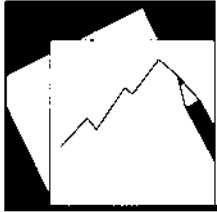


Working Paper

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Fiscal Adjustment in Sudan Size, Speed, and Composition

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IMF Working Paper

Middle East and Central Asia Department

Fiscal Adjustment in Sudan

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Abstract

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The paper aims to identify the optimal size, speed and composition of the medium-term fiscal adjustment in the context of Sudan's limited oil reserves. The permanently sustainable non-oil primary balance approach suggests the need for significant fiscal adjustment over the medium term, requiring a widening of the tax base. Cross-country comparisons highlight VAT and personal income tax (as well as tax administration) as key areas for reform. The paper also suggests the need for complementary expenditure-side measures in the areas of petroleum pricing and anchoring fiscal policy in non-oil indicators.

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Keywords: Fiscal reforms, intertemporal budget constraint, oil revenue

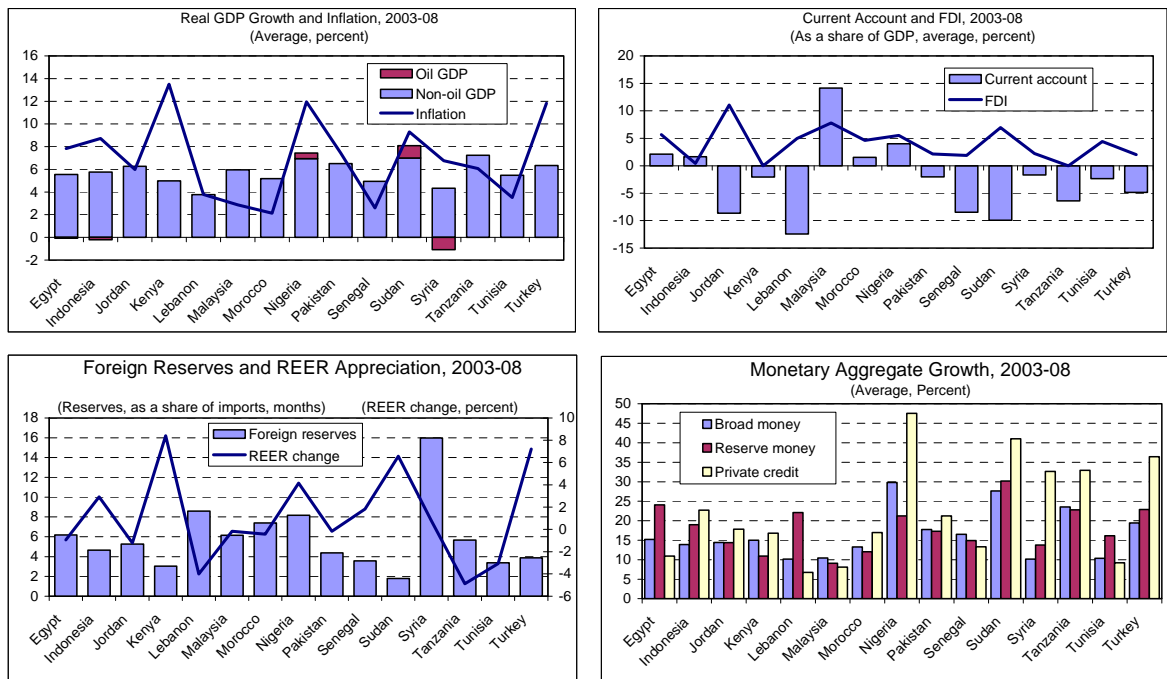
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I. INTRODUCTION AND BACKGROUND

The Sudanese economy has emerged as one of the fastest growing economies in the region over the last five years (Figure 1). Real GDP growth averaged 8 percent during 2004–08 with single digit inflation and a relatively stable currency, although preserving the latter often resulted in large movements in foreign exchange reserves (following commensurate changes in oil prices).

Figure 1. Recent Evolution of Macroeconomic Indicators—Sudan and Comparators



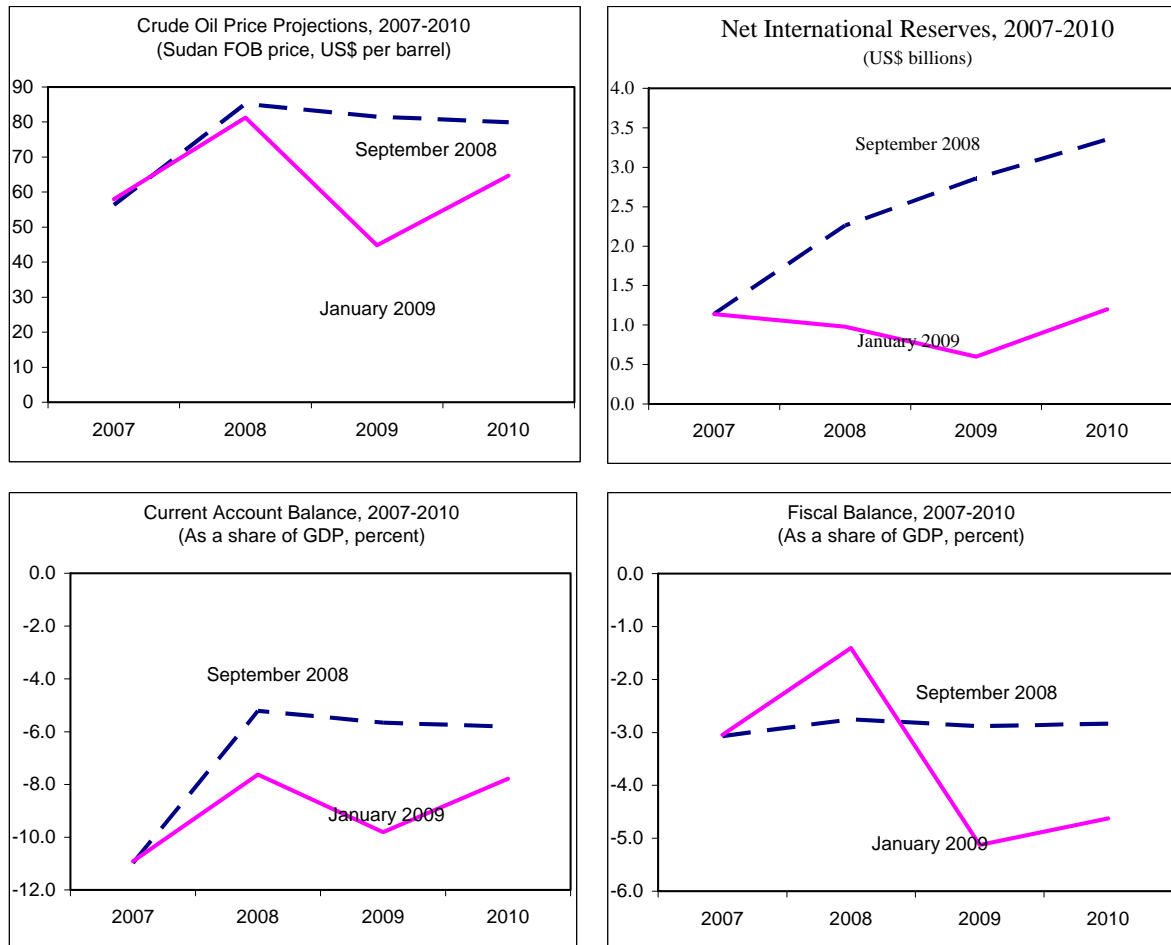
However, Sudan’s macroeconomy has become increasingly dependent on oil over the last decade. In real terms, the oil sector accounts for only about 10 percent of Sudan’s overall GDP—small compared with agriculture and services, which account for 35 percent and 50 percent, respectively, of real output.¹ However, its impact on Sudan’s external and fiscal balances in recent years has been pivotal: oil now accounts for about 95 percent of Sudan’s exports and over half of all government revenue.² Thus, Sudan’s macroeconomy has become highly dependent on oil sector developments, especially the world price of oil. For instance, within six months of the August-2008 reversal in the rising world oil price trend, foreign exchange reserves had more than halved to an uncomfortably low level of 2 weeks of imports.

