

# Rebuilding the State Fiscal Federalism in Sudan

Nada O. Eissa and Hamid Eltgani Ali

# **REBUILDING THE STATE FISCAL FEDERALISM IN SUDAN<sup>1</sup>**

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## Abstract

It is fitting that the modern history of Sudan is tightly intertwined with the call for federalism, starting with the Southerners' push for regional autonomy since independence. In this paper, we examine the design and practice of one dimension of federalism – the ability of citizens to govern their fiscal affairs at the local level and how the central government designed and implemented fiscal relations with the states, focusing largely on intergovernmental transfers over the past decade. We documented the evolution of the institutional framework and fiscal trends over several decades. Severe fiscal fragility meant that transfers to states varied substantially over time and heavily oil exports facilitated higher transfers, the loss of the South sharply curtailed them. The study shows the underlying differences in standards of living across states to set the scene for understanding the distribution per-capita transfers. The results suggest that the current system in Sudan does little to offset existing inequities across states and may exacerbate them. If fiscal federalism is to support the rebuilding of the state in Sudan, it must address disparities and empower citizens to engage in determining their local public choice of taxing and spending.

**JEL Classification:** H4, h5, H6, H7

**Keywords:** Sudan, States, Public Economics, Fiscal Federalism, National Budget, fiscal distribution and redistribution

## ملخص

من المناسب أن يرتبط تاريخ السودان الحديث ارتباطًا وثيقًا بالدعوة إلى الفيدرالية ، بدءًا بدفع الجنوبيين نحو الحكم الذاتي الإقليمي منذ الاستقلال. في هذه الورقة ، ندرس تصميم وممارسة أحد أبعاد الفدرالية - قدرة المواطنين على إدارة شؤونهم المالية على المستوى المحلي وكيف تصمم الحكومة المركزية وتنفذ العلاقات المالية مع الولايات، مع التركيز إلى حد كبير على التحويلات بين الحكومية على مدار العقد الماضي. لقد وثقنا تطور الإطار المؤسسي والاتجاهات المالية على مدى عدة عقود. أدت الهشاشة المالية الشديدة إلى تفاوت التحويلات إلى الدول بشكل كبير بمرور الوقت ، كما أدت صادرات النفط الكثيفة إلى زيادة التحويلات ، وأيضًا أدت خسارة الجنوب إلى تقليصها بشكل حاد. تُظهر الدراسة الاختلافات الأساسية في مستويات المعيشة عبر الولايات لتهيئة المشهد لفهم توزيع التحويلات للفرد. تشير النتائج إلى أن النظام الحالي في السودان لا يفعل الكثير لتعويض عدم المساواة القائمة عبر الولايات وقد يؤدي إلى تفاقمها. إذا كانت الفيدرالية المالية ستدعم إعادة بناء الدولة في السودان ، فيجب عليها معالجة التفاوتات وتمكين المواطنين من المشاركة في تحديد خيارهم العام المحلي فيما يتعلق بفرض الضرائب والإنفاق.

## 1. Introduction

For the past six decades, Sudan has been locked in a cycle of conflict, military coups, and revolutions. Successive governments have exploited this continuous internal conflict to weaken institutions, superficially because of national security concerns but actually to remain in power. No government since Independence has pursued this agenda as aggressively as that of General Omar Al-Bashir. For 30 years, he oversaw the deliberate dismantling of the State and all pillars of civil society. That the People came together in a popular revolution to force General Bashir to relinquish power in 2020 is no small feat, especially considering that the Sudanese come from a variety of ethnicities and tribes and a lineage of fierce independence (Khalid, 1990).

It is fitting, in this context, that the modern history of Sudan is tightly intertwined with the call for federalism, starting with the Southerners' push for regional autonomy since the country's independence. This demand was eminently reasonable since the South did not share the language or religion of the rest of the country, but the parties failed to reach any consensus. As a result, except for a brief period between 1972 and 1983, the North and South were *continuously* engaged in wars. It was precisely the leeway the Addis Ababa agreement gave the South to govern its affairs that ended hostilities. The deal, however, facilitated its demise by allowing the President (i.e., the Center) to manipulate the relationship. And so it did, ultimately repealing it entirely. Doing so effectively closed the door to developing a sustainable governance model not only for the South and the country as a whole. In fact, it proved mortal, with the South ultimately seceding.

Although the South led the argument for a federal system, it was arguably just as relevant for different regions in the country. Cultural and governance norms and dialects varied both across and within regions. This fact begs the question: could a federal system in which state and local governments had the autonomy to govern themselves within a national structure have led to the development of a functioning state in Sudan? This question is intriguing but ultimately impossible to answer. In this paper, we examine the design and practice of one dimension of federalism – the ability of citizens to govern their fiscal affairs at the local level. Our goal is to investigate how the central government designed and implemented fiscal relations with the states, focusing mainly on intergovernmental transfers over the past decade.

We first take a long view to document the evolution of the institutional framework and fiscal trends over several decades. Severe fiscal fragility meant that transfers to states varied substantially over time. And while the revenue from oil exports facilitated higher transfers, the loss of the South sharply curtailed them. We also show the underlying differences in standards of living across states to set the scene for understanding the distribution of per-capita transfers. While some of our indicators are subject to data limitations, preliminary results suggest that the current system in Sudan does little to offset existing inequities across states and may actually exacerbate them. Finally, we presume fiscal federalism is to support the rebuilding of the state in Sudan. In that case,

it must address disparities and empower citizens to engage in determining their local public choice of taxing and spending.

This paper is organized as follows. Section 2 presents the economic and demographic profile of Sudan. Section 3 discusses conceptual issues in fiscal federalism, including taxing powers, delivery of services, and intergovernmental transfers. Sections 4 and 5 present an overview of Sudan's de-jure and de-facto fiscal relations. The latter also outlines data sources and limitations. Section 6 empirically examines the determinants of fiscal transfers and simulations, and section 7 offers concluding remarks.

## **2. The demographic and economic setting**

Modern Sudan, originally 'Bilad al Sudan,' is an amalgamation of fragmented kingdoms and tribes dating back to the emergence of the Funj and Fur sultanates starting in the 16<sup>th</sup> century. These kingdoms were the "first and foremost African, specifically Sudanese states." Each emerged from different origins, spoke different languages, and maintained different cultures. For example, the Funj were Nubians mixed with Arabs, while the Fur were of African origin. But in addition, there were multiple tribes within. Arab tribes were in the North (for example, the Shaigiya, Robatab, and Jaalyeen) and West (Rizeigat and Habbaniya), while non-Arabs were primarily in the East (Beija and Rashaida), West (Fur, Zaghawa, and Massalit) and Central (Funj and Abdallab) Sudan.<sup>4</sup> They coexisted independently, if not entirely peacefully, until the Turkish-Egyptian takeover brought them, for the first time, under one administration in 1821. It would take another 60 years for the Sudanese (Muslims) to put aside their tribal loyalties and act as one. The people rallied around the Mahdi, who exploited the grievances under the oppression of the Turks to birth a movement defined by Sudanese nationalism. But that was short-lived and illusory as the regime created a different set of fissures (Khalid, 1990). It was yet another colonizing power (the British) that would spur a stronger sense of national identity, although most people continued to identify with their tribe first. The fact that a Sudanese identity evolved only as a reaction to a common enemy has rendered it tenuous, and that, in turn, has undermined (and continues to undermine) the legitimacy of the state

The diversity of the Sudanese in terms of culture, lifestyle, livelihood, and ancestry makes the country difficult to govern, even under the best circumstances. Worse still, it also presents an opportunity for rogue politicians to divide and rule. No regime since independence has used that paradigm as efficiently and ruthlessly as the Bashir regime that governed from 1998 to 2019. During this time, Sudan broke, with the South seceding, and bent to the breaking point with the war in Darfur. In principle, the secession of the South made the country more homogenous, but in fact, it exposed different fissures. In the sense of Besley *et al.* (2018), Sudan is a fragile state. In

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<sup>4</sup> This is not a comprehensive, but rather a representative, list of the various tribes throughout the country.

addition to fractured identities, it suffers from a lack of state legitimacy and capacity, insecurity, high informality, and susceptibility to shocks.

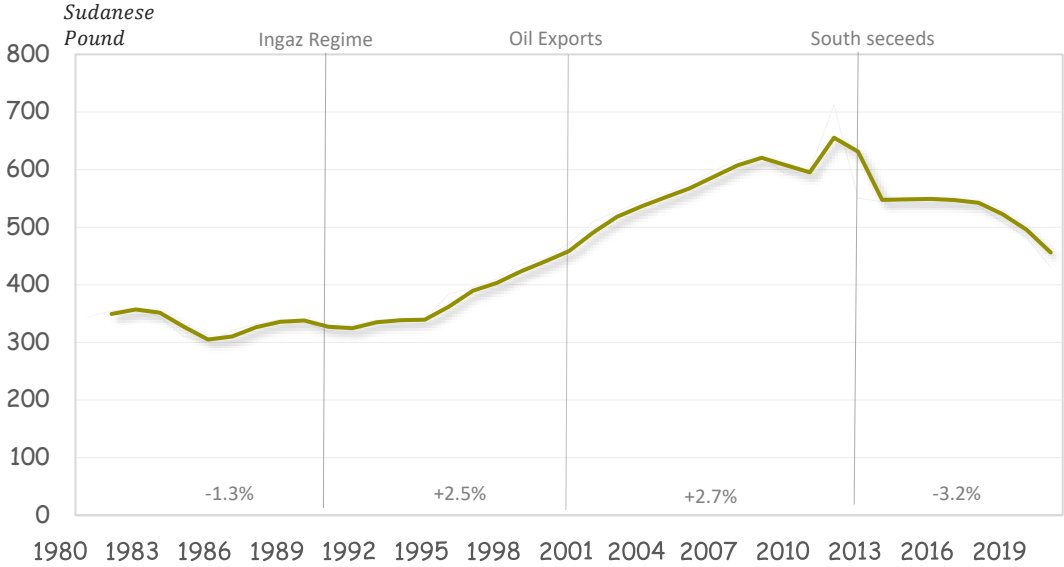
We lay out this background as context for the question of this paper. What role does fiscal federalism have on the development of the state, particularly in such a diverse setting?

**Economy**

Per-capita income in Sudan as of 2020 was \$595, only half of the average in *MENA* countries and one-quarter of that in Egypt. It is, by any definition, an economically fragile state, with the requisite anemic growth. Sudan’s per-capita income in 2020 was barely 30% higher than at the start of Bashir’s Ingaz regime.

Figure 1 presents the trend from 1980 to 2020 and identifies four periods: pre-Ingaz, Ingaz regime (1989 – 2019), oil exports, and secession of the South. The Bashir government came to power after a period of negative growth marked by the fall of one government and the democratic election of another. However, the regime enjoyed a period of moderate growth (following initial disruptions) that was sustained by oil exports. Per-capita GDP peaked at the end of this period with the secession of the South and the resulting loss of oil revenues.

**Figure 1. Real Per-Capita GDP, 1980-2020**



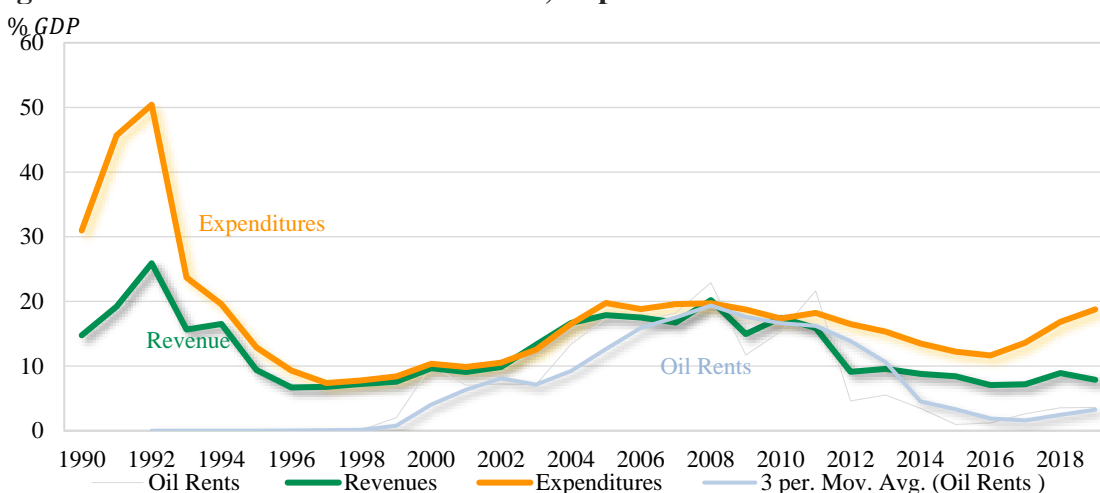
Multiple sources all referencing Sudan’s Central Bureau of Statistics; IMF, 2020; www.citypopulation.de/en/sudan; World Bank Databank for South Sudan Population; period average growth rates calculated as geometric means.

