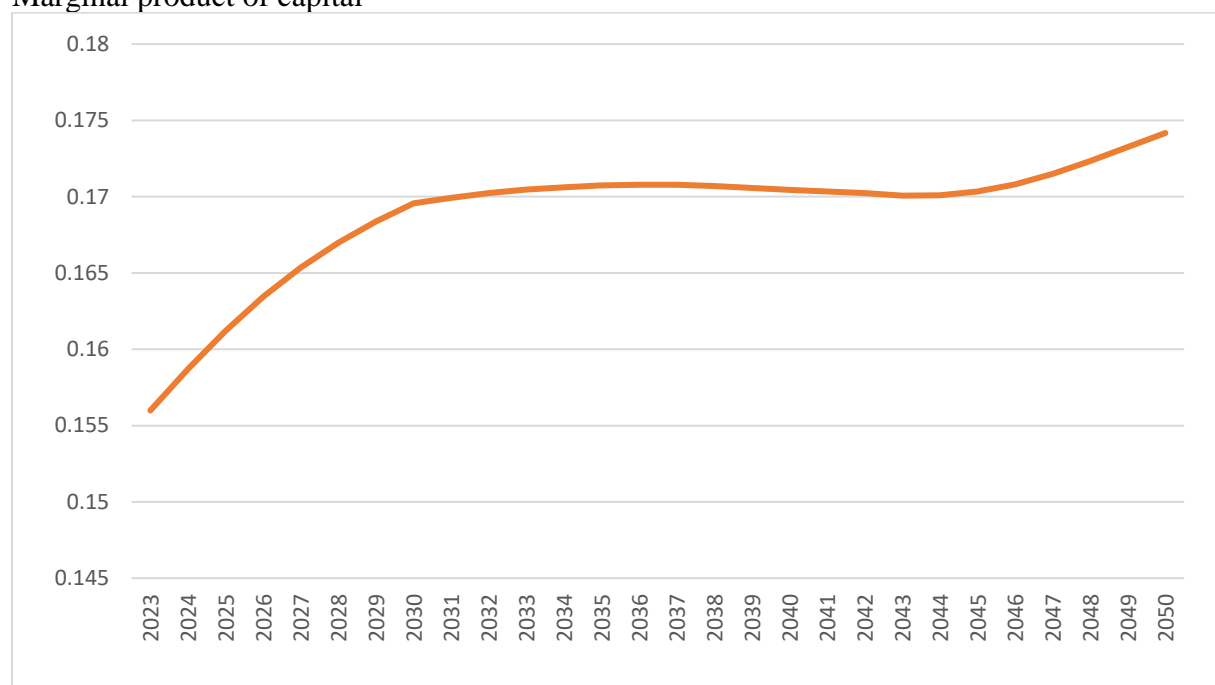


Figure 18. Marginal product of capital under the peaceful renaissance scenario

Marginal product of capital



3. Agricultural transformation: Development corridors and productive cities

Agriculture is the backbone of Sudan’s economy, contributing more than 35 percent of the country’s GDP and 47 percent of its employment, with 69 percent of the own-account businesses operating in the sector. In view of its huge agricultural potential, Sudan is considered a future breadbasket for the Arab world and Africa. The country is endowed with more than 80 million feddans of arable land, only around 60 percent of which are currently being cultivated. The richness of the sector’s resource base is manifested in its three crop and animal production systems: the irrigated, mechanized rainfed, and traditional rainfed farming systems. They produce a diversified portfolio of animals, and annual and perennial crops that have been considered promising products for agroindustry development. The most important agro-industrial subsectors are sugar, vegetable oil, meat, dairy, fishing, spinning, weaving, knitted garments, gum arabic, and fruit and vegetable processing.

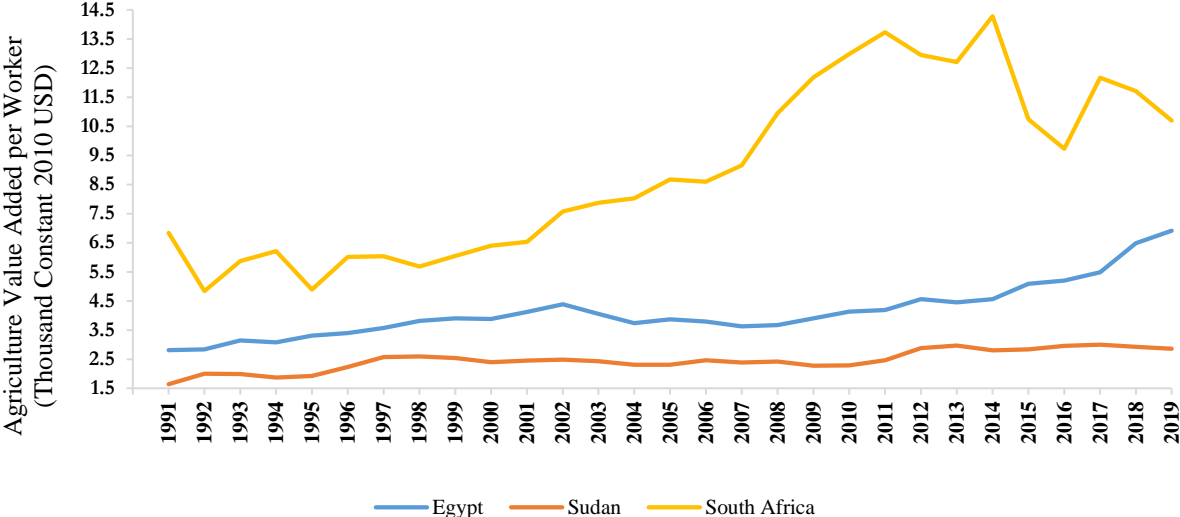
However, despite its importance to the economy and tremendous future potential, the Sudanese agro-industrial sector remains backward; it is beset with low productivity, weak linkages to modern agro-industry, and most of the farming community continues to languish in poverty and poor access to basic services.³¹ For example, agricultural labor productivity in South Africa and Egypt were, respectively, more than 3.7 and 2.4 times that of Sudan in 2019 (Figure 19). In the