¹ Appendix I details the vital statistics on Sudan’s oil sector.

² There has also been a sizeable influx of foreign direct investment (FDI) in the oil sector; overall FDI climbed from about 3.5 percent of GDP in 1997 to almost 10 percent of GDP in 2008. In the wake of the global financial crisis, FDI and other inflows are expected to slow in 2009–10.

The 2009 fiscal deficit of the Government of National Unity (GoNU) is, similarly, expected to widen notably relative to 2008 (Figure 2).

Figure 2. Impact of the Oil Price Decline in late 2008 on Sudan's Headline Indicators



Fiscal revenues have begun to reflect the depletion in oil reserves while expenditure rigidities have emerged due to fiscal decentralization.³ Sudan's proven oil reserves are limited—good for about 20 years at current production rates—and the faster-than-expected maturity of the higher-quality Nile blend wells since 2006 has called into question the sustainability of fiscal and external balances going forward. On the expenditure side, fiscal federalism has limited central government control over a large part of expenditures, i.e. automatic transfers to subnational governments.⁴ While Sudan first implemented a federal

³ The impact of rising transfers on the federal budget deficit was cushioned somewhat by the contemporaneous increase in oil revenues.

⁴ Appendix II offers a detailed description of the current fiscal federalism arrangements in Sudan.

fiscal structure in the mid-1990s, decentralization accelerated after the 2005 Comprehensive Peace Agreement (CPA), with subnational transfers surging from 1 percent to 10 percent of GDP during 2003–08. Although the increased devolution of resources has been indispensable for sustaining peace, it has exacerbated the procyclicality of general government fiscal policy, raised concerns over the quality of subnational spending, and become a source of contingent fiscal risk for the central government.⁵

Moreover, Sudan has limited access to concessional external finance and faces high political uncertainty. Sudan’s access to concessional foreign loans has been adversely affected by its arrears status to bilateral and multilateral creditors, including the Fund. There is also uncertainty over the outcome of parliamentary and presidential elections in 2010, and the status of the South following the 2011 referendum. A large unresolved (external) public debt burden, and security and peace-related spending pressures, further reinforce the **complexity** of the fiscal situation.

Although Sudan’s particular risks suggest the need for a larger fiscal buffer, actual fiscal performance since 2000 has generally lagged that of other oil producing countries. Appendix III records Sudan’s fiscal performance over the last decade vis-à-vis a group of 18 oil producers. Sudan’s non-oil revenues—at 10 percent of non-oil GDP—were barely half the group median and the non-oil tax/GDP ratio fell to 5 percent in 2008. The positive gap between Sudan’s non-oil primary balance (NOPB) and its comparators began narrowing in 2005 (the year the CPA was signed) and was eliminated by 2008. Over this period, current expenditure tripled, to over 20 percent of GDP, financed mainly by oil revenues. With gross bank financing largely offset by net oil revenue stabilization account (ORSA) savings, and foreign financing averaging less than ½ percent of GDP, resort to unconventional promissory notes and outright domestic arrears was also common.

A number of important structural fiscal reforms were undertaken in the context of successive IMF staff-monitored programs, but the pace and quality of implementation has been mixed. The corporate income tax regime was simplified in 2008, and the granting of income tax holidays to new investors was abolished.⁶ The stock of outstanding VAT and PIT exemptions, however, remains large. Revenue administration reforms have been impressive on paper, but have not translated into revenue yield, due to the lack of a comprehensive modernization and restructuring strategy. PFM reforms have centered on budget classification and commitment control, but multi-year budget planning and anchoring of fiscal policy in non-oil indicators have been elusive goals. Despite a large one-time adjustment in fuel prices in 2006, the fuel subsidy cost over 4 percent of GDP in 2007–08,

⁵ In late 2006–early 2007, when oil revenues (and subnational transfers) undershot expectations, sizeable state-level fiscal deficits emerged, which were met partly through ad-hoc state and local government levies and partly through outright default and/or arrears that were eventually passed on to the central government.

⁶ Appendix IV summarizes the structure of the tax system in Sudan as on January 1, 2009.

and the budget lacked social safety net provisions to cost-effectively guard the poor against rising food prices in 2008. Actual fiscal policy has been highly procyclical, and oil windfalls largely spent despite the existence of an oil revenue stabilization account.

Given its dependence on finite oil reserves, vulnerability to commodity price shocks, miniscule fiscal buffers relative to political and-economic risks, and substantial structural fiscal challenges, Sudan needs a comprehensive fiscal adjustment going forward. This paper hopes to sharpen the authorities' understanding of the size and nature of this adjustment and how it can be facilitated by a well-prioritized fiscal reform program. The remaining paper is organized as follows: *Section II* employs two workhorse frameworks, the permanently sustainable non-oil primary balance approach, and a general equilibrium neoclassical growth model, to quantify the fiscal adjustment needed in Sudan over the medium term. *Section III* presents a detailed cross-country comparison of Sudan's fiscal structure with neighboring countries and complements the analysis in Section II. *Section IV* summarizes the policy recommendations, and concludes.

II. QUANTIFYING THE FISCAL ADJUSTMENT: SIZE, SPEED AND COMPOSITION

To calculate the required fiscal effort, we invoke the standard framework of an intertemporal optimization problem of a finite, natural resource economy bearing some initial level of public debt. Based on available information, Sudan's oil production is projected to peak in 2011 and then decline to below 2009 levels by 2015. Moreover, Sudan's public debt stands at above 80 percent of GDP. Under the twin assumptions of consumption smoothing and intertemporal solvency, sub-section A solves for a sustainable NOPB trajectory—scaled to non-oil GDP (NOGDP) under various public debt relief and speed of adjustment scenarios. Comparing this trajectory with the end-2008 NOPB-to-NOGDP ratio yields a measure of the requisite medium and long-term adjustment. Sub-section B complements this analysis by focusing on the tax side and examining the required increase in tax rates to balance the government's intertemporal budget constraint using a simple dynamic general equilibrium growth model. The key additional consideration here is the deleterious impact of high income taxation on private incentives to invest, with the attendant consequences for growth.