Fiscal data show government revenues and spending reached unsustainable levels early in Bashir’s tenure. The government was running a deficit of more than 20% of *GDP* (see Figure 2). In the background, these deficits were monetized, resulting in inflation rates over 100%. Consequently,

the Central government was forced to reduce spending sharply to balance its budget. At the tail end of this austerity, oil revenues began to flow and bolster the central government's public finances. The increase in spending came back to haunt the government, however. A significant factor in the ensuing crisis was the increase in the central government's commitments and the resulting public sector borrowing.

The oil boom in Sudan was as much a curse as a blessing. The additional revenues allowed the government to spend on its choice of public goods. At the same time, it led to corruption on a scale never seen in the country, a decline in the share of non-oil revenues to a level below the pre-oil average, and crowding out of investment in non-oil sectors. The government's mismanagement of its fiscal finances and overcommitments forced it to raise public sector borrowing, a factor that played a direct part in the economic crisis that precipitated the regime's fall. Sudan is not unique in this respect. In the 1990s and 2000s, Turkey experienced fiscal problems precipitated by an unsustainable public debt burden. The lesson learned from the Turkish and other experiences is that *ex-post* measures to address an economic crisis are inefficient at best (in the sense of imposing higher economic costs) or unsuccessful. Addressing public sector fragility requires early recognition and has led to proposals to develop indexes of public sector financial fragility and systemic risk (Yildirim (2021)).<sup>5</sup>

**Figure 2. Central Government Revenues, Expenditures and Oil Rents. 1990-2020**



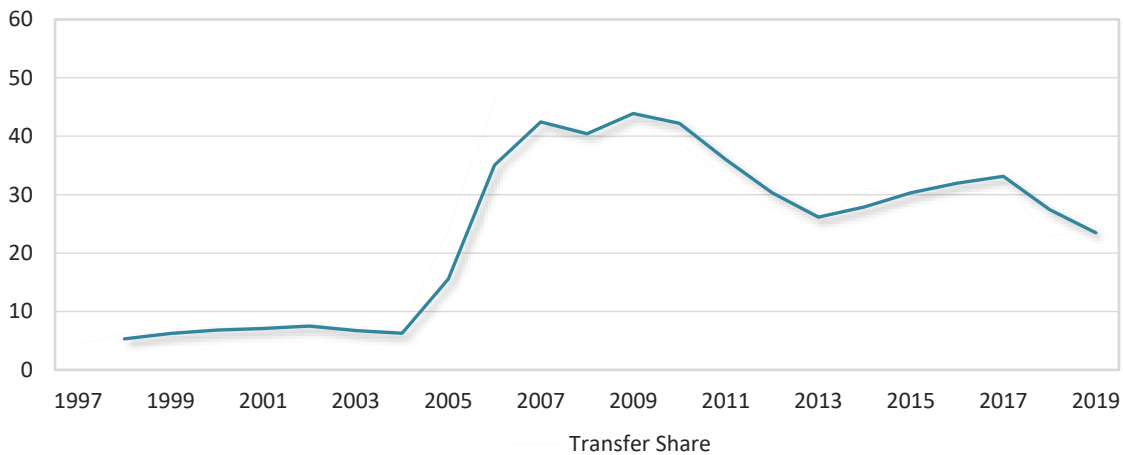
Source: IMF World Economic Outlook Database, October 2021 [Data from National Statistics Office. Sudan Central Bureau of Statistics].

State and local governments benefited substantially from the rise in oil revenues. Transfers to lower levels of government increased starting in 2005, from less than 10% to about 40%, as required by the interim constitution (see Figure 3). In addition, the flow of resources supported significant gains in socioeconomic outcomes, including life expectancy and schooling (Figure 4).

<sup>5</sup> See Appendix B for further discussion of fiscal fragility.



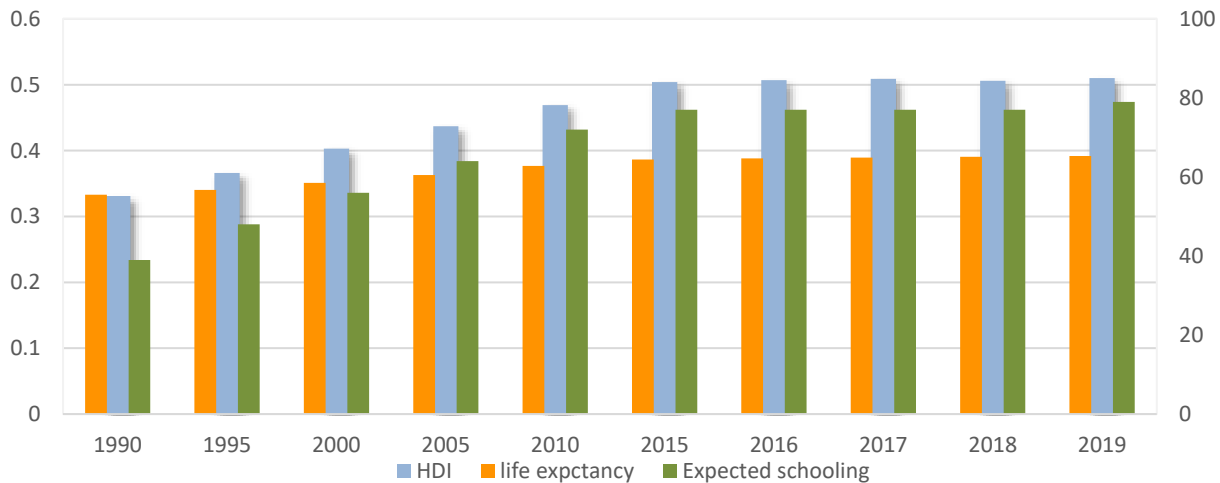
**Figure 3. State Transfers as a share of total Central Government Revenue, 1970-2019**



Notes: 2-year moving average.  
 IMF World Economic Outlook Database, October 2021 [Data from National Statistics Office, Sudan Central Bureau of Statistics]

At the same time, it is hard to ignore that state and local governments bore the price of the central government’s mismanagement of its fiscal affairs. Not only did they receive a lower share of the central government’s lower revenues (nearly half), but this lower share also applied to a smaller base. Consequently, the health and education gains observed in the earlier period stalled. In fact, basic indicators of well-being barely changed after 2010 (see Figure 4).

**Figure 4. Human Development Metrics**



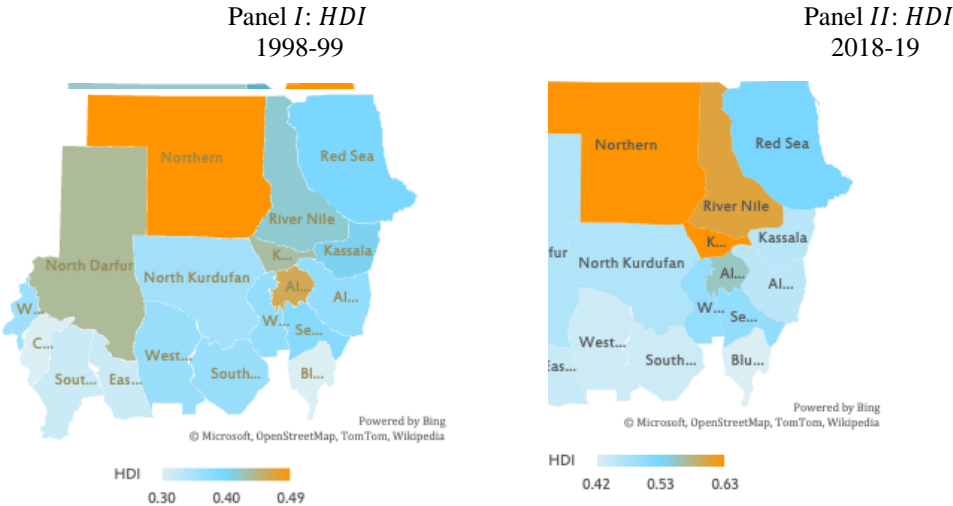
Source: [U.N. Sudan Human Development Reports, 2020](#)

What is more notable in Sudan is the extent to which national development metrics mask variation at the state level. We discuss this issue in Section 5 but note here that the gaps in standards of living across states are astounding and equivalent to moving from a very low-income country to a

middle-income one. This pattern applies to a range of measures, including poverty, access to essential services, and ultimately, *HDI*.

The data show gains in measures of well-being not only differed across states, but the gaps *increased* over time. Figure 5A (and Appendix Table 1) encapsulate this trend using *HDI* as a summary statistic. Panel *I* presents the 1999 level of *HDI* and shows a notable gap between the worst off (Blue Nile and South Darfur) and the most developed states (Northern, Khartoum). Panel *II* completes the story. By the end of the Ingaz regime, the gap was equivalent to that between South Sudan (ranked 185) and Ghana (138) or India (131). An equally telling observation is that some states had not even reached the level of human development achieved a decade earlier. For example, in 2019, the *HDI* in Blue Nile was less than what Northern, Khartoum, and Al Jazeera had in 1999.

**Figure 5A. Level and Change in State HDI, 1999-2019**

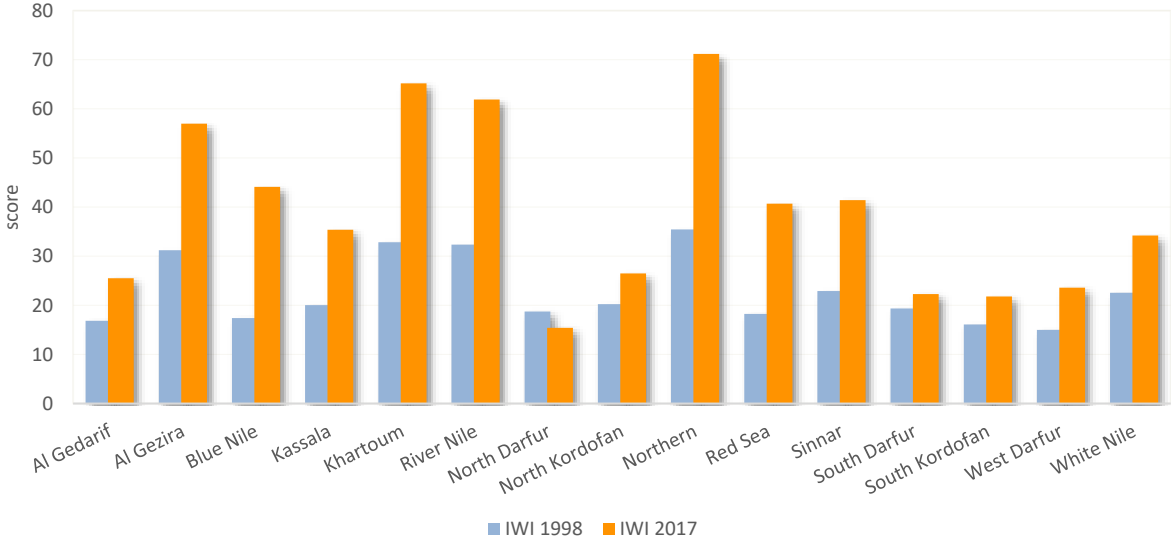


Asset ownership data tell a broadly similar story. Our measure is based on the International Wealth Index (*IWI*), an asset-based measure of households’ living standards in developing countries.<sup>6</sup> A low value implies fewer assets and, therefore, higher poverty. Figure 5B shows the score for states in 1998 and 2017. One can glean poverty by calculating  $1-IWI$ . To put this in context, a household with an index of 30 would have a phone and bicycle but no electricity (hence no

<sup>6</sup> The index is calculated using information on consumer durables (possession of a TV, fridge, phone, bike, car, a cheap utensil and an expensive utensil), access to public services (water and electricity) and housing characteristics (number of sleeping rooms, quality of floor material and of toilet facility) and varies from 0 (no assets) to 100 (all/high quality assets).

refrigerator or T.V.) or good-quality drinking water and housing. The figure showed widespread poverty in 1998. Only four states – Khartoum, Northern, River Nile, and Al Gezira – had scores (barely) above 30. The highest rates of poverty were in the West and South. – West Darfur, South Kordofan, Blue Nile. Over time, all states except North Darfur saw a decline in poverty. However, the gains were far from universal or evenly distributed: the most significant gains were in the states with the best outcomes in 1998. By the end of the period, the average improved, but so did the inequality in living standards across states.