³¹ See a recent ERF policy report (Elbadawi et al., 2022), which provides a detailed SWOT analysis of the Sudanese agricultural sector and proposes a comprehensive agricultural strategy.

same vein, while the average return to a feddan of cultivated crop agriculture ranges between USD 600 to 700, it was an appalling USD 20 for Sudan (Mahgoub, 2023). This is not surprising in view of the acute undercapitalization of the sector, as can be seen in the low levels of fertilizer use. For example, though Sudan’s arable land area is more than six times that of Egypt, its total fertilizer consumption in 2010 was no more than 15 percent of Egypt’s consumption. While Egypt’s fertilizer consumption was around 0.47 tonnes per hectare of arable land, Sudan only consumed 0.01 tonnes per hectare (Elbadawi and Ismail, 2021).

Therefore, for Sudan to achieve the miracle growth depicted under the peaceful renaissance scenario, we propose an agro-industrialization strategy that will add value for agricultural products, maximize the return from agriculture, provide employment opportunities, embrace modernization, and link Sudan’s agriculture and industry to regional and global markets. Implementing this strategy requires substantial investment to upgrade the infrastructure layer to support large-scale agro-industrialization.

Figure 19. Agricultural labor productivity in Sudan, Egypt, and South Africa



Source: Adapted from Figure 5.B of Elbadawi and Ismail (2021).

5.1 Agricultural growth corridors and investment transitions

An ERF policy report on Sudanese agriculture by Elbadawi et al. (2022) proposes an agricultural development model for Sudan anchored on strengthening its linkages with industry through using agro-industrial growth corridors. An economic corridor is defined as a conceptual and programmatic model for structuring physical and socioeconomic responses to develop an area building upon a linear agglomeration of economic activities and people along the physical

backbone of transport infrastructure (Healey, 2004).³² Agro-industrial growth corridors, therefore, are economic zones that combine agricultural policies with agro-industrialization, agribusiness, and infrastructure investments. Since they are usually planned and managed as strategic private-public partnerships, they promise to bring together expertise, funding, and coordination that are usually dispersed and aim to benefit from multiple synergies that arise (Brüntrup, 2019). This large-scale approach has several advantages, including attracting the participation of many investors because the risks are pooled; the concentration of agribusiness allows economies of scale and lowers the cost per unit of production; the diffusion of technology takes place more easily; the creation of various supportive markets form to serve the area; and the utilization of development potential of all areas and the benefit of economic growth is shared by the population across the different regions of a country.

Elbadawi et al. (2022) propose 14 agro-industrial corridors, accounting for the overall richness and diversity of the Sudanese agricultural resource base and the strengths and opportunities of each area, bearing in mind the necessity of stimulating growth, poverty reduction, and food security in the different regions of the country. For the features and supportive interventions of each corridor, see Annex 5.1.