A. The Permanently Sustainable Non-Oil Primary Balance (NOPB) Approach

The main idea of this “annuity” model—*a la* Barnett and Ossowski (2003) and Carcillo et al (2007), is to solve for a smooth government primary (non-oil) spending/non-oil GDP path that is consistent with intertemporal solvency and intergenerational equity. In computing this path, the model takes into account the present value of future net oil revenues, non-oil GDP

growth and interest rate projections, non-oil revenue and grants outlook, the initial level of serviceable public debt, and the speed of adjustment.⁷

The optimization problem for the government comprises: (i) an intertemporal choice of the size of the non-oil primary fiscal balance; and (ii) an intratemporal choice of expenditure and (lump-sum) taxes consistent with that balance, provided the exogenously given path of oil revenue and interest rate. The government's optimization problem can be described as follows:

$$\max_G \sum_{s=t}^{\infty} \beta^{s-t} \ln(G_t) \quad (\text{A1})$$

$$\text{subject to} \quad B_t = RB_{t-1} + G_t - T_t - Z_t, \quad (\text{A2})$$

and

$$\lim_{s \rightarrow \infty} R^{-s} B_{t+s} = 0 \quad (\text{A3})$$

where β is the subjective discount factor of government, G_t is primary fiscal expenditure at period t , B_t is net government debt at the end of period t , $R = 1 + r$, with r being the current interest rate assumed to be constant, and T_t and Z_t are non-oil revenue and oil revenue, respectively.

The optimal level of government expenditure at period t , given the path of non-oil tax revenue and oil revenue after period t , then obtains as:

$$G_t = r(1 - \beta) \left[\sum_{j=0}^{\infty} R^{-j} Z_{t+j} + \sum_{j=0}^{\infty} R^{-j} T_{t+j} - B_{t-1} \right] \quad (\text{A4})$$

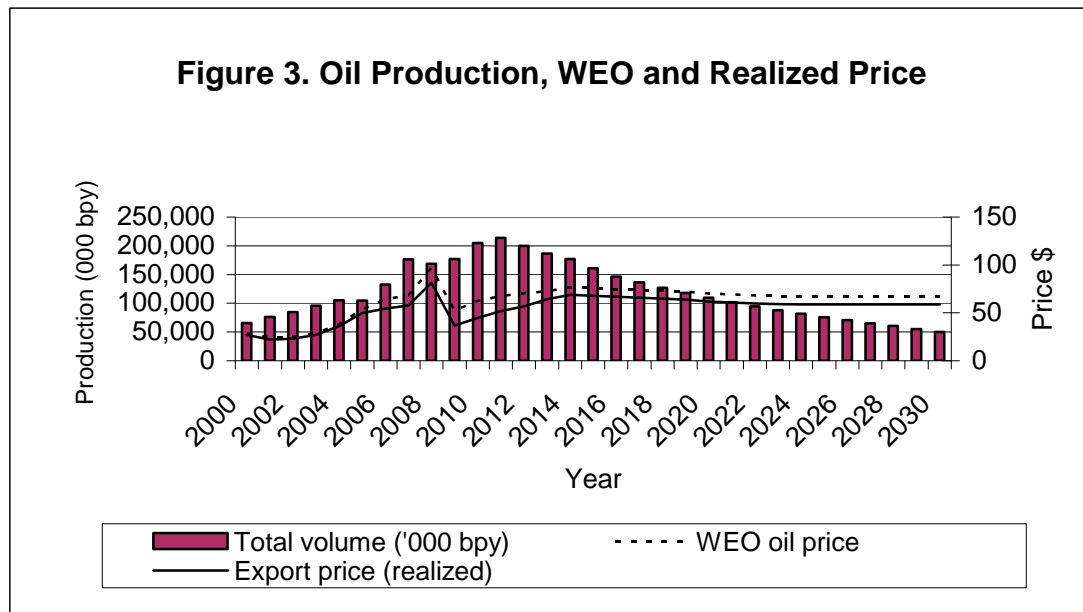
The version of the model used for simulations reported below specifies a social welfare function in which the decision variable is non-oil government spending/non-oil GDP.

Thus the resulting solution for government spending smoothes its ratio to non-oil GDP, itself growing at a positive rate g . The implication for the above solution is that the rate of spending out of net wealth must now account for the growth in non-oil GDP, so that " $r(1-\beta)$ " is replaced by $(r-g)/(1-\beta)$.

1. The key assumptions underpinning the model are as follows:

⁷ Some simplifying assumptions are: (i) economic welfare to be maximized depends only on government expenditure: i.e., taxation does not create any distortions and market imperfections; (ii) the interest rate which the government faces is exogenous (price taker assumption); (iii) there is no uncertainty about the future; (iv) the government keeps its commitment in the future (no time inconsistency problem).

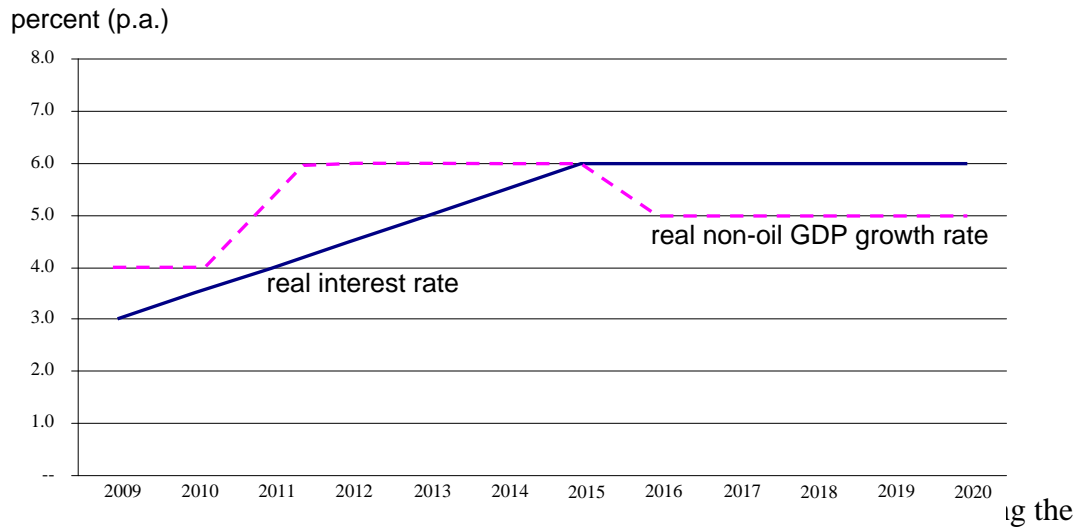
(i) **Oil production and prices:** Annual oil production is expected to peak in 2011–12 and then fall progressively until oil wealth – estimated at 5–6 bn bbl at end-2008—is exhausted by 2030. Oil prices are assumed to be in line with WEO projections; the usual discounts are assumed for both Nile and Dar blend (US\$5/bl for Nile blend and US\$15–20/bl for Dar, respectively)—Figure 3). Total gross oil revenue is projected by multiplying the block by block production (whether exported or sold to domestic refineries) with the realized prices (after discounts) of respective oil blend. “Net” oil revenue is then calculated by subtracting pipeline and administrative fees; and the mandated shares of oil producing states, Government of Southern Sudan (GoSS) and Northern states.



(ii) **Growth and interest rates:** Real non-oil GDP growth is expected to average 4 percent a year in 2009–10, and would rise to its historical level of about 6 percent a year from 2011–15—as the impact of the financial crisis withers—before converging to the long-run level of 5 percent a year by 2016. The real interest rate, currently artificially low at 3 percent, is expected to rise gradually to 6 percent by 2015, consistent with continued financial liberalization. Note that the non-oil growth rate exceeds the real interest rate during 2009–2015. This is obviously a condition that cannot last in the long run for that would imply that any level of initial public debt is sustainable (Figure 4).⁸

⁸ Following the discussion in Carcillo et al (2007), the discount factor for future utility is set at $1/(1+\rho)$, where $\rho = (r-n)/(1+n)$, and $r=0.06$ and $n=0.05$ are the long-run real interest rate and non-oil growth rates, respectively.