**Figure 5B. IWI score, 1998, 2017**



Both *HDI* and the *IWI* show a consistent pattern: living standards improved marginally over time, but the degree of inequity also increased over time. Our goal in this paper is to examine how fiscal federalism in Sudan affected these trends. More precisely, did fiscal transfers to states offset or exacerbate differences across states?

**3. A primer on fiscal federalism**

**Conceptual Issues**

Fiscal federalism refers to the distribution of responsibilities, tax, and spending powers across different levels of government. Conceptually, decentralizing the public bundle (taxes and services) to local governments can lead to a more efficient provision (Tiebout, 1956). But under arguably severe conditions, such as costless mobility and no spillovers in public goods across states. Conversely, decentralization could lead to more inequality across jurisdictions. However, intergovernmental transfers can offset the distributional consequences. More broadly, (fiscal) federalism has the potential to improve governance. The argument is that citizens are more likely to engage when the public bundle is determined at the local level, forcing the government to be more responsive and accountable to its citizens (Siegle & O’Mahoney, 2019).

Federal frameworks may also pose risks if not designed and implemented properly. By properly, we mean allocating tax powers and expenditure responsibilities based on a framework that balances equity and efficiency. On the spending side, the optimal allocation depends largely on efficiency considerations – including economies of scale in production and externalities. Addressing equity is more challenging on this front, mainly because the value of local provision is that communities have different preferences for the public good. We return to this issue in the empirical section of the paper. On the tax side, the literature has followed two broad approaches. Early work (e.g., Gordon 1983, Keen and Kotsogiannis 2002) focused on fiscal externalities across jurisdictions and between jurisdictions and the central government. This work generally imposed restrictions on the set of tax instruments and showed that local taxes are suboptimal. In a governance framework, Wellisch (2000) shows that capital mobility can constrain privately motivated spending and mitigate corruption. In addition, he concludes jurisdictions must have a complete set of tax instruments for the system to be efficient. More recent work tackles this issue directly. Dvorkin (2017) superimposes a federal system on a Mirrlees (1971) model with labor mobility and information asymmetries. When taxes are fully nonlinear, the model yields the same optimal tax structure as in a unitary system, *given a set of conditions*.

One issue with these analyses is they rely on traditional models that ignore the central issue in developing countries: tax administration. While Slemrod's (2010) seminal work directly incorporates tax capacity in the optimal tax framework, no work has yet extended the analysis to a federal system. Empirical work, however, suggests the results are unlikely to be so straightforward: Best *et al.* (2015) show that accounting for tax administration in Pakistan overturns results of optimal tax theory<sup>7</sup>. Still, optimal tax analysis does provide valuable insights. The primary one is subnational taxation of mobile factors creates more distortions than at the central level.

Centralized tax powers, on the other hand, undermine fiscal discipline by local governments. Consequently, tax bases, administration capacity, and collection capacity vary between localities (Oates, 1999). States with lower capacity collect less revenue while depending more on federal transfers. Revenue collection capacity also reflects the disparities experienced in poorer regions, as they contain low levels of own-source revenues and relatively low levels of formula-based federal transfers. Due to the centralization of political and regulatory power, state and local government actors tend to be less responsive to their constituents (Oates, 1999). Without accountability, revenue management remains unchecked, making it challenging to implement mechanisms effectively or equitably. Clearly defined fiscal transfers are crucial to offsetting pre-

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<sup>7</sup> Using data from Pakistan, Best *et al.* (2015) show that a turnover tax [which is production inefficient] is welfare improving [relative to profit tax] in a setting with low capacity.

existing jurisdictional inequities. In Sudan, for example, expenditures have favored urban regions in recent years, exacerbating existing urban-rural disparities and failing to address rural poverty.

This bias is notable given that public goods increase when residents share identities with governing actors (Besley, Pande, Rahman, & Rao, 2004). The relationship between diversity and public goods provision is *nearly* universal across cultures and geography: more diverse states, or those with higher concentrations of minorities, have the least access to public goods. One potential solution is a more significant role for the central government. For example, fiscal transfers encourage regional minorities to participate in policymaking decisions (Bakke & Wibbels, 2006). Alternatively, political manipulation can mitigate the decline in public goods with diversity (Miguel 2004). Comparing communities of similar tribes and levels of diversity, Miguel finds that the negative relationship is present only in Kenya, where the government actively exploited inter-tribal fissures. On the other side of the border, the government implemented a top-heavy campaign to get citizens to identify as Tanzanians and not as members of a tribe.

### **Fiscal Federalism in Practice<sup>8</sup>**

Fiscal federal in practice varies dramatically across countries regarding taxing powers, responsibility for public goods and services, and the design of intergovernmental transfers (Oates, 1999, Tanzi & Zee, 2000)<sup>9</sup>. Beyond these factors, central governments influence subnational governance in direct (e.g., unfunded mandates) and indirect ways (conditional transfers). This section reviews the broad patterns in the practice of fiscal federalism across countries.

### **Delivery of Public Goods and Services**

The assignment of responsibilities for public goods and services follows a relatively consistent pattern across countries (Broadway and Shah, 2007). The primary criterion in this regard is efficiency: spending should be assigned to the level of government that can provide services that match residents' preferences and at a lower cost. Equity is generally addressed through fiscal transfers. Broadly, the assignment of expenditure responsibilities across countries is as follows:

- a. *Central Government*: provides public goods and services that benefit the whole country (e.g., defense, foreign affairs, money & banking, national infrastructure, and social insurance schemes – e.g., pensions, unemployment insurance – (Deng, 2016).
- b. *Subnational/states*: provide public services, such as health, education, and welfare, in addition to state public goods (e.g., roads and police protection). Goods that benefit more defined populations, such as residents of a state or province, should fall under the purview of their governing bodies. This allows residents to register potentially different preferences and hold officials accountable.

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<sup>8</sup> This section borrows from and builds on Logan *et al.* (2021).

<sup>9</sup> Although borrowing mechanisms are essential, we do not consider them in this discussion.

c. *Local governments (LGs)*: provide local public goods and services (e.g., public safety, local roads, water & sanitation, recreational facilities, etc.). By allowing different communities to register preferences, governments can provide services more efficiently since consensus moderates the free-rider problem. Local communities can also better monitor officials and hold them accountable for delivering promised services.

## **Revenues**

The power to set and collect taxes is intrinsic to the development of the state. While all governments need revenue to meet their responsibilities, the issue at the subnational level is more subtle. The value of centralizing revenue is, on one level, risk-sharing. A state facing an unexpected negative shock could rely on others to offset the decline in revenue. On the other hand, a state with no power to tax would be beholden to the central government.

A fundamental principle in the allocation of taxes across different levels of government is the mobility of taxed factors. Taxing mobile factors at lower levels increases the efficiency cost of taxation since individuals and business can alter their behavior (i.e., move) to avoid a tax.

In practice, the extent to which state and local governments can exercise discretion in setting taxes varies substantially across countries. While developed economies allocated these powers primarily on constitutional requirements, it does not mean we have common patterns. Switzerland, and the United States of America, for example, allow state and local governments to levy any of a broad set of taxes. At the other end of the spectrum, Australia and Germany impose some restrictions (Boadway and Shah, 2007). In developing countries, administrative and institutional capacity is also a primary consideration. As a result, most state and local governments in developing countries rely heavily on transfers to fund public goods and services. At the local level, revenues from property taxes and service charges are a potential source of revenue but are rarely administered effectively.

## **Intergovernmental Transfers**

Intergovernmental fiscal transfers are a universal feature of fiscal relations between the central and subnational governments. In many cases, they represent the dominant source of revenue for subnational governments in developing countries (World Bank). Moreover, their design affects not only local service provision's efficiency and equity but also local governments' fiscal health (CIESN, 1994).

Because inequities across jurisdictions are inherent to federal systems (Tiebout, 1956, Oates, 1999), one key goal of transfers is redistribution of resources to offset inter-jurisdiction gaps in public goods and services. In addition, central governments fund (partially or fully) social

programs or regulatory mandates it imposes on state and local governments. Finally, transfers address inefficiencies in public goods provision due to production economies of scale and inter-jurisdictional spillovers. In both cases, we get under-provision (relative to the social optimum) if subnational governments provide public goods and services.

Intergovernmental transfers differ along two dimensions: 1) conditionality and 2) matching. Conditionality defines the degree of autonomy: conditional grants are linked to specific purposes, while unconditional grants could be used for any purpose. The second dimension is the type of subsidy. Matching determines whether transfers represent price subsidies or income (block) grants. Matching grants transfer a fixed amount per dollar spent by the local government. They reduce the effective price (per unit cost) of public goods paid by subnational governments, but at the same time, they require that local authorities allocate their resources towards provision. Block grants transfer a lump sum amount to local authorities, which increases local resources. Conditionality applies to matching- and block- grants and limits local authorities' ability to reduce local taxes rather than spend on the targeted public good.

### **A Caveat**

Fiscal federalism is far easier to define than it is to measure. The typical metrics – the share of total per-capita spending and revenues by subnational governments – presumably reflect the relative powers of the central versus lower levels of government. However, they do not necessarily reflect where the decision-making powers lie. There are myriad ways that decisions by the central governments filter to state and local governments, such as mandating the provision of services, setting regulations that affect spending, and using conditional intergovernmental transfers. We discuss this issue in the next section.

## **4. De-jure fiscal federalism in Sudan<sup>10</sup>**

### **History**

The issue of federalism has been integral to the political fabric of Sudan since the country was under Anglo-Egyptian rule. The foundation for local government dates back to the 1922 Milner Commission and the adoption of “Native Administration.” However, it was not until the 1949 Marshall Commission formally addressed the provision and financing of public service. The latter's proposal for Town and Rural District Councils – adopted in the 1951 local Government Act – balanced the desire for meaningful local participation and the capacity to provide public services, raise local revenues, and administer central-government grants (Norris, 1983). This framework was initially successful: until 1959, local council budgets were in surplus, and none needed central government support (El-Battahani and Gadkarim – *EG*-2017). The early success, however, was

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<sup>10</sup> This summary borrows from Logan (2021).

shaky. Local government revenues stagnated and failed to cover spending requirements. In addition, growth in the number of District councils came with capacity constraints.

Around the time of independence, federalism was espoused by the South as means of addressing some of the glaring inequities that existed and gaining a modicum of power in a system dominated by the North. However, it was not until 1969 that the government (Nimeiri) recognized the Southerners' right to their "respective cultures and traditions" and promised them some measure of regional autonomy. However, the underlying fissures in the South had implications that extended far beyond its boundaries to become a national issue. To quote Mansour Khalid, former Minister of Foreign Affairs: "racial intolerance, uneven economic development, poor communications, and the near collapse of educational and other facilities, while exacerbated in the South by the war that had been raging since 1956, were nonetheless becoming national issues" (Khalid, 1990).