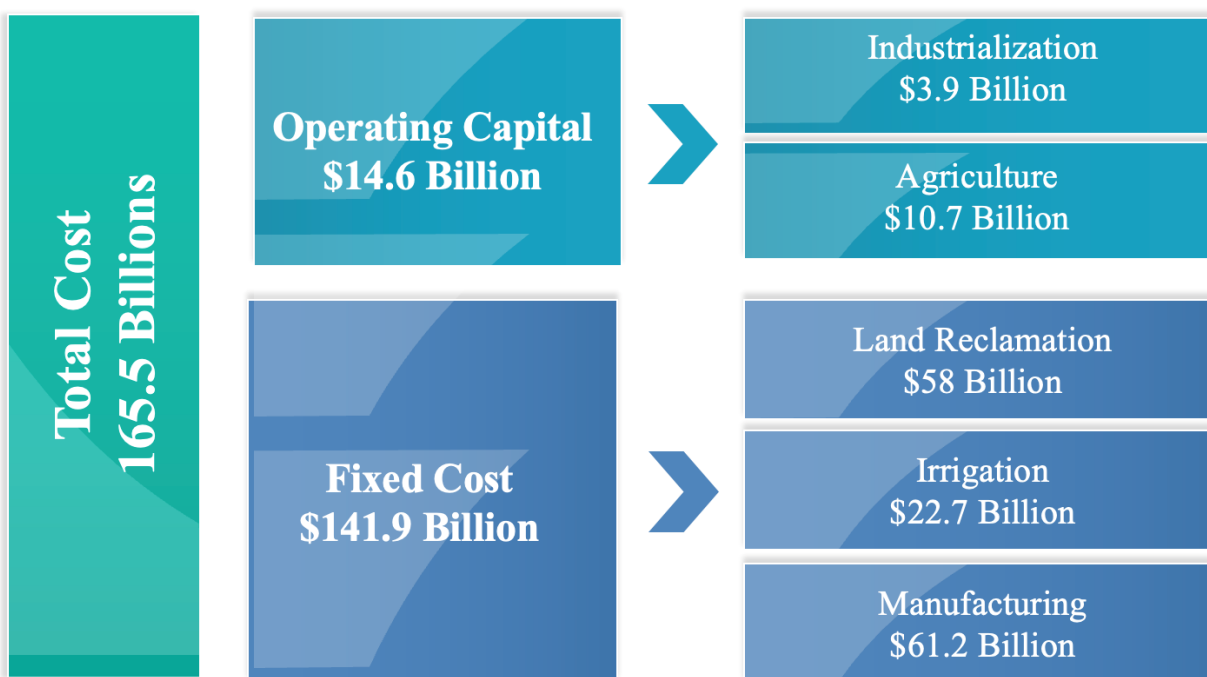
From the perspective of this paper's LTGM growth model, under the peaceful renaissance scenario, the proposed agro-industrial corridors would absorb most of the required investment. As stipulated in Figure 16 below, USD 160 billion out of USD 186 billion FDI required to support the assumed 9.8 percent "miracle" annual rate of growth for the first decade (2024-33), could be accounted for by FDI inflows for financing the modernization and structural transformation of the Sudanese agriculture, as part of a renewed interest on investing in Sudan as a breadbasket for the Arab world and Africa (Mahgoub, 2022).

Moreover, given the critical role of infrastructure as a main catalyst for development and economic growth, transforming Sudanese agriculture as premised in the above strategy would also require further economy-wide investments in transport; renewable and non-renewable energy, and information and communication technology. Sudan's infrastructure is in massive need of new implementations, the rehabilitation of decaying installations, and preventive maintenance to support the proposed vision of vibrant and integrated growth corridors, especially in the energy and transport sectors. Improved telecommunication coverage and the introduction of advanced IT technologies will propel efficiency and productivity. For example, the transitional government's Ministry of Transportation presented an infrastructure investment plan totaling almost USD 30 billion to donors and investors at the Paris Conference in 2021, covering rehabilitation,

³² This model also resembles the concept of "making agriculture look like industry" discussed by Diwan et al. (2013).

maintenance, and new projects in seaports, river navigation, railways, highways, and air transport.³³

Figure 20. Financial requirements to cover the basic food commodities deficit in the Arab world



Source: Mahgoub (2023), translated from Arabic.

Notes: Cost of total investment (with enhanced productivity) is USD 156.5 billion. Cost of total investment (with current productivity) is USD 321.2 billion.

4. Conclusions

Since becoming an independent state, Sudan has endured three long periods of civil wars. However, in the context of its high-intensity violence – the warfare between two forces within the military establishment in the capital and other major cities – the current ongoing conflict will likely put the country in an unprecedented catastrophic trajectory, especially if it spirals into a long-duration ethnic civil war of 15 to 20 years, akin to the previous civil wars that accounted for most of the country’s some 70 post-independence years. Unfortunately, in view of the high fractionalization of the Sudanese society, this devastating development is a distinct possibility, unless the international and regional communities manage to implement a robust, coordinated plan for forcing the two protagonists to accept a permanent peace process, eventually leading to a viable security reform and credible transition to civilian democratic rule.

This violent discord within the military is a culmination of an acrimonious political transition over the last four years that followed a massive popular uprising in December 2018 against the long-

³³ Elbadawi et al. (2022) contains a detailed discussion.

reigning kleptocratic Ingaz regime of General Omer al-Bashir. Under the watch of this regime, the country experienced a major economic decline, following the independence of South Sudan in 2011, due to the loss of more than three-quarters of its oil revenue. The economy tumbled by almost 50 percent to become an archetype of sudden stops. The export capacity diminished, imports contracted, and foreign reserves expended, thereby leading to severe economic depression and unstable growth.

We argue that the same entrenched economic interests that explain the failure of the Ingaz kleptocracy to prepare for the massive economic and political shock waves associated with the partitioning of the country can help explain why the military leaders of both factions reneged on their commitment to the constitutional transition to civilian democratic rule, even at the risk of squandering the economic gains and the popular political legitimacy associated with the revolution. Therefore, the October 2021 coup that essentially set the stage for the current national tragedy could be understood as a lingering legacy of the Ingaz kleptocracy.

The transitional government that assumed power after the collapse of the Ingaz regime inherited an economy in deep crisis, with extremely distorted macroeconomic conditions. The first order of business, therefore, was to deal with the daunting agenda of fixing the macroeconomy and developing a comprehensive reform program, including underpinning engagement with the international development community through the IMF's SMP. The negotiation of the SMP in June 2020 and its subsequent signing paved the way for starting the process of the country's rehabilitation into the international development community and for the HIPC debt relief.