Figure 4. Growth and Interest Rate Assumptions



ing the requisite adjustment relative to the baseline, no future tax effort is imputed, and the ratio of non-oil revenues and grants to non-oil GDP at end-2008—8.5 percent—is passively projected into the future.

(v) **Speed of adjustment:** To explain how the speed of adjustment affects the solution, consider the hypothetical case in which the model solves a sustainable expenditure path (or equivalently, a sustainable NOPB path, given a constant tax take), implying an adjustment of 1 percent of GDP per annum over the next five years, but no adjustment thereafter. Assume now that given the current fiscal stance, the government feels it can “feasibly” adjust by only 0.5 percent of GDP per annum over the next five years. In order for this feasible trajectory to be sustainable, a larger adjustment in the outer years must be provided. The model permits us to “specify” the speed of adjustment, which in turn determines the degree to which the adjustment is frontloaded or back loaded. We simulate results under four different adjustment speed scenarios: 1 (the case in which adjustment to the sustainable trajectory is instantaneous), 0.50 and 0.25.

(vi) **Initial level of public debt:** Total public debt is assumed at 83 percent of non-oil GDP at end-2008, based on staff’s best estimate of recorded public external and domestic debt. In the absence of any public debt reporting in Sudan, this number may over or understate Sudan’s actual indebtedness. Four different debt relief scenarios are considered. In the case of no debt relief, the entire (100 percent of) the end-2008 debt stock is assumed to be serviced. In the partial relief scenarios, 75 percent, 50 percent and 25 percent of the initial debt stock are taken as serviceable.

The required fiscal adjustment is large, ranging from 4–10 percent of NOGDP, depending on assumptions about debt relief and speed of adjustment.⁹ As can be seen from Table 1, the average required adjustment in the NOPB/NOGDP ratio is 6.7 percentage points over the medium-term and 9.8 percentage points over the long term. In the absence of any debt relief, the required medium and long-term adjustments would be 6.9 and 10 percentage points of NOGDP, which would fall to 6.5 and 9.5 percentage points, respectively, if 75 percent of the debt were written off. The required adjustment over the medium-term would also fall if a lower speed of adjustment were assumed (i.e. adjustment is back-loaded to future generations). For instance, under a 25 percent adjustment per year, the average medium-term adjustment over the various debt scenarios is 4.6 percentage points, compared to 8.6 percentage points for instantaneous adjustment. Slower near-term adjustment naturally raises the required adjustment over the long run, but since the horizon over which this is spread is very long, the increase comes out to only 0.2 percentage points (relative to the required long run adjustment under instantaneous adjustment).

One argument for spending more today out of Sudan’s oil wealth is that returns to public investments are high in Sudan and can significantly raise the non-oil GDP growth rate and government tax takes over the medium to long run. Although the evidence on the effectiveness of government investments suggests that returns might be more lukewarm than public policymakers typically expect (IMF, 2004), the potential for high-return public infrastructure investments in Sudan’s particular case cannot be ignored. The electricity cost reductions emerging from the recently completed Merawi Dam are a case in point.¹⁰ Moreover, there is tremendous scope to expand the rail and road infrastructure to better link hitherto unconnected parts of the country. Indeed, Van der Ploeg and Venables (2008) note that investing oil revenues into public capital rather than financial wealth may be optimal in developing countries where the capital stock is very low and private investment constrained by the high costs imposed by weak infrastructure.

The returns to capital spending are best modeled in a general equilibrium framework, but some insights can be derived from the annuity model. We try to internalize the returns to higher capital spending in the short-term by linking a slower adjustment speed (to accommodate such spending) to higher non-oil growth rates and tax takes over the medium-term. A range of simulations suggest that the size of the required adjustment falls by 1½ – 2 percent of NOGDP, relative to the case when the growth rates were unadjusted. Thus, even under the most optimistic scenario of debt relief, we are left with the need for a substantial

⁹ It is important to note that this high level of adjustment assumes absence of tax base widening.

¹⁰ The cost of the 1,250 MW of electricity produced from the Merawi Dam (completed in March 2009) is around 4 cents/kwh, about half the 7.9 cents/kwh cost of thermal energy (the main source of electricity until Merawi). The cost of this public sector project was US\$ 1.8 bn, of which US\$ 520 million corresponds to funding from China.

medium-term fiscal effort of about 3 percentage points of NOGDP, and a long-term adjustment of about 7 percentage points of NOGDP.

Overall, Sudan faces a substantial medium-term fiscal adjustment need, of about 3 percentage points of NOGDP. While this level of adjustment may be achievable through expenditure rationalization and revenue administration measures, some tax policy measures are likely to be required. Clearly, the required long-term adjustment—at 7-10 percentage points of NOGDP—would be impossible in the absence of major structural change, involving a sharp increase in the government’s non-oil tax take.

B. The Required Tax Increase to Balance the Intertemporal Budget Constraint

Using a dynamic general equilibrium neoclassical growth model, we now simulate the requisite fiscal adjustment in terms of tax rate increases. Thus, adjustment is cast in terms of increase in income and consumption tax rates to balance the intertemporal budget constraint of the government of a small open economy, facing a significant drop in oil revenue in the future.¹¹ The model includes capital accumulation, which is closely related to labor productivity¹² (a good proxy for competitiveness and thus the size of the tax base in the future), so that the differential effects of the “composition” of tax increases can also be investigated.

The model is a simple neoclassical growth model in a small open economy. Households maximize the following utility function:

$$W_0 = \sum_{t=0}^{\infty} \beta^t \left[\ln C_t - \frac{N_t^{1+\phi}}{1+\phi} \right] \quad (\text{A5})$$

subject to the intertemporal budget

$$\text{constraint: } A_{t+1}^d + e_t A_{t+1}^f = (1 + R_t^d (1 - \tau_t^k)) A_t^d + (1 + R_t^f) \Phi_t e_t A_t^f + W_t (1 - \tau_t^w) N_t - (1 + \tau_t^c) C_t \quad (\text{A6})$$

where A is the stock of financial assets bearing rate of return R ; C is consumption; Φ is the risk premium on foreign assets; N is labor supply; e is the nominal exchange rate (local currency per unit of foreign currency); W is the wage rate; and superscripts d and f indicate domestic and foreign, respectively. τ^k , τ^w and τ^c are tax rates on capital (or interest) income, wage income and consumption, respectively.

¹¹ The focus on fiscal consolidation through increasing tax revenue appears useful, *a priori*, because: (i) Sudan’s binding expenditure commitments rule out overly ambitious spending cuts; and (ii) Sudan’s very low effective tax rates, as measured by the tax/GDP ratio, suggest a large revenue potential, especially in the non-oil economy.

¹² There is a positive correlation between labor productivity and the capital-output ratio in a Cobb-Douglas type production technology, given other conditions.