Subsequently, the government adopted a vision of "unity in diversity" espoused in the 1971 People's Local Government Act. Two key pillars directly acknowledge the challenges of inequity in a county with an ethnically diverse population. First, the reform of local administrative structures was to cater to the cultural and ethnic heterogeneity of the Sudanese people and put an end to the process of uneven development. In practice, the reforms were far-reaching. The Act abolished Native Administration and dramatically increased the number of local councils (to more than 5000) even as it usurped their autonomy. Up to this point, towns and districts continued to operate and provide public services. The reform, however, made the Provincial Executive Council the primary policymaking and *sole* budgetary unit within the province. In addition, powers were devolved from the Central government to the provinces *en masse*.

The rationale behind the Act was to increase local fiscal capacity such that regions and localities could cover shortfalls in fiscal transfers from the Center. However, given the scale of changes, it should not be surprising that this largely failed: "...in 1979 local councils in Sudan generated 55 million *SDG* in revenues, while spending 260 million *SDG* (*E.G.*, 2017). Ultimately, insufficient central-government transfers, the scale of the change, and the lack of local capacity doomed the Act and led to regional rule in 1980.<sup>11</sup>

Nonetheless, the provinces continued to administer their own budgets, leaving the central government (the Ministry of Finance) with the sole task of setting the allocation of subsidies to each province (Suliman, 2008). As a result, provinces built a bureaucracy that increased overall spending and siphoned budgetary allocations (for wages and salaries) at the expense of developmental projects. With stagnant revenues, deficit finance filled the gap. Khartoum was an

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<sup>11</sup> Five new regional governments (Southern, Darfur, Kordofan, Central, Northern and Eastern) were created, which along with Khartoum meant a total of 6 operated from 1981 onwards.



exception. It was financed by the central government and therefore had better medical and educational services and economic opportunities. This system remained in place with no meaningful changes until the Ingaz regime.

Citing the country's ethnic diversity and the aspirations of local populations to have a say in their local affairs, the government adopted the 12<sup>th</sup> Constitutional decree to move towards a federal republic with federal, state, and local levels of government. (Mohamed, 2012; Yasin, 2008). The order increased the number of states from 9 to 26 (16 in the North), with expenditure and revenue responsibilities assigned accordingly. Further, each state had three lower tiers of governance: provinces (*muhafaza*), local councils (*mahaliya*), and popular grassroots committees (*el ligan el shabia*). With this structure, the number of total jurisdictions increased dramatically, with 98 provinces and 493 localities in addition to the 26 states (*E.G.*, 2017). Localities were considered the basic level of government in the state, expected to provide public goods and services, ensure the rights of citizens, and oversee popular committees. To fund operations, localities could impose taxes on property, local transportation, local livestock production, and other local taxes or duties (Logan *et al.*, 2021).

To meet their responsibilities, state governments could collect revenue from several sources. These include central government transfers administered through the Northern States Subsidy Fund (NSSF), off-budget transfers – of 43% percent of *VAT* collections, – 10% of public enterprise profits, and own taxes, fees, and user charges. The quasi-independent sources of revenue did not translate to autonomy, however, as the central government exerted substantial control over states.

Conflict continued to shape Sudan's political and economic standing until 2005, which marked the adoption of the Comprehensive Peace Agreement (CPA) and the Interim National Constitution (INC). These were meant to address regional disparities through more equitable wealth-sharing. Towards this end, the INC established a National Revenue Fund (NRF) to consolidate and fairly distribute transfers, with guidance from a newly established Fiscal and Financial Allocation and Monitoring Commission (FFAMC).<sup>12</sup> The FFAMC was tasked with safeguarding fairness in the allocation of funds with a specific set of criteria for allocating fiscal transfers it largely failed to adhere to them until after the CPA (Elbadawi and Suliman, 2007).

### **The Juba Peace Agreement**

After the overthrow of the Ingaz regime, the government signed the *JPA*, covering a wide range of fiscal, political, and administrative issues with states. The document extensively addressed taxation and revenue-sharing arrangements but had a potentially fatal flaw. As part of the *JPA*, the government agreed to a baffling – specifically, 6 – number of bilateral agreements with

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<sup>12</sup> [Sudan's Constitution of 2005](#)

different armed factions, all of which were meant to be implemented concurrently. In addition to, or perhaps because of, this complex structure, the agreement failed to ensure the individual contracts were compatible. States were given different levels of autonomy, which was not only problematic in and of itself but also set a stage whereby any (real or perceived) preference in the speed of implementation could lead to further conflict.<sup>13</sup>

The status of the *JPA* remains unclear. The *FY2021* budget shows the transitional government budgeted for transfers in the agreement.<sup>14</sup> However, the October 2021 military coup and the eventual collapse of the civilian government superseded any progress in implementation.

### Tax Powers

The transitional government inherited a fragile fiscal system in which real central government transfers declined by more than 50 percent after South Sudan seceded in 2011 and by 65 percent since they peaked in 2008. As a result, states would have to look elsewhere to fund expenditures.

The allocation of tax-revenue sources (from the time of the 1998 Constitution) gave the central government jurisdiction over indirect taxes (*VAT* and customs) and state governments jurisdiction over direct taxes (personal income, business profits). In addition, states receive transfers from the central government and raise revenues from state land, property taxes, and agriculture. The type of transfers and other revenue sources are presented in Table 1.

**Table 1. Assignment of Tax Powers**

Revenue Type	Revenue Items
Own-source taxes	<ul style="list-style-type: none"> <li>a. State land and property tax and royalties</li> <li>b. Charges for state services; licenses</li> <li>c. State personal income tax</li> <li>d. Levies on tourism</li> <li>e. Excise duties</li> </ul>
Grants and Transfers	<ul style="list-style-type: none"> <li>Earmarked transfers <ul style="list-style-type: none"> <li>a. Wages (judicial, police, higher education<sup>15</sup>)</li> <li>b. Operations (“</li> <li>c. Social subsidies</li> </ul> </li> <li>Block transfers <ul style="list-style-type: none"> <li>d. Agricultural tax compensation</li> <li>e. Current transfers</li> <li>f. Emergency aid/ad-hoc transfers</li> </ul> </li> <li>Development <ul style="list-style-type: none"> <li>g. State development projects</li> </ul> </li> </ul>

Sources: Logan et.al (2021) and El-Battahani and Gadkarim (2017).

<sup>13</sup> Logan *et al* (2021)

<sup>14</sup> [Ministry of Finance FY2021 Budget](#)

<sup>15</sup> Primary and secondary education is the responsibility of state governments

Two observations are worth noting. First, taxes assigned to states are generally more costly to administer and ultimately provide little revenue. Second, assigning income and business profit taxes to states is inefficient, especially if factors of production are mobile. One could conceive of an argument for direct taxation at the local level based on imperfect information. If local officials can better observe earnings, they can more efficiently set and collect the tax. But we have no empirical evidence to bring to bear on this issue.

### Public-Service Delivery

The transitional government also inherited a system that placed substantial responsibility on subnational governments to provide vital public services, including education, health, citizen registration, and regulation of businesses. This resulted from decentralization introduced in 1998 and expanded in the 2005 interim constitution. Table 2 presents the broad outlines of responsibilities.

**Table 2. Distribution of Responsibilities Public-Service Delivery**

Central	State
a. defense, armed forces, police, security	a. security and public order
b. foreign relations	b. Public service provision [social welfare, primary and secondary education, healthcare]
c. federal, state, and local election rule	c. State's lands, natural resources
d. currency; financial, credit policies	d. Local infrastructure [ non-transit waters and electric power; state roads, transport, telecommunications]
e. federal lands and natural resources	e. registration of births, deaths, and marriage documents
f. large scale infrastructure	

Sources: Logan *et.al* (2021) and El-Battahani and Gadkarim (2017).

The assignment of responsibilities is broadly consistent with the scale of publicness in services. Public goods that are local public goods are delegated to lower levels of government, while those with widespread public benefits remain the responsibility of the central government. More specifically, the federal government is required to provide services and goods throughout the country, including defense, security, and monetary affairs. In contrast, lower levels of government have jurisdiction over public order, roads, and public transport. It is worth noting that some goods – like social welfare – have local and national spillovers and, therefore, should have shared responsibility. For example, both health and education are shared, with central-government financing and local provision. In the vacuum created by the lack of clear guidance, however, responsibilities often overlap, and the bureaucracy expands.

### Intergovernmental Transfer Formula

The capacity of Sudanese states to impose and collect taxes varies considerably. Poorer states – with a smaller per capita tax base – raise less revenue at any given tax rate than wealthier states (Bongo, 2019). In addition, the cost of public services varies due to a host of factors, such as geography and population density. Therefore, a standard level of services requires different

transfer amounts. Regardless of various circumstances, most states in Sudan rely heavily on central government transfers that reflect revenue sharing (vertical transfers) and redistribution (horizontal transfers) to fulfill their mandates.

Central government transfers should be consistent with transparent criteria derived from specified goals. Two primary goals are need and equity, the latter to offset differences in living standards across states. Although successive regimes touted the need to address gaps across states, it was not until the 2005 Wealth Sharing Protocol that the governments made the goal explicit. The protocol stated: “national wealth shall be shared equitably between different levels of government to allow enough resources for each level of government to exercise its constitutionally defined duties” (E.G., 2017).

The NSSF (later renamed the National Revenue Fund) administered the transfer under the mandate that transfers would be based on a specified formula and distributed equitably. Table 3 presents the set of indicators and their associated weights and shows the evolution of the formula between 1997 and 2017. There is considerable change in both the weights and the indicators over the period. The most dramatic is the additional 15 percentage points allocated to population size and the replacement of per-capita income with distance to the Center and port. The 2017 formula gives the highest weight to population (25), including total size, density, and urban size. Security and agriculture are weighted equally (15), followed by education and health. Fiscal performance weights 10 percent, suggesting the central government is concerned about the incentives transfers create at the subnational level. This is reinforced by the greater emphasis on budget surpluses than deficits. The criticism of the formula has been that the lack of clarity with indicators leaves ample room for discretion to seep into the process.

**Table 3. Transfer Formula Weights**

<b>Indicators</b>	<b>1997-2005</b>	<b>2006-2013</b>	<b>2017-</b>
Fiscal performance	20	10	10
• <i>revenue, current exp</i>			2
• <i>budget surplus</i>			3
• <i>budget deficit</i>			1
• <i>revenue improvement</i>			2
• <i>inflation</i>			2
Population Size	10	10	25
• <i>population</i>			12
• <i>density</i>			5
• <i>urban</i>			8
Education	10	10	13
• student pop ratio			5
• teacher ratio			3
• number of students			5

**Table 3. Transfer Formula Weights (contd.)**

Indicators	1997-2005	2006-2013	2017-
Health	10	10	12
• <i>hospital beds</i>			4
• <i>number health facilities</i>			4
• <i>per-capita doctors</i>			1
• <i>per-capita midwives</i>			3
Security	10	15	15
• <i>police</i>			4
• <i>prisons</i>			5
• <i>security conditions</i>			4
• <i>date state created</i>			2
Agricultural requirements			15
• <i>livestock</i>			8
• <i>agricultural area</i>			7
Distance to center and port			8
• <i>&lt;500km</i>			1
• <i>500-100km</i>			3
• <i>&gt;1000km</i>			4
Off budget support			2
Human resources	10	10	
Natural resources	10	15	
Per capita income	10	10	

Source: Elbattahani-Gadkarim (2017), World Bank (2022).

## 5. De-Facto fiscal federalism in Sudan: Trends over time and across States

No fiscal federalism system matches its statutory design and Sudan is no different from other countries in that sense. What is striking in the case of Sudan is the dominant presence of the central government, even with decentralization. Also, the variability of transfers (and limited capacity) means that subnational governments struggle (to different degrees) to provide services. In this section, we examine the fiscal federalism system implemented in Sudan, focusing on its impact across states and its evolution over time.

### Data and Summary Statistics

Painting a portrait of fiscal federalism is challenging in any context but daunting in Sudan. This is mainly due to the lack of reliable data, especially at the state and local levels. Consequently, the data used in this paper come from a variety of different sources. Central and subnational fiscal and economic data came from the Ministry of Finance and Economic Planning (*MoFEP*), the Fiscal and Financial Allocation and Monitoring Commission, Central Bureau of Statistic (*CBS*), Central Bank of Sudan, the World Bank, and the IMF; subnational social and economic indicators came from The Global Data Lab (*GDL*)<sup>16</sup>; and attitudes about government came from [Afrobarometer](#). Appendix table A.1 presents summary statistics for the primary variables.