We reviewed the main components of the engagement program, which remains critical for financing future economic reforms, though possibly with lower available financing. Moreover, the current conflict creates a new economic reality, in which the tremendous damage from the current conflict must now be added to the large external financing need that prevailed prior to the conflict. In view of the limited prospects for key forms of external support and possibly a slower pathway for mobilizing public revenue under the current situation, the financing and policy package should target three main priorities: urgent post-conflict reconstruction support; moving fiscal policy and structural reforms from austerity to growth; and visible progress on an urgent timeline to create political support.

In response to the reality of the country being in conflict, we deploy the World Bank's LTGM to assess the potential cost of the current military warfare should it spiral into a long-term ethnic civil war. We calibrate the model for Sudan to analyze three scenarios, including two conflictive "catastrophic" scenarios, associated with a long-duration civil war – one "pessimistic" with only limited post-conflict economic reforms, and another "optimistic" with robust reforms in the aftermath of the conflict. The third is a "peaceful renaissance scenario." This scenario is premised on containing this war within the military institution and eventually ending it in 2023 through a

robust political settlement, leading to a resumption of the constitutional path to civilian democratic rule.

We first estimate the cost of the war relative to the counterfactual of a stagnant economy at the 2022 level of GDP. In the “catastrophic-optimistic” scenario, the cost comes to USD 195 billion, which is approximately six times the size of the GDP in 2022. This figure spikes to USD 236 billion in the “catastrophic-pessimistic” scenario, approximately seven times the size of the GDP in 2022. The cost of the war becomes even more menacing, under a highly plausible counterfactual four percent annual growth rate rather than a stagnant economy. In this case, the cost of the war amounts to USD 2.2 trillion (or more than 66 times the GDP in 2022), while in the pessimistic scenario, the cost exceeds USD 4.5 trillion (or more than 136 times the GDP in 2022). The moral of this story is that, even under the assumption of fast post-conflict growth, allowing the current military warfare to spiral into a 15-year ethnic civil war will be extremely costly for the country, causing the current generation of youth and the one that follows to languish in poverty, instability, and post-conflict relapses, and it could very well constitute an existential threat for the country. Moreover, such an economic collapse in a vast country with such a strategic location could also create far-reaching geopolitical risks for the entire region.

The “peaceful renaissance” scenario is grounded in fundamental changes, such as amicably and effectively ending the militarization of Sudanese politics and economics and building unified, apolitical, and professional armed forces. The imperatives of a peaceful, democratic renaissance require a viable social contract, accounting for both economic as well as political legitimacy. The ruling elites of the future should, therefore, be held accountable for achieving development and prosperity, not just be content with securing majorities in the electoral competition.

Under optimistic but plausible assumptions pertaining to the key growth drivers in the LTGM model, the GDP under the “peaceful renaissance” scenario will rise from 5.6 percent in 2024 to approximately 10 percent by 2030 and sustain this growth level until 2050. Synchronously, GDPPC is forecasted to rise from 2.9 percent to seven percent by 2030, reaching 8.6 percent by 2050. By 2029, the GDP is estimated to surpass its 2011 level, followed by GDPPC in 2033. This swift recovery is, indeed, of “miracle” proportions. By 2050, the GDP is projected to be more than seven times higher than its 2011 value, while GDP per capita is expected to be around 3.5 times higher. These figures highlight substantial economic progress and growth over the years.

To achieve this level of growth, our simulation estimates that around USD 186 billion (in fixed 2021 USD) are required for the first 10 years of the growth profile (2024-33). We anticipate that USD 160 out of the required USD 186 billion in the next decade could be accounted for by FDI inflows for financing modernization and structural transformation of Sudanese agriculture by strengthening its linkages with agroindustry using agro-industrial growth corridors, as part of a renewed interest in investing in Sudan as a breadbasket for the Arab world and Africa.

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Annex I

Timeline: Sudan's 40-year economic re-engagement process

- **July 1984:** IMF suspends lending operations due to the accumulation of loan repayment arrears.
- **December 2019:** Initial reform proposal in 2020 budget outlining structural reforms to rescue the economy rejected by the FFC under the influence of the Central Economic Committee.
- **April 2020:** COVID-19 causes a large loss of human life, a severe decline in GDP, and the loss of around 40 percent of fiscal revenue. March economic conference postponed.
- **April 2020:** COVID-19 emergency economic program and revised budget introduced.
- **June 2020:** The Sudan Partnership Conference in Berlin, co-hosted with Germany, the EU, and the UN and attended by 40 organizations. Partners pledge USD 1.8 billion for humanitarian and development support, USD 393 million of which is for the SFSP.
- **July 2020:** Sudan's economic reform agenda is presented to the IMF in July 2020 as a proposed SMP.
- **August-September 2020:** Sudan experiences the worst flooding in 100 years.
- **23 September 2020:** SMP letter of intent endorsed by the Council of Ministers, overcoming concerns from CBOS on exchange rate reform.
- **28 September 2020:** SMP endorsed by the IMF Board as meeting the Upper Credit Tranche (UCT) standard. As per HIPC eligibility requirements, Sudan would need to demonstrate a six-month track record of satisfactory reform progress under SMP before being deemed eligible for HIPC.
- **3 October 2020:** Government signs peace agreement aimed at resolving the long-standing conflicts that precluded national unity.
- **December 2020:** Sudan removed from the list of State Sponsors of Terrorism. This removes an important barrier in the path toward Sudan's re-engagement with the international community by allowing the US to formally support Sudan's reentry, including the HIPC decision point.
- **January 2021:** Sudan reconciles its public debt with multilateral creditors, and the reconciliation of bilateral creditors is advanced. The debt reconciliation was based on Sudan's external public and publicly guaranteed debt outstanding as of 31 December 2020.
- **21 February 2021:** Exchange rate liberalization launched, and the currency stabilizes at SDG 375/USD.
- **24 February 2021:** SFSP officially launched, with commitments of USD 820 million in donor financing and IDA Pre-Arrears Clearance Grants. The program would mitigate the cost of reform to families by providing USD five per person for six months.
- **March 2021:** IMF Board, based on the review of progress toward SMP benchmarks, affirms that Sudan is eligible for HIPC, which equals to debt relief and fulfilling requirements for the decision point by June 2021.