The first order conditions of households, profit maximization in the production sector (production technology is assumed to be Cobb-Douglas), the economy-wide resource constraint, the current account balance and the determinants of risk premium¹³ yield the following set of the equations characterizing the behavior of the model economy.

$$\frac{1}{C_t(1+\tau_t^c)} = \beta \frac{1+R_{t+1}^d(1-\tau_{t+1}^k)}{C_{t+1}(1+\tau_{t+1}^c)} \quad (\text{A7})$$

$$N_t^\varphi C_t = \frac{1-\tau_t^w}{1+\tau_t^c} (1-\alpha) K_t^\alpha E_t^{1-\alpha} N_t^{-\alpha} \quad (\text{A8})$$

$$1+R_{t+1}^d(1-\tau_{t+1}^k) = \frac{e_{t+1}}{e_t} (1+R_{t+1}^f) \Phi_{t+1} \quad (\text{A9})$$

$$e_t A_{t+1}^f + K_{t+1} = e_t (1+R_t^f) \Phi_t A_t^f + (1-\delta) K_t + A K_t^\alpha (E_t N_t)^{1-\alpha} - C_t - G_t + e_t Q_t \quad (\text{A10})$$

where $R_t^d = \alpha A K_t^{\alpha-1} (E_t N_t)^{1-\alpha} - \delta$, $W_t = (1-\alpha) A K_t^\alpha E_t^{1-\alpha} N_t^{-\alpha}$, and $G_t = \tilde{G}_t + \omega e_t Q_t$,

$$CA_t = e_t A_{t+1}^f - e_t (1+R_t^f) \Phi_t A_t^f = e_t Q_t + e_t^{\eta_f} Y_t^f - Z_t, \text{ and}$$

$$\Phi_t = \exp(-\tilde{\phi}_a (a_t^f - \bar{a}) + \tilde{\phi}_t),$$

where K is capital stock in the production sector; E is the labor productivity index, which is assumed to evolve at a constant rate, $a^f = \frac{A^f}{E}$; and Q is foreign currency denominated government oil revenue.

The intertemporal and intratemporal optimization conditions of households combined with the optimization in the production sector are summarized by equations (A7)-(A9): equation (A7) is the Euler equation for the intertemporally optimal consumption path; equation (A8) gives the optimal intratemporal choice between labor supply and consumption, given the path of net savings to households; and equation (A9) captures the risk-adjusted uncovered interest rate parity condition, grounded in the optimal allocation of foreign assets over different periods. Equation (A10) is an economy-wide resource constraint, required to close the general equilibrium model.

Since the model cannot be solved in closed form, we need to (i) solve for the steady state of an economy, (ii) take linear approximation of the marginal conditions (equations (A7)-(A10)) around the steady state, (iii) compute a set of eigenvalues and eigenvectors which

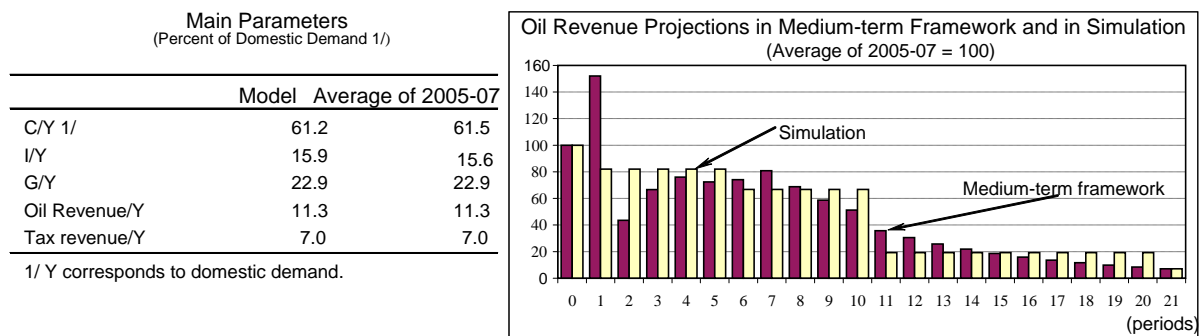
¹³ The determinant of risk premium is required to guarantee the steady state. The paper follows Christiano et al. (2007).

satisfies the Blanchard and Kahn condition,¹⁴ and (iv) calculate the (linear) dynamic behavior of the model based on these computed eigenvalues and eigenvectors.

The solution utilizes the following assumptions and calibrations.

- (i) Oil revenue projections follow a three-step path, shadowing the projected trajectory in the macroeconomic framework. Years 1–5, 6–10 and 11–20 in the simulation are the averages of the same periods in the macro framework projection, respectively. After period 21, oil revenue is assumed to be constant at the level in 2028 in the projection Figure 5.

Figure 5. Oil Revenue Projections



- (ii) Structural parameters (elasticities of substitution, labor supply elasticity, discount factor, share of capital, depreciation, technology level etc.) are set to replicate the initial steady state which is given as the average of 2005–2007 (see table above).
- (iii) All oil exports revenues belong to the government and a half of the revenues are directly linked to government expenditure, roughly capturing the CPA-consistent fiscal federal arrangement. Total government expenditures, therefore, decline as revenues from oil decline in the future, while government expenditures not connected to oil revenue remain constant.
- (iv) With an exogenously given expenditure path, the government alters consumption, wage income, and capital income tax rates to balance the intertemporal budget constraint, assuming no outstanding government debt at period zero. An alternative scenario, with initial debt at 20 percent of GDP, is also investigated.

¹⁴ The number of eigenvalue smaller than one must be the same as the number of state (predetermined) variables. See Blanchard and Kahn (1980).

- (v) The government can “time” the tax rate increases in period one (immediate start of fiscal consolidation), period six (five years later) or period eleven (ten years later). Rates are assumed to remain unchanged thereafter¹⁵.
- (vi) Government expenditures are of a current nature.
- (vii) The government does not have any foreign assets/liabilities but households can have foreign assets/liabilities to smooth consumption over time¹⁶.
- (viii) All assumptions for a small open economy model hold.
- (ix) Monetary phenomena such as inflation are ignored, suggesting that *all variables are in real terms*—a common assumption in the intertemporal fiscal solvency literature.
- (x) No time inconsistency problem. The government keeps its commitment.
- (xi) Tax rates in the initial steady state are set to 5 percent in order to render non-oil tax revenues of 7 percent of GDP (equivalent to the average in 2005–07).

Simulations on the required tax increases are conducted under several scenarios of adjustment speed, composition of adjustment, and the size of inherited government liabilities. First, the government is presented as having one of five alternatives to balance its intertemporal budget: It can raise: (i) the consumption tax (or VAT) rate; (ii) both wage and capital income tax rates; (iii) the wage income tax rate only; (iv) the consumption and wage income tax rates; and (v) all tax rates. Second, it is assumed that the government can raise the tax rates (a) immediately (period 1); (b) five years later (period 6); or (c) ten years later (period 11), which enables us to investigate the additional “burden” of delayed fiscal consolidation likely to arise from quadratic distortion costs associated with larger future tax increases. Third, it is assumed that the government has inherited liabilities of 20 percent of GDP or full debt relief (Table 2).

¹⁵ Actual simulation is held from period one to period 100.

¹⁶ This is equivalent to assume debt relief of external public debt in the future.

The bottom-line result confirms the well-known result of public finance that it is better to spread the tax burden over as many different periods as possible, and thus tax rates should be raised immediately. In all of the simulated cases, the government needs to substantially raise tax rates to balance the intertemporal budget constraint. The minimum increase in tax rates (relative to the steady state) is between 5–7 percent, if implemented immediately and across all tax types.