<sup>16</sup> [GDL](#) is an independent data and research center at the Nijmegen School of Management of Radboud University.

Several issues arise with the dataset we compile. First, different methods and metrics across data sources create potential inconsistencies and measurement error. Second, surveys at the subnational level are infrequent, which necessitates projecting demographic characteristics in intervening years. Finally, one could legitimately question the accuracy of *reported* transfers during the Ingaz regime. The Bashir government was corrupt and had access to sizeable revenues that went unreported. The regime also actively went about the destruction of the state, replacing qualified civil servants with unqualified cronies. While significant, our assessment is that these issues are unlikely to affect the results meaningfully. Ultimately, our findings are broadly consistent with previous analyses from different time periods and using differing methods (Bell, 2005; Elbadawi and Suleiman, 2008); Elshwin and Maglad, 2017).

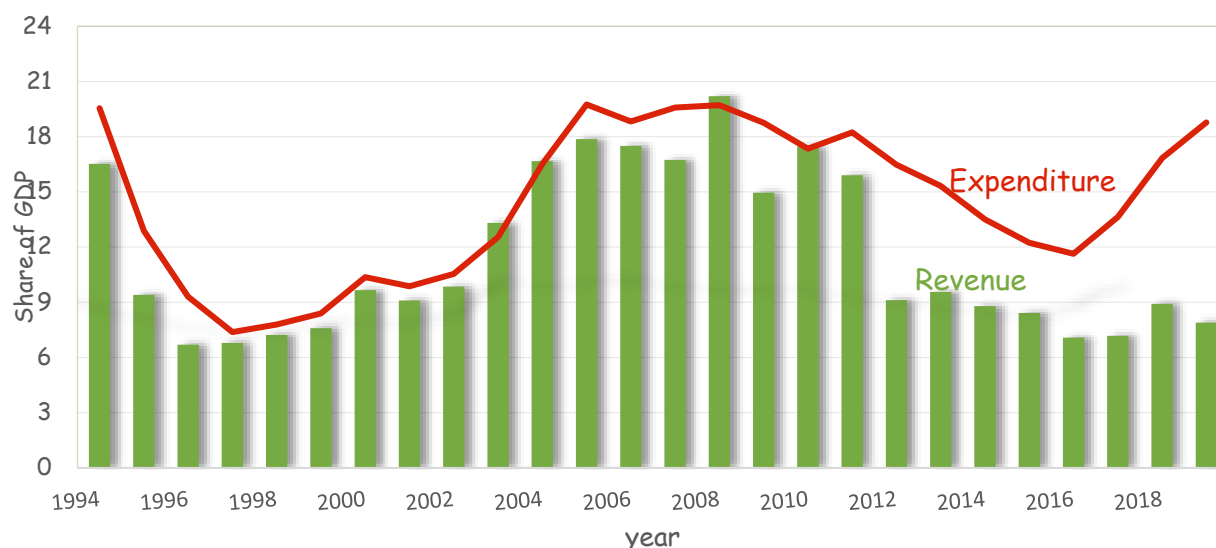
We first discuss the macro trends during the Ingaz regime and then present summary statistics and analysis of the determinants of fiscal transfers.

The discovery, export, and loss of oil play a dominant role in the fiscal position of Sudan for all levels of government. Figure 6 presents central government revenue and expenditures from 1994<sup>17</sup> to 2019. Oil rents raised total central-government revenue by ten percentage points of *GDP* at their peak, but they were highly volatile because of market and political factors. For its part, the government did little to plan for the foreseeable secession of the South and the loss of more than half of its revenue. Overall, real central government expenditures increased by about 16 percent *annually* for 20 years starting in 1999, such that their *GDP* share increased from 8 to 19 percent at their peak. Equally striking is the extent to which the volatility in revenues filtered to expenditures: except for the tail end of the regime, expenditures fell and rose along with revenues.

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<sup>17</sup> Between 1989 and 1994, the government implemented severe austerity program to stabilize inflation and reduce the deficit. We exclude that period to focus the discussion on intergovernmental fiscal relations.

**Figure 6. Central Government Fiscal Balance Share of GDP**



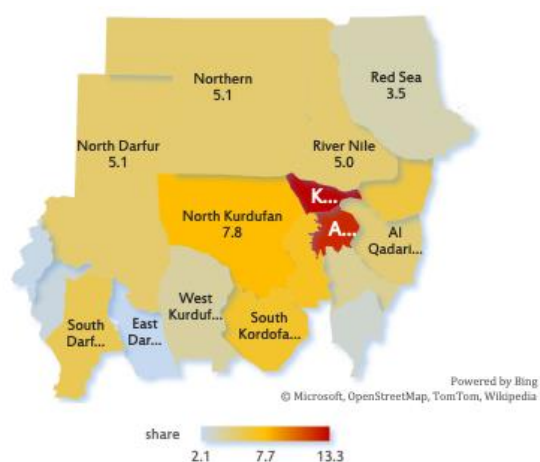
Source: IMF, World Economic Outlook Database, October 2020.

As it increased resources to states, the central government gave them more leeway to make decisions about the set of public goods and services they would provide. This delegation came by way of a shift from conditional to unconditional transfers. The share of transfers sent without conditions rose from 27 percent in 2000 to 63 percent in 2017. Data on expenditures are available only from 2012 to 2018, but at least over this period, they show states shifted spending from wages (-9 percentage points) to entirely capital goods. The pattern was by no means uniform, however, since spending at the subnational level should reflect the preferences of residents in the respective jurisdictions. Twelve states, mainly in the West and South, shifted spending from wages to capital goods and development. These states are generally poorer and less developed, so the shift to capital spending seems appropriate. We examine the composition of state spending further in Section 6.

Transfers from the central government vary widely across states and show little resemblance to what might be expected from the transfer formula. Figure 7 shows the distribution of real total transfers between 2012 and 2018.<sup>18</sup> Khartoum (13.1) and Al Jazeera (11.9) received the largest share of money in that period. At the other extreme, Darfur (East, Central, West), Blue Nile, and Red Sea receive the smallest share.

<sup>18</sup> Although the empirical analysis is based on per-capita transfers, we present total transfers to show the flow of resources from the central government.

**Figure 7. Distribution of Total Transfers, 2012-2018**



Compared to each state's share of the population, residents of the five Darfur states are more consistently and severely shortchanged than any other. Darfur states represent nearly 28 percent of the population but receive less than 18 percent of transfers. This stands in sharp contrast to Northern, whose transfer share is more than double its population share. The pattern is more confounding when considering the relative development of states since those receiving higher transfer shares are relatively well-off. One could argue a case of reverse causation, that states developed faster *because* they received more resources. But the pattern remains even at the beginning of the period. In 2012, Northern ranked second only to Khartoum on measures of standard of living (*HDI, IWI*) while the Darfur states were at the bottom. Even putting aside Darfur (because of the war), there is no state of the world in which one would argue for sending relatively more money to residents of Northern, Khartoum, or Al Jazeera than to poorer states.

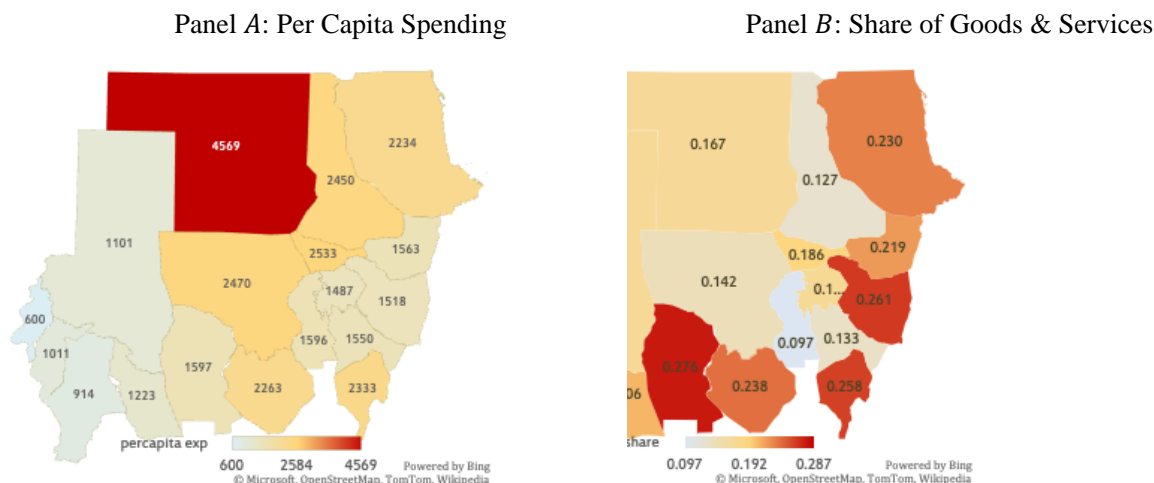
A clearer picture of the distribution of transfers emerges from per-capita transfers and transfers as a share of total state revenues (Figure 8). Before discussing per-capita figures, however, we note we rely on state population *projections* based on infrequent surveys. To gauge the implications for transfer distribution, we use two different population figures: official *CBS* projections and *GDL* estimates calibrated to actual population figures from [UNICEF's state profiles](#).<sup>19</sup>

<sup>19</sup> There is little material difference in the distribution of per-capita transfers.





**Figure 9. State Expenditures, 2012-2018**



Another relevant dimension of state expenditures is the share spent on goods and services, which varied between 10 and 28.7 percent between 2012 and 2018 (Panel B). While worse-off states tend to allocate a higher share to goods and services, they remain far behind because of the vast difference in available resources.

## 6. Empirical Analysis and Simulations

This section examines the relationship between fiscal transfers and underlying inequities across states. The data we use are state-level observations of fiscal variables (transfers, own revenues, and expenditures) and observable characteristics (population, urbanization, and support for the *NCP*) between 2012 and 2018. Given the short duration and limitations of the data (see Section 5), the results are meant to be exploratory rather than causal. Second, we simulate transfers under two extreme models: equal per-capita transfers and equalizing per-capita public goods.

### Regression Analysis

This section aims to understand how state characteristics map into per-capita transfers. The basic specification uses panel data between 2012-2018<sup>20</sup> and is given by:

$$y_{st} = \alpha + \beta N_{st} + \xi_s + \lambda_t + \mu_{st} \quad [1]$$

<sup>20</sup> One exception is West Kordofan, which was established in 2013

where  $y$  is the log of per-capita transfers,  $s$  and  $t$  subscripts represent state and time, and  $\xi_s$ ,  $\lambda_t$  are state and time dummies. Controlling for state and time means only the variation within states over time is used for identification.  $N$  represents need metrics. We use *HDI* score, the health, education, and income indexes of *HDI*, and *IWI* score. In this regression, the sign of  $\beta$  tells how transfers affect inequities. More precisely,  $\beta$  would be negative if transfers ameliorate differences across states.

We expand the specification to account first for state characteristics and state *fiscal capacity* as follows:

$$y_{st} = \alpha + \beta N_{st} + \sigma FC_s + \sigma NCP_{st} + X'_{st} \delta + \xi_s + \mu_{st} \quad [2]$$

where  $FC$  is state fiscal capacity,  $NCP$  is support for the party in power, and  $X$  are state characteristics.  $NCP$  support allows us to test if states in which support for Bashir received preferential treatment in terms of transfers.<sup>21</sup> Our primary interest in the expanded model is the impact of each state's capacity to raise its own tax revenues. Fiscal capacity is problematic because data limitations restrict our ability to address the potential endogeneity problem. We address this concern in three ways. As a first pass, we use the revenue collected by the state as a proxy. Second, we use real per-capita Gross National Income (*GNI*) as a proxy for state revenue. Finally, we estimate an *IV* model, using urban share, *IWI* index, *GNI*, and population as instruments for state revenue.