- **April 2021:** Sudan's Poverty Reduction Strategy Paper finalized and approved by the Council of Ministers, thereby completing an additional HIPC benchmark.
- **25 March 2021:** Sudan clears its USD 1.09 billion in arrears to IDA with bridge financing from the US. The IDA also provided a USD 1.365 billion policy grant at that time, in response to structural reforms, including the exchange rate. USD 1.09 billion used to repay the US Treasury Bridge Loan.
- **April 2021:** IDA program resumes, and Sudan agrees on a program of USD two billion in IDA financing through the end of FY23. The government begins to design nine IDA projects, starting with USD 100 million for COVID-19 vaccines, a USD 500 million budget support operation, and a USD 300 million electricity sector program to be approved by December 2021.
- **12 May 2021:** Sudan clears arrears to the AfDB under the Transition Support Facility (TSF). The UK provides a bridge loan to the AfDB Group of USD 413 million, while Sweden provides USD 4.2 million to support Sudan's burden sharing.
- **May 2021:** President Macron of France hosts a high-level Sudan Conference, marking Sudan's re-engagement with the international financial and business communities. The conference provides a platform for donors to express support, including the clearance of Sudan's arrears to the IMF.
- **28 June 2021:** Sudan's arrears to the IMF, 1.4 billion, are cleared at the decision point through a bridge loan from France, allowing the IMF to approve the 39-month ECF.
- **28 June 2021:** IMF ECF approved. The ECF repays the French bridge loan, with the remainder disbursed on successful performance against ECF benchmarks. The first review was to take place in February 2022 based on performance through December 2021.
- **14 July 2021:** Customs exchange rate abolished, and tariffs adjusted, thereby achieving the final benchmark under the SMP.
- **15 July 2021:** Sudan reaches a historic agreement with its Paris Club creditors, which represents the largest effort made by Paris Club members in terms of interim debt relief in history.
- **25 October 2021:** The Coup: SAF, RSF, and allied parties dissolve the government and arrested Prime Minister Hamdok. World Bank management triggers Operational Policy 7.30, which governs how the World Bank deals with de facto governments, thereby ending support.
- **May 2022:** Deadline for Sudan to agree with bilateral partners on Paris Club terms passes.
- **5 December 2022:** More than 40 parties, movements, and professional groups sign a framework to restore the transition to democracy at the Republican Palace.
- **29 December 2022:** ECF expires, having had no successful reviews of performance and no effective government to request an extension.
- **15 April 2023:** Conflict breaks out between SAF and RSF during the final stages of the framework agreement calling for the integration of security forces.
- **December 2024:** HIPC completion point deadline.

Appendix

This section provides a brief description of the model and its projections for Sudan given specific conditions and underlying assumptions.

The model is designed to help researchers and decision-makers answer three questions regarding economic growth: What is the required growth given the size of certain investments (sub-model 1)? What are the investments required to achieve a certain growth (sub-model 2)? What is the growth from given savings (sub-model 3)?

$$g_{y,t+1} \approx g_{A,t+1} + \beta(g_{h,t+1} + g_{\omega,t+1} + g_{N,t+1} + g_{\rho,t+1}) + \left[\frac{1-\beta}{K_t/Y_t} \right] \frac{I_t}{Y_t} - (1-\beta)\delta \quad \dots\dots (1)$$

Where: g_y is GDP growth, g_A is Total Factor Productivity (TFP), g_h is Human Capital, g_w is Demographics, g_p is Participation, Y_t Investment, K_t/Y_t is MPK = 1\micOR

$$\frac{I_t}{Y_t} = \frac{K_t}{Y_t} \left[\frac{\{1 + \bar{g}_{y,t+1}^{pc}\}^{\frac{1}{1-\beta}} (1 + g_{N,t+1})}{(1 + g_{A,t+1})^{\frac{1}{1-\beta}} [1 + g_{h,t+1}]^{\frac{\beta}{1-\beta}} [1 + g_{\omega,t+1}]^{\frac{\beta}{1-\beta}} [1 + g_{\rho,t+1}]^{\frac{\beta}{1-\beta}}} - (1 - \delta) \right] \quad \dots (2)$$

$$\frac{I_t}{Y_t} = \frac{S_t}{Y_t} + \frac{FDI_t}{Y_t} + \left[\frac{D_t}{Y_t} - \frac{D_{t-1}/Y_{t-1}}{(1 + g_{y,t}^{pc})(1 + g_{N,t})} \right] \quad \dots\dots\dots (3)$$