The speed of fiscal consolidation and the size of liabilities are critical. Delaying the increase in tax rates would increase costs to the economy non-linearly. In any scenario, the changes in the required increases in tax rates from period 6 to period 11 are substantially larger than those from period one to period 6. This reflects that delays in fiscal consolidation will only require progressively higher increases in tax rates in the future, leading to further distortions¹⁷ by reducing labor supply and capital accumulation. A higher level of debt in the initial period raises significantly the required increase in tax rates. Starting with liabilities of 20 percent of GDP in the initial period is equivalent to delaying fiscal consolidation by a couple of years.

The required increases in tax rates are smaller if both the consumption and income tax rates are increased simultaneously, rather than in isolation. While raising the consumption or wage income tax alone would result in a double digit increase in the corresponding tax rates even when adjustment is front-loaded (i.e. rates are raised in period 1), raising both taxes simultaneously reduces the required increase in the tax rate to 6.5 percent (although this still represents a doubling of rates).¹⁸ Since tax-induced distortions are quadratic in the tax rate, this result simply reflects the growth recapture due to the “smaller” tax increases in each tax type.

However, the required tax rate doubling that emerges from this “best-case” scenario is politically implausible, if not economically insensible. This result therefore helps alert the authorities to the only realistic adjustment option that exists on the tax side: a significant broadening of the entire non-oil tax base.

Although the two models reinforce each other by highlighting similar magnitudes of requisite fiscal adjustment, there is an important difference as well. Both models suggest the need for medium-term fiscal adjustment in Sudan of between 4–8 percent of non-oil GDP over the medium-term. However, if this adjustment were to come from expenditures (model I; tax take held fixed), the required medium-term adjustment would fall in the speed of adjustment, while the long-term adjustment would not be affected much; this would argue in favor of back-loaded expenditure adjustments. By contrast, the second model

¹⁷ It is a well-known fact in the literature of public finance that distortions caused by taxation are a quadratic function of tax rates.

¹⁸ Given the initial calibration of tax rates, this has an equivalent interpretation as the required adjustment in percent of GDP terms.

(expenditures held fixed) suggests the opposite: back loaded tax-led adjustments would have adverse growth costs so that such adjustments would have to be bigger relative to frontloaded adjustments.

Thus, read together, these contrasting results suggest that a sensible fiscal adjustment strategy would front-load any tax increase, and backload expenditure reductions. The optimal mix would, of course, also depend on politico-economic considerations, including the stage of the electoral cycle, rigidities imbedded in Sudan's expenditure profile, and the potential for voluntary tax collections in a fragile setting. However, to the extent that a "combination" of tax and expenditure measures will eventually be needed, the foregoing results seem interesting, intuitive and relevant.

III. MOTIVATING SUDAN'S FISCAL ADJUSTMENT OPTIONS USING CROSS COUNTRY COMPARISONS

We now turn to a complementary exercise of comparing Sudan's fiscal structure with a sample of 14 countries. The purpose is to complement the results of the two models and identify areas for reform on the tax or spending side which could form part of the overall adjustment strategy.¹⁹

Tax Policy: The overall tax/GDP ratio is quite low, even when compared with other oil producers in the sample (Indonesia, Malaysia and Syria). The share of income taxes (personal and corporate income taxes) is low, while the share of taxes on international trade is high. The personal income tax is relatively less progressive as evidenced by the absence of a material gap between the lowest and highest rate-paying income thresholds. In addition, the threshold for paying personal income tax is the highest, about 3½ times per capita income, and persons over 50 years of age are also exempt (Figure 6 & 7).²⁰ Appendix V summarizes the various tax rates and exemptions in Sudan as of early 2009.

It is vital for Sudan to raise its VAT revenue productivity, which is the lowest in the group. The rising share of VAT revenues in countries' indirect and total tax collections has been a striking feature of the past decade, testifying to the unique collection/administrative advantages of the tax. While Sudan's VAT registration threshold and VAT rate are both close to the sample average, VAT productivity is low, due partly to weak compliance but mainly to wide-ranging VAT exemptions. The two reinforce each other as exemptions render the system vulnerable to abuse, as apparent in the sharp increase in the share of VAT-exempt imports from 40 percent to 60 percent in 2008.

¹⁹ For comparison, Sudan is compared with regional countries as well as with other oil exporting countries. These countries include: Egypt, Indonesia, Jordan, Kenya, Lebanon, Malaysia, Morocco, Nigeria, Pakistan, Senegal, Syria, Tanzania, Tunisia, and Turkey.

²⁰ There also appears to be scope to selectively raise excise duties on items such as cars, cigarettes, sugar and soft drinks.

The major VAT exemptions are as follows: (i) imports of all goods (intermediate and final) by foreign oil companies and many other public and public-private companies; (ii) capital goods; (iii) consumption of services such as water, electricity, commercial rentals, and in-city transportation; (iv) agricultural products. Most of these exemptions are difficult to justify. For example, the implied subsidies to the electricity sector appear highly regressive. The reason for exempting on capital goods appears to be the difficulty of administering refunds on a time basis to minimize the cash-flow burden that would otherwise be borne by new businesses importing such goods. However, this appears to be an argument for instituting a VAT refund system, rather than perpetuating an exemptions regime that may be vulnerable to significant abuse.