## Results

Tables 4 and 5 present the regression results. The basic model shows real per-capita transfers between 2012 and 2018 do little to address state inequities (at best) and may exacerbate them at worst. Columns 1-3 of Table 4 compare three measures of need: *HDI*, the health, education, and income components of *HDI*, and the *IWI* score. Two observations are worth noting here. First, in no case do we find a *negative* relationship between per-capita transfers and the three measures of need. This result is slightly weaker but holds when controlling for lagged transfers and suggests the relationship is not entirely driven by reverse causality. Second, neither the subcomponents of *HDI* nor the *IWI* score is statistically significant. We expand the model with *HDI* to test if the relationship holds after controlling for state characteristics. Column 4 shows that while *HDI* remains positively correlated with per-capita transfers, it is not statistically significant. It is unclear whether the transfer formula is lacking or whether it is ignored.

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<sup>21</sup> This is highly speculative since we observe *NCP* support in the 2013 and 2016 waves of Afrobarometer. We assume the average of the two applies in the intervening years and apply a two-year moving average for the final two years.

Table 5 presents the expanded model results. Columns 1-2 use state-own revenues as a proxy for fiscal capacity and present fixed effects and two-stage (sequential) model estimates; columns 3-4 present the results with state *GNI* as the proxy<sup>22</sup>. In the sequential model, the first-stage regression includes only time-varying regressors, while the second stage estimates a regression of the first-stage residuals on the time-*invariant* regressors (Kripfganz and Schwarz, 2019).<sup>23</sup> Both sets of results suggest that per-capita transfers are regressive. Using own revenues, the size of the *HDI* coefficient is positive and statistically significant for both models, although much smaller in the sequential model. The results for *GNI* confirm the regressivity of transfers since the coefficient is positive and significant. However, in this case, there is no relationship between transfers and *HDI*. The remaining variables suggest a positive impact of urbanization on per-capita transfers (also regressive) and a negative impact of population. Depending on the model, the effect of *NCP* support is unstable. However, states with more support for the *NCP* (and Bashir) may receive preferential treatment. Finally, Column 5 presents the results of an instrumental variables model in which *GNI* is the instrument for own revenues. Regardless of how the model of the determinants of per-capita transfers is estimated, the conclusion remains the same. Transfers from the central government do nothing to offset inequities across states.

**Table 4. Determinants of Per Capita Transfers Needs Metrics**

	Outcome: Log (Per-Capita Transfer)			
	HDI	HDI Decomp	Poverty	HDI + State Controls
HDI	3.73** (1.18)			10.83 (5.64)
IWI			-0.004 (0.01)	
Population	-0.16 (0.05)	-0.13 (0.07)	-0.08 (0.06)	-0.65* (0.27)
HDI – Income		2.135 (1.97)		
HDI – Educ		-0.952 (2.40)		
HDI – Health		0.497		

<sup>22</sup> In both cases, a Hausman test rejects the random effects model.

<sup>23</sup> Kripfganz and Schwarz argue the two-stage procedure is more robust against model misspecification than estimating all coefficients simultaneously.

**Table 4. Determinants of Per Capita Transfers Needs Metrics (contd.)**

Outcome: Log (Per-Capita Transfer)				
	HDI	HDI Decomp	Poverty	HDI + State Controls
NCP Support				0.24 (0.41)
Urban				0.02* (0.01)
Intercept	4.89** (0.53)	5.44** (1.28)	6.64** (0.20)	-3.57 (2.7)
N	125	125	125	125
R <sup>2</sup>				0.08

Standard errors in parenthesis. *Sources*: National fiscal data from States Performance Reports (*MoFEP*); economic data from the *IMF*. Population data from *UNICEF* State Profiles and *CBS*; poverty based on International Wealth Index, Global Data Lab Subnational Development Database, Jan 2022.

**Table 5. Determinants of Per-Capital Transfers - Fiscal Capacity**

	<i>Fiscal Capacity</i>				
	Own Revenues		State <i>GNI</i>		
	Fixed Effects	Two-Stage	Fixed Effects	Two-Stage	<i>IV</i>
<i>HDI</i>	22.41* (9.21)	2.03* (0.92)	-6.85 (13.04)	0.19 (1.55)	23.36* (9.47)
Own Revenue	0.11 (0.15)	0.16 (0.08)			0.22 (0.29)
State <i>GNI</i>			0.63** (0.22)	0.08* (0.04)	
Urban	0.02* (0.01)	0.00 (0.01)	0.01* (0.01)	0.01 (0.01)	0.02* (0.01)
Population	-0.68* (0.28)	-0.18** (0.03)	-0.14* (0.06)	-0.14* (0.02)	-0.68* (0.28)
<i>NCP Support</i>	0.20 (0.42)	0.87** (0.26)	-0.03 (0.40)	0.91** (0.26)	0.33 (0.43)
Intercept	-4.72 (4.78)	-4.72 (4.78)	7.25 (5.65)	4.16** (0.50)	-5.93 (5.48)
N	90	90	90	90	90
R <sup>2</sup>	0.18	0.18	0.27	0.27	0.28

See notes in table 4.

## Simulations

Consistent with the existing literature, we find fiscal transfers do little (at best) if not exacerbate pre-existing inequitable outcomes across states. We build on existing work that has evaluated different transfer formulae, indicators, and proxies (Elbadawi and Suleiman, 2007, Elshwin and Maglad, 2017, Logan *et al.*, 2021). One justification for our approach is that the evidence overwhelmingly suggests the existing transfer formula is rarely applied. Elbadawi and Suleiman conclude: “the data suggests that *NSSF* was not following [any] systematic criteria. If anything, it

had in several cases violated these criteria". In fact, the ad-hoc implementation created winners and losers. Winners received up to three times their formula-based per-capita transfers (Nahr Alnil), while losers lost up to 86 percent (Red Sea). We compare actual transfers to weakly equitable (a constant per-capita transfer) and strongly equitable (equal public goods bundle) transfers.

#### *Case I – Weak Equity*

Formally, let the bundle of services for each resident in state  $j$  be:

$$b_j = \tau_j y_j + t_j$$

where  $\tau_j$  and  $y_j$  represents the state's tax rate and per-capita income and  $t_j$  per-capita transfer.

Equalizing transfers for all residents ( $\bar{t}_j$ ) leads to a new bundle  $b'$

$$b'_j = \tau_j y_j + \bar{t}_j$$

This scheme would be more equitable and desirable only relative to the existing system (which favors relatively well-off states). Underlying differences in fiscal capacity and, therefore, public services would remain. However, one way in which equal per-capita transfers would be desirable is in a Rawlsian world since we would improve access to public services in the poorest states.

#### *Case II – Strong Equity*

If the goal is to avoid disparities across states, we could instead set transfers to equalize the public bundle each citizen receives, regardless of where they reside. We assume the central-government budget is fixed. And redistribute revenues so that all states can provide the same net per-capita amount where  $S$  is the total number of states. Accounting for state revenue leads to the bundle:

$$\bar{b} = \sum_{j=1}^S \frac{(\tau_j y_j + t_j)}{S} = \bar{\tau y} + \bar{t}$$

The impact on state  $j$ 's current transfers in this case is:

$$\Delta t_j = [\bar{b} - b_j] + [\bar{\tau y} - \tau_j y_j]$$

Note that the change in a state's net transfer depends on how much it receives *and* its tax revenues (relative to the mean). This means a state could lose *more* than what it currently receives if it raises more revenues than its peers.

We report the simulation results as a share of current transfers, which translates into a net tax or subsidy rate. If transfers fall (increase), the state will face a net tax (subsidy).

Figure 10 presents the results for 2018 visually. Two observations stand out. First, both simulations show that the flow of resources looks significantly different than the current levels. Second, the two simulations create *different* winners and losers, suggesting substantial fiscal capacity gaps. Equalizing per-capita transfers (Panel A) taxes Northern, River Nile, and North Kordofan but notably subsidizes Khartoum. Recall that while Khartoum received the highest total transfer, the state's large population led to a relatively low per-capita amount. As expected, the Darfur states receive the most in net subsidies. West Darfur's -92 percent tax rate means the central government would need to double its total transfer to lift the state's public goods and services to the national average.

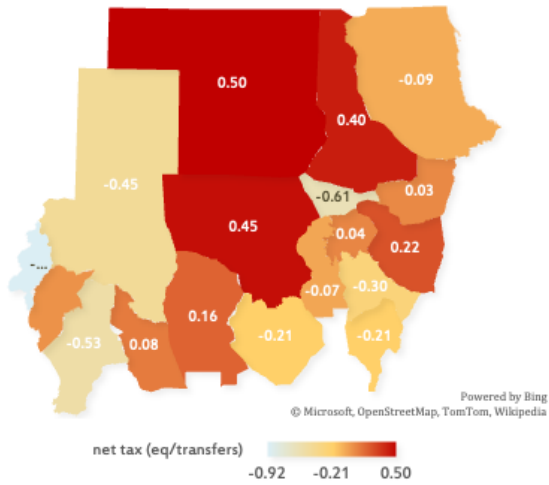
Equalizing the public bundle (Panel B) expands the scale of transfers, giving more to states with the lowest capacity to raise revenue and deliver services. For example, West Darfur would now receive three times its current transfer. Beyond that, most states in the South and Central benefit. We note that Al Jazeera – one of the wealthier states – is predicted to gain from this redistribution. However, while the state receives the average transfer, it lags in raising revenues.

A striking observation in this scenario is that nearly all of the resources redistributed come from four states: Khartoum, Northern, River Nile, and North Kurdufan. Khartoum is taxed more heavily, by an order of magnitude, than the others because it vastly outperforms in own-revenue collection. Note, however, that Khartoum's fortunes exhibit a dramatic shift from the first to the second simulation. Because the state finances most of its spending from own revenues, it loses more than (twice) what it receives from the central government.

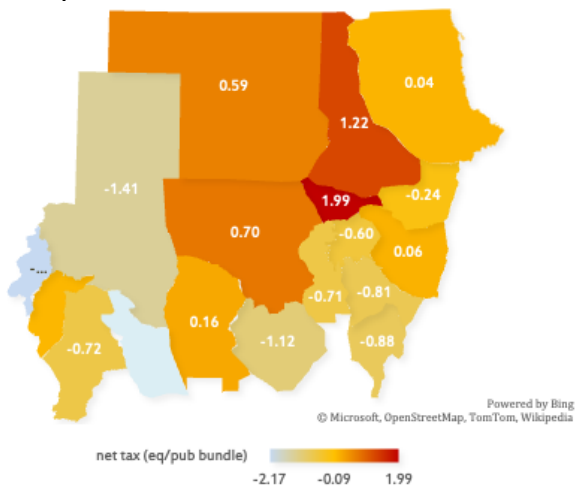
One extension of these simulations would be to develop a transfer scheme to achieve the socially-desirable amount of redistribution. The optimal set of per-capita transfers lies between an equal amount for all states and equalizing benefits. Whether the current formula is sufficient remains unclear. It is likely that, if adequately implemented, central government transfers would go a long way toward equalizing per-capita public goods. However, data limitations hinder such a firm conclusion.

## Figure 10. Simulated Transfer Schemes – Net “Tax” Rates

Panel A: Equal Per-Capita Transfers



Panel B: Equal Public Bundle



## 7. Discussion and Conclusion

### Optimal Number of States

At independence, Sudan inherited a system with a central government, six regional governments (in



the North, and a plethora of districts and councils that exercised significant control over local matters. Since then, fiscal federalism ebbed and waned, but the number of administrative units in the country consistently increased. The most active was the Ingaz regime, which lost the South, but tripled the number of remaining states and sharply increased districts (Table 6). This growth should not be conflated with increasing local control, however. An apt description of reforms over time is what the government giveth with one hand, it taketh with another. Under Nimeiri, for example, local elections determined council membership, but that did not translate to representation. De-facto, councils served to "promote and consolidate the political aims and ideology of the [...] regime" (Vaughan 2010). Ultimately, one would be hard-pressed to find any consistency in the fiscal, political, and executive federalism reforms over time.