Appendix Table 4.1. Assumptions across the three scenarios

		Catastrophic- pessimistic	Catastrophic- optimistic	Peaceful renaissance
Total population growth	Assumption	2.1 percent (2023-50 average)		
	Based on	UN projection 2022 medium variant		
WATP growth	Assumption	0.4 percent (2023-50 average)		
	Based on	UN projection 2022 medium variant		
Labor share	Assumption	63.5 percent		
	Based on	2019 value (PWT 10)		
Depreciation rate	Assumption	4.3 percent		
	Based on	2019 value (PWT 10)		
Initial K/Y	Assumption	2.34		
	Based on	Starting with 2019 k/y from pwt 10, we use PIM with CBS GDP growth and investment rates until 2021 (and using WEO forecast for 2022 growth rate and 2021 investment for 2022 investment) and then we assume a 20 percent fall on GDP and a 10 percent fall in capital stock in 2023.		
Initial investment	Assumption	Eight percent during 2023-37.		19 percent.
	Based on	Average 2014-19 Investment in Syria (WDI).		Average 2017-21 Investment in Sudan (CBS).
Final investment	Assumption	19 percent by 2050.	30 percent by 2050.	30 percent by 2030.
	Based on	Average 2017-21 Investment in Sudan (CBS).	Based on average 2004-19 Investment in Ethiopia (WEO).	Based on average 2004-19 Investment in Ethiopia (WEO).
Initial TFP growth	Assumption	-4.5 percent in 2023 to -1 percent by 2037.		Zero percent.
	Based on	-4.5 is the minimum TFP growth in Syria during 2015-19 and -1 percent is the average TFP growth during 2015-19 (also generates no growth by 2037).		Recovering from the war begins.
Final TFP growth	Assumption	1.5 percent by 2050.	2.5 percent by 2050.	2.5 percent by 2030 until 2043 and 3.5 percent by 2050.
	Based on	2010-19 average PWT.	LI 90 th percentile 2000-19 average.	2.5 percent is LI 90 th percentile 2000-19 average.

Appendix Table 4.1. Assumptions across the three scenarios (contd.)

		Catastrophic-pessimistic	Catastrophic-optimistic	Peaceful renaissance
Initial MLFP	Assumption	69 percent.		
	Based on	2019 value (WDI).		
Final MLFP	Assumption	69 percent.	75 percent (number reached in 13 years if growing to 82 percent in 26 years).	82 percent.
	Based on	No reforms, stays the same.	82 percent is LI 75 th percentile 2019 value (WDI).	LI 75 th percentile 2019 value (WDI).
Initial FLFP	Assumption	31 percent.		
	Based on	2019 value (WDI).		
Final FLFP	Assumption	31 percent.	51.5 percent (number that gets in 13 years if growing to 74 percent in 26 years).	74 percent.
	Based on	No reforms, stays the same.	74 percent is LI 75 th percentile 2019 value (WDI).	LI 75 th percentile 2019 value (WDI).
	Assumption	0.2 percent (2023-50 average).	0.2 percent (2023-50 average).	1.3 percent (2023-50 average).
HC growth (we use the LTGM Human Capital extension)	Based on	We assume a fall in years of schooling from seven (HCI data for schooling population) to four years (based on average years of schooling for the working cohorts, data Barro-Lee) to cohorts that are 0-4 in 2020 with linear fall for cohorts in the middle (six for 10-14 and five for 5-9) and then recovering smoothly until 2035.	Same as the pessimistic scenario, but assuming by 2035, 0-4 cohorts will start receiving 9.57 years of schooling (based on SSA 75 th , HCI) and the stunted rate will increase from 0.62 to 0.76 (based on LI 75 th percentile, HCI). The war scenarios are similar in terms of HC as it takes 20 years to start generating impact on HC growth.	We assume 0-4 cohorts start receiving 9.57 EYS and have a non-stunted rate of 0.76 (vs 0.62). Then, EYS, education quality, ASR, and non-stunted rates increase smoothly until they reach 11.87, 0.66, 0.86, and 0.83, respectively, for 0-4 cohorts by 2030.