Figure 6. Tax System Comparison with Other Countries

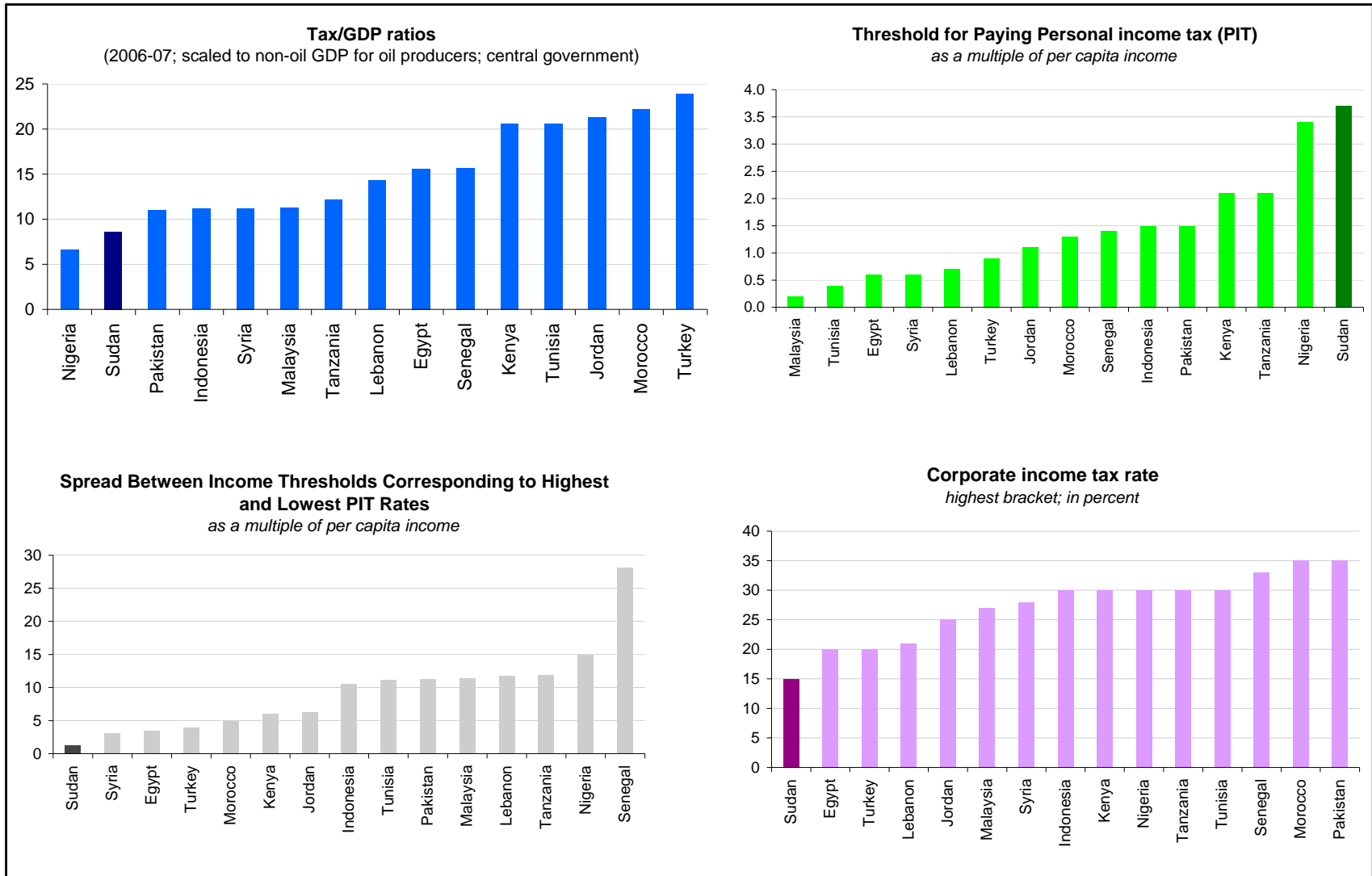
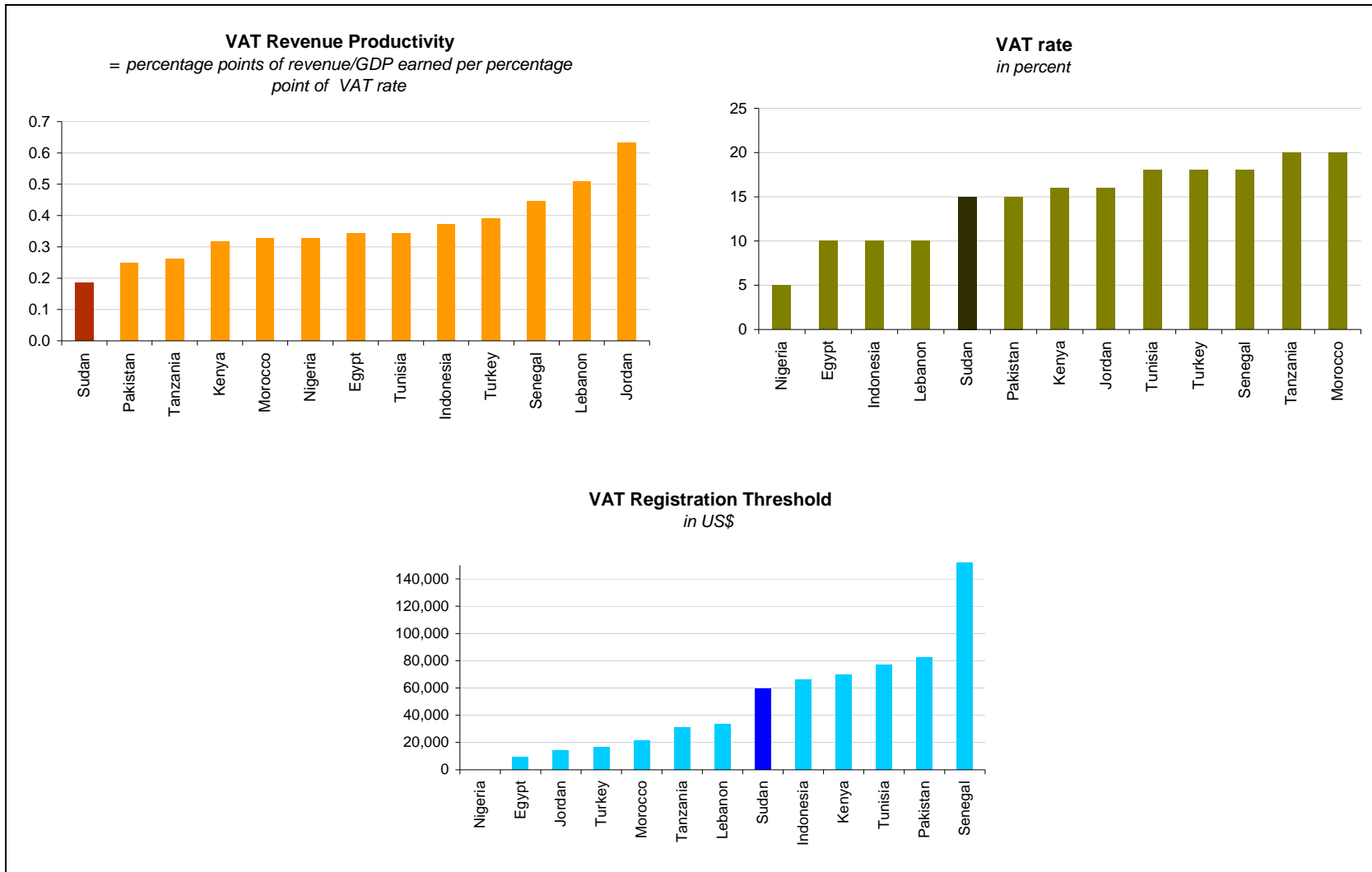


Figure 7. VAT Comparison with Other Countries



Revenue Administration: A number of revenue administration measures initiated recently need to be strengthened to translate into real gains in revenues. As shown in Table 3, Sudan is significantly behind other countries in the region. The potential key areas of further reforms include self assessment, operational integration of VAT-income tax offices, and structural improvement in the taxation chamber. An improvement in compliance and recovery will help other reforms and generate significant additional revenues.

Expenditure Policy: The size and distribution of the fuel subsidy has been a recurrent expenditure policy theme in Sudan, as in other oil producing countries (see Coady et al, 2006). With its highly regulated petroleum pricing regime, Sudan has incurred large fuel subsidies (as a share of total expenditures) over the course of the recent oil price boom. The fiscal burden was 2.3 percent of GDP in 2008 alone, a high cost to bear, considering Sudan's large health, education and capital spending needs. The subsidy is also poorly targeted, since energy consumption is concentrated among wealthier groups living in urban centers. Moreover, petroleum has rendered fiscal policy procyclical (preventing higher than budgeted oil revenues to be saved for the rainy day) and has left Sudan a net refined fuel importer (with the associated foreign exchange burden), as the demand for refined fuel consumption has risen during oil price booms. Box 1 summarizes the existing petroleum pricing regime in Sudan and options for reform—mainly moving to a semi-automatic formula for adjusting petroleum prices—while limiting the impact on the poor.