**Table 6. Regional, Provincial and Local Administrative Units, \* 1989-2019**

Year	States	Districts	Localities
1989	6	18	
1994	16	65	133
2019	18	90	189

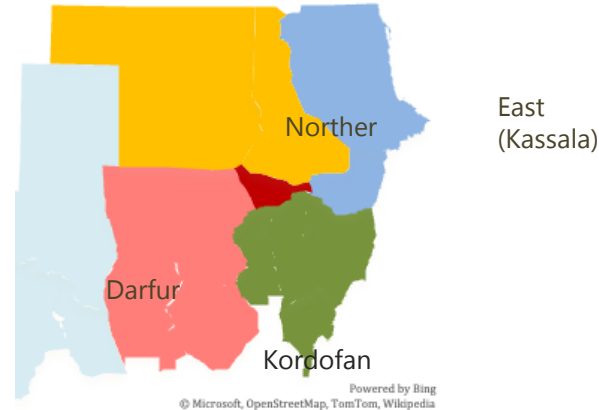
Source: ElBattahani and Gadalkarim (2017).

The cycle of autocracy and short-lived democracy in Sudan and the resulting haphazard changes in the design of the fiscal federalism warrant reconsideration of the original six regions of Sudan – Khartoum, Northern, East (Kassala), Central (Blue Nile), Darfur, and Kordofan.<sup>24</sup> Figure 11 shows the resulting geographic boundaries. The byproducts of breaking up these regional governments were multiple bureaucratic layers and fiscally weaker administrative units. Consequently, the advantage of reverting back centers on the more robust fiscal capacity and leaner bureaucracy of the consolidated regions-cum-localities, compared to the state-cum-localities. However, there are risks. At issue is whether improved local fiscal capacity and bureaucratic efficiencies would increase the government's ability to enhance horizontal equity and correct the past historical injustices across the states. It seems plausible that six regions – mega states – would reduce the ability of actors to engage in ethnic mobilization if, collectively, they mitigate against a single dominant group holding power. In this case, one could make a compelling argument for Sudan to revert to the original regional governments.

A deeper analysis of the viability of the original (or any other) configuration of states requires information on the *scale* of public goods, the distribution of preferences for public goods, and the desired amount of redistribution (*i.e.*, the social welfare function). By scale, we mean the geographic boundaries of public benefits. Consider, for example, fire protection (local), social welfare and highways (regional), and national defense (national). Efficient provision dictates a different level of government would provide each. The issue is which public goods should the state/province provide.

<sup>24</sup> We thank Ibrahim Elbadawi for raising the question.

**Figure 11. The Original States, Sudan**



In practice, reducing the number of states would eliminate redundancy and shrink the multiple bureaucratic layers that developed as the number of administrative units grew. As a result, the effect on public service provision efficiency is likely to improve due to lower per-unit costs of administering programs. However, *if* preferences differ across states, public goods provision would become less efficient as free-riding is less costly in more-diverse communities. Ultimately, the optimal size of a jurisdiction depends on the relative size of each margin.

More critical than the number and size of jurisdictions is their ethnic composition, however. Reducing the number of states could increase the solidarity among the elites, as happened in Darfur and Kordofan regions during the Nueri regime. Greater autonomy to manage their affairs resulted in a diverse government representing all ethnic groups. For example, the cabinet of the Darfur Regional Government led by Ahmed Ibrahim Diraige had members of the Fur, Zaghawa, Berti, Fallata, Massalit, and Arab tribes. Such an outcome would emerge if conflict is fueled by limited information about others and ethnic diversity fosters familiarity and cooperation. We cannot, however, ignore the potential for conflict arising from inequities (real or perceived) in access to resources and political power. The empirical evidence overwhelmingly favors the latter hypothesis, suggesting that the negative impact of diversity on public goods provision is an empirical regularity (Alesina and La Ferrara 2005). This relationship is consistent across ethnolinguistic, religious, and racial diversity in settings as diverse as India (Banerjee and Somanathan 2007), the United States (Alesina *et al.* 1999), and Kenya (Miguel, 2004). The implication is clear: smaller, more homogenous states with some measure of self-governance will be more cohesive.

The result that ethnic diversity reduces public goods is overwhelming but not absolute. Bharathi *et al.* (2020) show that accounting for a jurisdiction's geographical scale and the nature of local

politics overturns the result in India<sup>25</sup>. They find that, at the village level, caste diversity is positively associated with public goods. Caste divisions may be rigid, they argue, but inter-group cooperation is possible (perhaps even necessary) because each has different and *complementary* skills.

Yet a different channel moderates the relationship in Tanzania, where ethnically diverse communities successfully navigate collection-action problems. It was Nyerere's vision that the newly-created country have a common identity, and he embarked on a program – Ujamaa – to build the nation. Ujamaa failed in reforming the economy but succeeded in *depoliticizing* ethnicity. Nation-building was based on four pillars: a common language, reform of public school curricula to emphasize shared values and culture, reform of local government institutions to abrogate tribal laws, and an equitable distribution of public goods and services. Using data from 1996 to 2002, Miguel (2004) presents evidence of the program's success. Comparing similar communities on either side of the Kenya-Tanzania border, he finds the expected results in Kenya but a positive relationship between ethnic diversity and public goods provision in Tanzania. He concludes: "serious nation-building reforms can successfully bridge social divisions and affect important economic outcomes, like public goods provision." Whether Tanzania's nation-building experience belongs to a bygone era is an open question. However, the near-universal participation of Sudanese in the December Revolution bodes well for their potential to overcome ethnic demarcations, despite the monumental challenges.

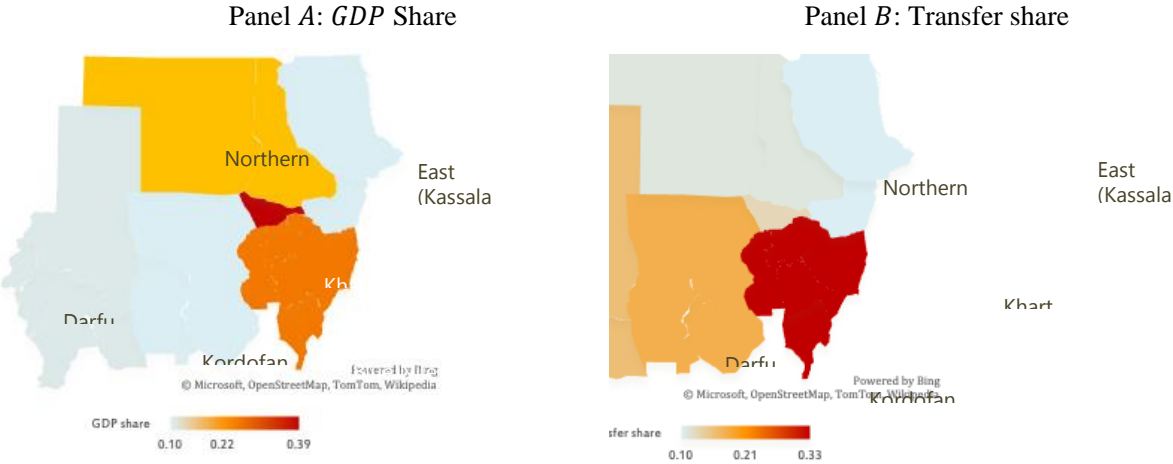
Previous reforms of local government in Sudan provide anecdotal evidence that tribal affiliation, and its accordant effects, are hard to dislodge. Or that none of the reforms appreciated the value of a national identity for governance. Indeed, the 1971 Local Government Act abolished native administration and thereby downgraded traditional Authority, but did so within the framework of "*unity in diversity*." As a result, reforms failed to dislodge the notion that councils served tribes rather than the locality. In fact, tribe often trumped other considerations. For example, the reconstituted People's Councils were, in principle, territorial units, but commonly "councils that amalgamated rival ethnic groups *collapsed* under the weight of these rivalries." Another example comes from Al Jazira, where voting data showed *no two candidates from the same ethnicity competing for the same [Council] seat to avoid splitting the vote*. And, de facto, the largest tribe determined the council's makeup (Vaughan 2010). Absent a mechanism to address the resonance of tribal affiliation in the context of governance, it is hard to envision how changing the number of states would improve outcomes. As a result, the potential for regimes like the Ingaz to exploit ethnic identity for political gain would remain as potent as ever.

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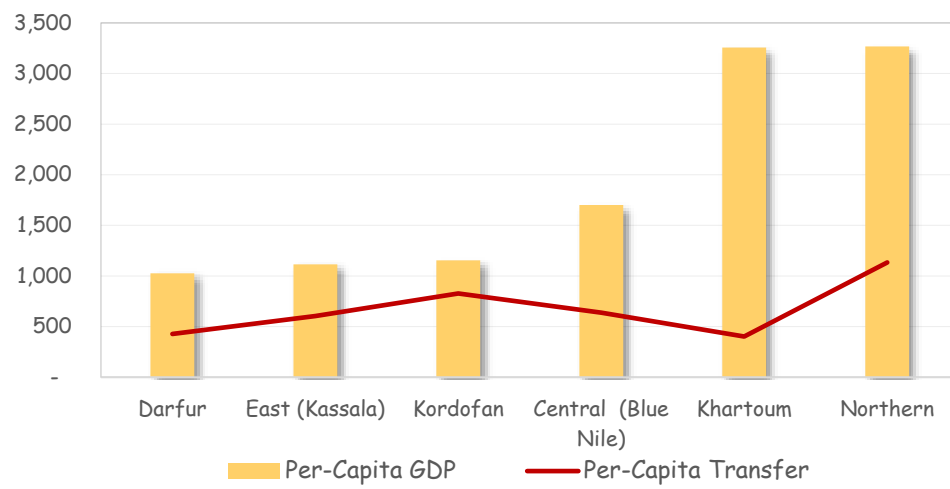
<sup>25</sup> At the local level, members of the village-level governing body (*gram panchayats* (GPs) have considerable discretion in the distribution of resources and show considerable preference for their own caste ([Besley et al. 2004](#), 2012).

Data show that reverting to the original state boundaries results in a slightly more equitable distribution of transfers but does little to address the overall regressivity of fiscal transfers. We find two states (Khartoum and Central) would account for nearly two-thirds of the country's GDP and almost half of all total transfers (Figure 12). And per-capita transfers would continue to be regressive: Panel C shows little difference across states ranked by GDP but a higher transfer to one of the wealthiest states (Northern). At the same time, we would have inequities within states in social and economic metrics. For example, measures of economic well-being (*HDI* and *IWI*) show stark gaps in Central: Al Gadaref and White Nile lag behind Al Jazeira (Figures 5B and 5C). The differences in the composition of expenditures are more relevant to governance since they point to residents' preferences. Central state again stands out: the share of wages ranged between 31 (El Gadarif) and 69 (Blue Nile) percent, while the share of goods and services was 15 (White Nile) to 31 (El Gadarif) percent. The state could allow each jurisdiction to determine its spending, which begs the question: how would this structure differ from the status quo? Alternatively, the state needs to devise a mechanism to aggregate preferences and determine the set of goods and services. Ultimately any change to state boundaries requires a re-thinking of the fiscal federalism system as well.

**Figure 12. Original Administrative Units 2018 Outcomes**



Panel C: Per-Capita *GDP* and Transfers



The cycle of autocracy and short-lived democracy in Sudan and the resulting haphazard changes in the design of the fiscal federalism warrant reconsideration of the original six regions of Sudan – Khartoum, Northern, East (Kassala), Central (Blue Nile), Darfur, and Kordofan.<sup>26</sup> The byproducts of breaking up these regional governments were multiple bureaucratic layers and fiscally weaker administrative units. Therefore, the advantage of reverting back centers on the more robust fiscal capacity and leaner bureaucracy of the consolidated regions-cum-localities, compared to the state-cum-localities. However, there are risks. At issue is whether improved local fiscal capacity and bureaucratic efficiencies would increase the government’s ability to enhance horizontal equity and correct the past historical injustices across the states. It seems plausible that six regions – mega states – would reduce the ability of actors to engage in ethnic mobilization if, collectively, they mitigate against a single dominant group holding power.