Annex 5.1. Proposed growth corridors

Corridors	Strengths and opportunities	Prospective industries
1 Merawi- Dongla-Halfa Corridor	<ul style="list-style-type: none"> • Weather suitable for producing wheat, pulses, forages, and fruits (citrus, mango, dates). • Potential to produce different crops in two seasons (summer-winter). • Major reservoirs and rivers for fishing. • Proximity to the Egyptian market with a population of 100 million and expected to reach 180 million by 2050. • Established research, educational institutions, and banking services. • Two main airports and more than 1,000 km of paved road (from the Egyptian border to Khartoum). • Presence of several tangible surface and groundwater resources and vast land areas for agricultural investment. • Presence of historical processing facilities. 	<ul style="list-style-type: none"> • Wheat mills. • Slaughterhouses. • Fruit processing. • Animal feed industry. • Fishery industry development (mainly on Lake Nubia and Merawi dam).
2 Khartoum- Shendi- ElDammer Corridor	<ul style="list-style-type: none"> • Government headquarters and investment administration. • Closeness to the services and government authorities and institutions. • Large consuming market for vegetables, fruits, dairy, and poultry. • Available wage labor. • Established research and education institutions. • Established expanded public and private banking system. • Relatively adequate basic infrastructure in terms of roads, electricity, water, communications, and markets. • Potential for expanding the irrigated agricultural area e.g., Hawad Project with a size of more than 1.5 million hectares. • The existence of a large number of projects in food and related industries. • Khartoum International Airport. 	<ul style="list-style-type: none"> • Cereals milling. • Meat industry (beef, sheep, poultry, fish). • Dairy industry. • Vegetable oils. • Agricultural input procuring and/or manufacturing. • Processing of fruits and vegetables. • Leather industries.
3 Gezira- Managil Corridor	<ul style="list-style-type: none"> • Established large irrigation production schemes with more than 0.90 million hectares of irrigated land and relative stability in production. • High government and international community attention to invest and rehabilitate the irrigated schemes. • Presence of historical good processing activities (ginning and textile, vegetable oil, milling, leather). • Available financing from public and private banks. • Established farmers' organizations and contract farming models. • Proximity to Khartoum market. • High livestock population. • Presence of infrastructure such as roads, communication, input services, markets, and government institutions. • Presence of agricultural research headquarters, several well-established research stations, and agricultural colleges. 	<ul style="list-style-type: none"> • Textile industries. • Wheat and sorghum mills. • Vegetable oil mills. • Fruits and vegetable factories. • Feed factories. • Feedlots for livestock fattening. • Manufacturing of agricultural inputs. • Dairy industry. • Aquaculture.

Annex 5.1. Proposed growth corridors (contd.)

4 Sennar- Elsuki- Eldinder- Eldamazin Corridor	<ul style="list-style-type: none"> • Vast under-utilized agricultural lands and diverse production systems (mechanized, traditional rainfed and irrigated, livestock, horticulture, and fishing). • Large areas of banana, fruit, vegetable, cotton, sugar cane, sesame, and sorghum production. • Large and diverse livestock population. • Strategic location, rich resources, and access to all states. • Potential of new irrigation schemes in Rosaries and El Dinder. • Available different water sources and water infrastructure (dams) and a hierarchical controlled irrigation system of water distribution. • Dinder Wildlife Reserve Park. • Presence of historical processing activities (sugar, vegetable oil, and textiles). • Presence of several research stations and agricultural colleges. 	<ul style="list-style-type: none"> • Sorghum mills. • Ginning and textile factories. • Vegetable oil mills. • Fruits processing. • Animal feed industries. • Feedlots for animal fattening. • Sugar factories. • Development and promotion of tourism in Dinder Wildlife Reserve Park.
5 Gedarif- Rahad Corridor	<ul style="list-style-type: none"> • More than two million hectares of semi-mechanized farming and about 150,000 hectares under irrigation. • Largest market for sorghum and sesame crops. • Wealth of animal resources and the presence of vast rangelands (Butana). • Largest grain silo in the country. • High potential for oil crops, livestock, and horticulture crops industry (raw material). • Presence of historical processing activities (vegetable oils and ginning). • Industry represented in oils, soap, and sweets industry in the city of Gedaref. • Presence of infrastructure such as roads, communication, storage facilities, input services, markets, government institutions, and research and well-established specialized financial institutions. • Proximity to Port Sudan by paved road and neighboring several countries (market). 	<ul style="list-style-type: none"> • Sorghum milling. • Vegetable oil (sesame) industry. • Animal feed. • Ginning and textile factories. • Feedlots for livestock fattening.
6 New Halfa- Kassla Corridor	<ul style="list-style-type: none"> • More than 200,000 hectares under irrigation (Gash and Halfa irrigation project). • New Half Sugar Scheme and industry. • Fruit production in Kassala. • Contract farming experience with cotton growers. • New Upper Atbara irrigation Project is in the pipeline. • Wealth of animal resources. • Industry represented in the oils, soap, and sweets industries. • Presence of infrastructure such as roads, communication, storage facilities, input services, markets, and government institutions (research and financial). • Proximity to Port Sudan and neighboring several countries (market). 	<ul style="list-style-type: none"> • Sugar industry. • Wheat milling. • Vegetable oil processing. • Animal feed factories. • Textile industry. • Fruit processing. • Feedlots for livestock fattening.

Annex 5.1. Proposed growth corridors (contd.)