## Conclusion

Three revolutions and a protracted war that extended for more than 60 years and cost treasure and lives have exacerbated the monumental challenges to building the State in Sudan. At the root of conflict are 1) an ethnically diverse people with a history of regional and tribal independence, and 2) the vast regional gulf in resources and standards of living. Addressing the unequal distribution of resources is hardly an easy task, but it is one for which evidence exists. In that vein, policymakers would do well to set wealth-sharing priorities and design a fiscal transfer scheme consistent with that goal. Such a scheme would also need to address the poor targeting to states’ level of need in the current system. Better alignment of the transfers formula with *HDI* indicators would most certainly improve social welfare. More likely, however, progress would require even *more* redistribution: raising the *relative* standard of living in lagging states requires more investment than any formula-based set of transfers.

<sup>26</sup> We thank Ibrahim Elbadawi for raising the question.

More broadly, the government faces a consistent demand of the people across states and regions for better delivery of the most basic public services – clean water, electricity, and education. Meeting these priorities requires investment particularly in developing a system of fiscal federalism that will enable localities and states to raise their resources for local development. The current system with 18 states and more than 500 localities has birthed an unwieldy bureaucracy (with no improvement in service delivery or citizen engagement). We argue a strong case can be made for reverting to the original six regional governments – Darfur, Kordofan, Eastern Sudan, Khartoum, Blue Nile and northern Sudan – to shrink the bureaucracy and shift resources to more productive uses.

Reducing the number of states could arguably yield additional benefits – improve ethnic cohesion. We note the experience of the Darfur and Kordofan regions during the Nueri regime as an example. The caveat is that reviving the original six states in Sudan without addressing the regressivity of fiscal transfers would achieve little and undermine any gains in social cohesion.

Sudan's twin challenges – the lack of a shared national identity and persistent and substantial inequities across states – are common among its neighbors. Tanzania's experience on this front may prove helpful. Nyere's project to unify the country succeeded arguably *because* of its sequencing. The regime initially abolished all local institutions of governance in favor of strict centralized control. The government then set about defining a national identity and equalizing the distribution of public investments in education, health, and infrastructure before devolving powers back to local governments. The lesson for Sudan is that it might do well to prioritize political socialization and equity before expanding regional powers. The current structure of fiscal relations may render this approach moot, but it strikes us as worthy of consideration.

We end with an urgent call for more and better data. The debate on the design of a system of fiscal federalism, including intergovernmental transfers and the degree of local revenue and spending autonomy, remains underdeveloped and needs much more research.

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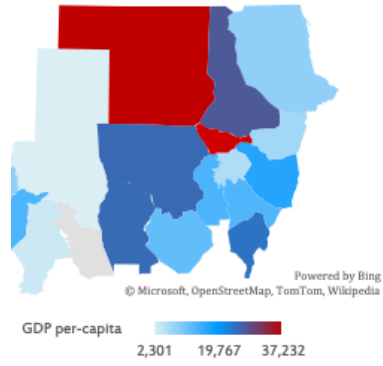
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## Appendix A

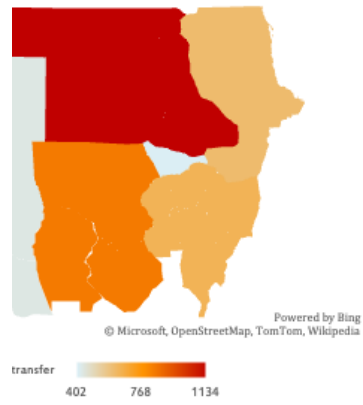
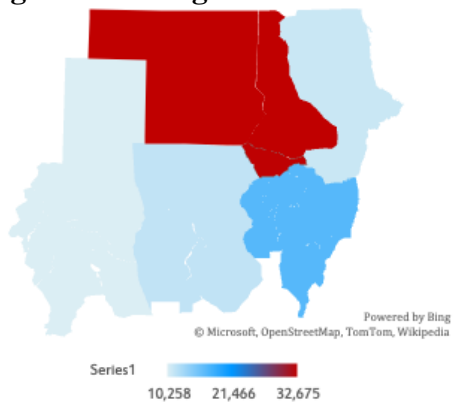
**Table A.1. Summary Statistics (Means) 2012-2018**

State	Population	Poverty	HDI	HDI Health	HDI Income	HDI Education	Urban	Fed Transfers	Own Revenue	Expenditures
Al Gedarif	2,036,620	74.08	0.45	0.67	0.50	0.27	52.7	1613.2	1423.1	3087.6
Al Gezira	4,581,893	24.64	0.54	0.72	0.63	0.35	51.2	3969.4	2461.4	6743.2
Blue Nile	1,103,532	49.30	0.42	0.60	0.54	0.22	50.6	959.6	338.7	2513.12
Central Darfur*	1,469,237	83.32	0.42	0.60	0.47	0.22	53.6	881.1	469.7	1497.9
East Darfur*	1,000,291	84.35	0.44	0.65	0.47	0.27	52.5	690.7	382.5	1248.4
Kassala	2,363,842	63.46	0.45	0.71	0.53	0.25	53.7	1993.1	1207.0	3641.4
Khartoum	7,620,088	14.24	0.62	0.72	0.70	0.47	51.7	4400.2	15,807.9	19267.6
North Darfur	2,386,207	93.74	0.47	0.76	0.65	0.41	51.5	1699.2	654.4	2600.0
North Kordofan	1,843,956	81.33	0.46	0.66	0.46	0.33	52.8	2569.7	1814.1	4565.8
Northern	838,509	3.65	0.62	0.71	0.49	0.28	50.3	1707.6	2116.0	3788.4
Red Sea	1,311,494	55.38	0.51	0.76	0.71	0.43	56.9	1183.6	1793.3	2888.7
River Nile	1,411,179	16.64	0.59	0.71	0.54	0.35	48.5	1650.7	1627.2	3454.6
Sinnar	1,751,826	53.70	0.49	0.71	0.56	0.30	51.3	1403.0	1260.1	2680.0
South Darfur	3,270,304	84.35	0.44	0.65	0.47	0.27	52.5	1887.3	872.6	3002.8
South Kordofan	1,677,274	87.00	0.43	0.67	0.48	0.25	53.6	2280.9	571.2	3749.8
West Darfur	1,588,981	82.98	0.44	0.66	0.47	0.27	54.8	764.2	290.0	956.9
West Kordofan*	1,566,447	85.58	0.43	0.67	0.46	0.25	53.0	1506.4	734.0	2567.9
White Nile	2,817,001	59.32	0.49	0.67	0.55	0.32	51.9	2311.2	1369.5	4443.3
Total	2,257,704	60.95	0.48	0.68	0.54	0.31	52.4	1859.5	1955.2	4038.8

**Figure A.1. State Per-Capita GDP, Current**



**Figure A.2. Original States**



## Appendix B

### **Digitization, Advance Technology, and Revenue Mobilization**

As a policy prescription without simulation, it is worth advancing the debate on digitization to mobilize state and federal government revenues in Sudan. There are regional experiences to be drawn from in this debate. While there is extensive literature examining the role of *ICT* and digitalization in raising productivity and growth, digitalization and tax revenues have been relatively understudied. This is despite revenues being one of the key drivers of what could be the most significant change to international tax rules in a century (Hanrahan, 2020). Digital transformation improves organizational resilience. *ICT* and digitization are trickling down to the global South in Africa and Asia. Countries can mimic and share learning experiences. Particularly for countries with revenue issues and inefficiency in collecting tax revenues due to institutional impediments and corruption.

The tax system in Sudan is characterized by fraud, irregularity, inefficiency, high collection charges, and smaller amounts of taxes raised to meet government commitments. Digitization of tax collection methods and e-invoices can mitigate tax evasion within the country or cross-bordering trade and services. The study recommended that the tax authority office in Sudan follow other countries like Kenya and orchestrate a public campaign to inform the taxpayer about the proposed new integrated digital system and simplify the electronic payment system. The call for a new digital system needs a well-trained labor force and more local tax collection offices in urban and rural areas. In India, for example, calls for greater surveillance on the part of tax authorities to identify loopholes in tax administration and strengthen the administrative capacity to govern the taxation system effectively (Mallick, 2020). Sudan should follow a similar approach to have better internal controls to monitor and close bureaucratic loopholes to increase efficiency.

Businesses are getting smarter with analytics, and tax agencies across the globe are increasingly relying on digital methods to mobilize revenue, taking advantage of an unprecedented amount of citizens' Data flowing between systems, businesses, enterprises, institutions, and governments (Gichohi, 2020). Kenya exerted efforts to increase public revenue by introducing excise duty on mobile money transfers, seeing the VAT bill passed and operationalized with campaigns encouraging Kenyans to pay taxes (Mosomi, 2015). The Government of Sudan can learn from the Kenya Revenue Authority's implemented digital transformation that drastically enhances the Authority's performance in a rapidly changing environment. Cadres must be capable of data mining, modeling, and artificial intelligence. According to Gichohi, this would see the enterprise leverage Data warehousing, business intelligence, and advanced analytical skills and tools to transform Data management and utilization. Gichohi had shown that a government revenue mobilization authority could change and leverage its digital systems, big data, and advanced analytics to enhance revenue mobilization for the government.

In a similar example that could benefit Sudan, Bangladesh successfully committed to increasing tax revenues and achieving fiscal discipline to increase self-reliance (Azad, 2017). In recent years, the government has initiated some administrative and policy reforms in the tax system, resulting in a modest improvement in the tax-to-GDP ratio due to digitization (Azad, 2017). However, the performance is still unsatisfactory compared to other countries at a similar stage of economic development. However, the technology will pave the way to generating more revenue. Using data on 164 countries (including both developed and developing countries) for the period 1995–2013 and non-resource tax revenue, Gnanon (2018) shows when a government reduces the internet gap, it experiences, over the short to medium term, a rise in non-resource tax revenue. The results also show that low-income countries (LICs) obtain the most significant positive impact by reducing this internet gap.

Furthermore, convergence in using the digital spectrum lessens the gap between regions within a country. Therefore, it will enhance revenue collection methods. Furthermore, (Mosomi, 2015) examines the factors that increase tax efficiency and shows digitizing tax records promotes transparency and credibility of records. Further, implementing an integrated tax-collection system ensures proper accounting for taxes raised by the agencies. Finally, organizational restructuring by increasing the number of offices and agents of tax collection boosts tax collections while embracing electronic payment methods to make it easy for taxpayers to make payments.

Sudan is experiencing unprecedented levels of cross-border smuggling of goods and precious metals. Those behaviors encourage tax evasion. Kitsios et al. (2020; 2019) argue that using digital technologies offers an opportunity to reduce fraud and increase government revenue. They presented evidence that (i) cross-border trade tax fraud is non-trivial and prevalent in many countries; (ii) such fraud can be alleviated by the use of digital technologies at the border; and (iii) potential revenue gains of digitalization from reducing trade fraud could be substantial. Halving the distance to the digitalization frontier could raise revenues by over 1.5 percent of GDP in low-income developing countries Kitsios et al. (2020; 2019).

In contrast to Kitsios' argument, ICT infrastructures and governance quality in India have no significant positive influences on overall tax revenue mobilization. This could be associated with inherent administrative and bureaucratic failures and inefficiencies, characterizing low tax productivity for the entire period (Mallick, 2020). Moreover, Ghana's government institutions have initiated using information technologies to raise revenue. For example, the Accra Metropolitan Assembly (AMA), the local government institution that introduced point-of-sale devices for collecting taxes in 2012 (Adu, 2020). However, it was found that the intervention was a partial failure because of its inability to block avenues for bribery and its inability to induce a significant rise in tax revenue (Adu, 2020).

Bellon et al. (2019) study examines the impact of e-invoicing on firm tax compliance and performance using administrative tax data and quasi-experimental variation in the rollout of VAT electronic invoicing in Peru. They found that e-invoicing increases reported sales, purchases, and value-added by over 5 percent in the first year after adoption Bellon et al. (2019). The impact is concentrated among smaller firms and sectors with higher rates of non-compliance, suggesting that e-invoicing enhances compliance by lowering compliance costs and strengthening deterrence Bellon et al. (2019). Applying digital tools such as e-invoicing should be complemented by other reforms to improve revenue mobilization.