7 Kosti-Eduiem Corridor	<ul style="list-style-type: none"> • Vast agricultural lands of mechanized and traditional rainfed and irrigated. • High production diversity in crop, fishing, horticulture, and livestock production. • Around 200,000 hectares of underutilized irrigated lands. • Large livestock population. • Presence of historical good processing activities (sugar, oil, fish, milk, textile, and milling). • Established sugar factories including Kenana and Asalya factories. • Ginning factories. • Largely carried out traditional fishing and milk product industries. • Established financial institutions. • Closeness to the capital and port through railway lines and roads, connected to Khartoum and neighboring states by paved road. 	<ul style="list-style-type: none"> • Textile. • Sugar. • Feed factories. • Meat and dairy industry. • Fishing industry (taking, culturing, processing, preserving, and storing).
8 Elobeid- Rahad- Umrawaba- Bara-Sodari Corridor	<ul style="list-style-type: none"> • Strategic location (center of the country), as well as airport and road connection with several states and established major crop and livestock markets. • Important producer of sesame and hibiscus. • World's largest market for gum arabic and other gums (covers a large part of Gum Arabic Belt). • Presence of a traditional vegetable oil industry. • Main producer of the famous Kabashi sheep. • Production of fruits and vegetables, mainly at Bara. • Elobeid-Bara-Omdurman Road reduced the time and cost of transportation. • Well-established agricultural research station and university. • Financial and banking institutions are established across the state. • Presence of infrastructure such as roads communication, markets, and government institutions. 	<ul style="list-style-type: none"> • Production of vegetable oils. • Processing of gum arabic. • Slaughterhouses for livestock. • Processing of fruits and vegetables. • Processing of hibiscus. • Leather industry.
9 Dilling- Kadugli- Abassya Corridor	<ul style="list-style-type: none"> • Important area for the production of rainfed cotton. • Eight ginning factories. • Important area for fruit production, especially at Abassya and Abugebeha. • Large animal population. • High potential for oil crops, livestock, and horticulture crops. • Presence of historical agricultural research. • Kadugli airport and road connection with West and North Kordofan. • Potential for using contract farming models. 	<ul style="list-style-type: none"> • Textile industry, which is labor intensive and could contribute to poverty reduction. • Vegetable oil processing. • Fruit processing.

Annex 5.1. Proposed growth corridors (contd.)

10 Enahud-Gobiesh Corridor	<ul style="list-style-type: none"> • Main sheep-producing area for domestic and export markets. • Main production area for gum arabic covers the largest part of Gum Arabic Belt. • Main groundnut production area. • Presence of traditional vegetable oil industry. • Presence of infrastructure such as roads, communication, markets, and government institutions. 	<ul style="list-style-type: none"> • Slaughterhouses for the export of sheep meat. • Groundnut oil production. • Animal feed. • Leather industry. • Gum arabic processing.
11 Fashir-Nyala-Edien Corridor	<ul style="list-style-type: none"> • Comparative advantage in the production of livestock, oil crops, and gum arabic. • Major source of beef for the domestic and export markets. • Major producing area for groundnut and millet. • Large tracts of underutilized rainfed semi-mechanized lands. • Potential markets in neighboring countries. • Agriculture, veterinary and animal production colleges, and agricultural research stations constitute a good research system. • Roads and airports in the main cities (Nayala and Fashir). • Presence of developed groundnut processing plants. 	<ul style="list-style-type: none"> • Meat industry. • Leather industry. • Vegetable oil industry. • Honey production. • Cereal milling. • Gum arabic processing.
12 Genena-Zalengi Corridor	<ul style="list-style-type: none"> • Production of livestock, oil crops, and gum arabic. • Important source of high-quality oranges (Jebel Marra). • Good vegetation cover of various tree species. • Potential markets in neighboring countries. • Agriculture, veterinary, and animal production colleges and research stations. • Roads and airport in the main cities (Genena). • Jebel Marra represents an important tourist center (investment opportunities in tourism). • Presence of several NGOs working in livelihood issues and rural development. 	<ul style="list-style-type: none"> • Animal feed factories. • Meat industry. • Leather industry. • Vegetable oil industry. • Fruit processing industry. • Honey production. • Cereal milling. • Tourism (Jebel Marra).
13 Elfula-Babanusa-Lagawa Corridor	<ul style="list-style-type: none"> • Important area for the production of millet, groundnut, gum arabic, and roselle. • Large livestock population, especially cattle, depending mainly on natural rangelands. • Important area for field watermelon production. • Road connecting Elfula with Kadugli and El-Obeid. • Center for petroleum extraction. • Presence of agricultural college and research station. • Presence of historical processing facilities (roselle processing and dairy). • Potential for using contract farming models. • Vast underutilized agricultural lands. 	<ul style="list-style-type: none"> • Meat and dairy industry. • Leather industry. • Vegetable oil industry. • Roselle processing. • Honey production. • Cereal milling. • Gum arabic processing.

Annex 5.1. Proposed growth corridors (contd.)

14
Red Sea
Corridor

- Extends along the Red Sea coast, with more than 800 km of coastline.
 - Providing great possibilities for tourism: marine islands, coral reefs and natural reserves, diverse marine life, and mangrove forests.
 - Proximity to the country's main ports, handles the majority of the country's international trade and several neighboring countries (market).
 - Infrastructure in Port Sudan, such as road networks (railway lines and roads), storage facilities, government institutions, and financial institutions.
 - Recent political attention to rehabilitate and develop the area.
 - Investment opportunities in mining, fisheries, border trade, and tourism.
 - Delta Tokar, with a cultivated area (about 150,000 ha) featuring very fertile soil and offering significant growth opportunities in agricultural production.
 - Livestock estimate in the state is 1.7 million heads of cattle.
- Animal feed factories.
 - Textile industry.
 - Marine aquaculture industry (offshore fishing, aquaculture, and pearl oyster farming).
 - Tourism.

Map of proposed growth corridors