The possible impact on the poor of removing the fuel subsidy alerts us to the broader question of mitigating measures. The 2007–08 increase in world food prices had a big impact on food inflation in Sudan, highlighting the poor's high vulnerability to such shocks (the poor spend more than half of their incomes on food). The absence of a targeted safety net severely inhibits the authorities' ability to offset the deleterious impact of rising food (or fuel) prices on the poor. Box 2 discusses possible short-term mitigating measures, as well as longer term options, such as a targeted cash transfer scheme that can shield the poor against commodity price shocks effectively and efficiently (i.e. at the lowest possible fiscal and macroeconomic cost).

IV. CONCLUSIONS AND RECOMMENDATIONS

This paper has sought to identify the size, composition and speed of the required medium-term fiscal adjustment in Sudan. The motivation for the adjustment is Sudan's finite oil reserves, high vulnerability to commodity price shocks, low initial fiscal buffer in relation to politico-economic risks, and significant structural fiscal challenges.

Based on the permanently sustainable NOPB approach and a general equilibrium neoclassical growth framework, the required adjustment over the medium term is at minimum 4 percent of GDP. The first approach suggests a fiscal adjustment of 4–10 percent of NOGDP, with the lower bound of 4 percent obtained under fairly realistic assumptions of (i) an annual adjustment rate of 25 percent and (ii) a de facto serviceable debt

stock equivalent to 25 percent of the total. The slow adjustment is consistent with the current stage of the electoral cycle and other binding peace-related spending pressures (including those arising from fiscal federalism-related rigidities)

The general equilibrium neoclassical growth model solves the requisite adjustment in the form of tax rate increases, keeping the initial tax base and expenditure level fixed. If both consumption and income taxes increased upfront and simultaneously, intertemporal solvency would still require a doubling of tax rates. Since this neither viable nor economically sensible, the result merely serves to highlight the rather narrow set of options the authorities face on the tax side. In other words, no adjustment strategy in Sudan would be feasible in the absence of a significant broadening of the non-oil tax base.

Together, the models suggest that a sensible fiscal adjustment strategy would involve a frontloading of the tax effort and a back loading of expenditure rationalization.

Although the optimal mix would also depend on politico-economic considerations, the rigidities imbedded in Sudan's expenditure profile and the low potential for voluntary tax collections in a fragile setting a comparison of key fiscal parameters suggests the need to enlarge the non-oil tax base by tightening generous VAT and personal income tax exemptions and weak tax administration. The main indicators for Sudan, including the low tax/GDP ratio, the threshold for personal income tax, and VAT revenue productivity, show room for significant improvement in these areas.

The paper also highlights the need for structural reforms in petroleum pricing and public financial management. In particular, anchoring fiscal policy in non-oil indicators would help buffer Sudan against the vagaries of oil price volatility by allowing excess oil revenues to be adequately saved and dissaved during oil booms and busts.²¹ Moreover, it would be important to refocus expenditure away from ill-targeted fuel subsidies (which costed 4 percent of GDP a year in 2007–08) towards well-targeted social safety nets capable of protecting the poor against rising fuel (and food) prices.

²¹ The repeated use of the oil revenue stabilization account (ORSA) reflects in part the absence of strong anchors, both quantitative and institutional.

Table 1. Required Fiscal Adjustment Under Various Debt Relief and Adjustment Speed Scenarios

| (1) | (2) | (3) | (4) | (5) | (6) = 3-5 | (7) = 4-5 |
|---|---|--|--|--|---|---|
| Share of debt remaining after debt relief | Speed of adjustment (1 = instantaneous) | Average sustainable NOPB over Medium Term (percent of NOGDP) 1/ | Sustainable NOPB over Long Term (percent of NOGDP) 2/ | Actual 2008-09 NOPB (percent of NOGDP) 3/ | Required Medium Term adjustment (percent of NOGDP) | Required Long Term adjustment (percent of NOGDP) |
| 100% | 1.00 | 0.4 | 1.0 | -8.5 | 8.9 | 9.9 |
| | 0.50 | -1.4 | 1.1 | -8.5 | 7.1 | 10.0 |
| | 0.25 | -3.8 | 1.3 | -8.5 | 4.7 | 10.1 |
| 75% | 1.00 | 0.2 | 0.9 | -8.5 | 8.7 | 9.7 |
| | 0.50 | -1.5 | 1.0 | -8.5 | 7.0 | 9.8 |
| | 0.25 | -3.9 | 1.1 | -8.5 | 4.6 | 10.0 |
| 50% | 1.00 | 0.0 | 0.7 | -8.5 | 8.5 | 9.6 |
| | 0.50 | -1.6 | 0.8 | -8.5 | 6.8 | 9.7 |
| | 0.25 | -4.0 | 1.0 | -8.5 | 4.5 | 9.8 |
| 25% | 1.00 | -0.1 | 0.6 | -8.5 | 8.4 | 9.4 |
| | 0.50 | -1.8 | 0.6 | -8.5 | 6.7 | 9.5 |
| | 0.25 | -4.1 | 0.8 | -8.5 | 4.4 | 9.6 |

Average = 6.7 9.8

Notes:

1/ The sustainable NOPB in each future year were derived by subtracting from the non-oil revenues and grants, the optimal level of spending solved from the model. Column 3 reports the average over 2009–13 of this sustainable NOPB/NOGDP ratio.

2/ The level of NOPB that is needed over the long-run (i.e. beyond 2015) to render the initial debt sustainable.

3/ The average of the NOPB/GDP ratios obtaining in 2008 (-8.1 percent) and approved for the 2009 budget (-8.8 percent).

Table 2. Required Increases in Tax Rates to Balance the Intertemporal Budget Constraint

| Tax rate change | w/o government liabilities at period 0 | | | government liabilities, 20 percent of GDP | |
|-------------------------------|--|------|------|---|------|
| | Period when tax rate is changed | | | Period when tax rate is changed | |
| | 1 | 6 | 11 | 1 | 6 |
| Consumption tax rate | 13.3 | 20.9 | 33.7 | 16.2 | 25.7 |
| Income tax (wage and capital) | 9.9 | 14.8 | 22.2 | 11.9 | 17.9 |
| Wage income tax | 12.6 | 19.1 | 28.8 | 15.2 | 23.1 |
| Consumption and wage tax | 6.5 | 9.9 | 15.3 | 7.9 | 12.1 |
| All taxes | 5.7 | 8.6 | 13.1 | 6.8 | 10.4 |

1/ 5.05 percent on consumption, wage and capital income in the initial steady state to reproduce tax revenue as a share of domestic demand, 7 percent.

Table 3. Features of Tax Administration in Selected MCD Countries, 1990s vs. now

| | Algeria | | Egypt | | Jordan | | Lebanon | | Morocco | | Pakistan | | Sudan | | Syria | | Tunisia | | Yemen | |
|----------------------------------|---------|-------|-------|-----|--------|-----|---------|------|---------|------|----------|------|-------|-------|-------|-------|---------|------|-------|-------|
| | 90s | Now | 90s | Now | 90s | Now | 90s | Now | 90s | Now | 90s | Now | 90s | Now | 90s | Now | 90s | Now | 90s | Now |
| <i>Reform strategy</i> | No | Yes | No | Yes | No | Yes | No | Yes | No | Yes | No | Yes | No | Plan | No | Yes | No | * | No | Yes |
| VAT | 1992 | Yes | 1991 | Yes | No | Yes | No | Yes | 1986 | Yes | 1990 | Yes | No | Yes | No | Plan | 1988 | Yes | No | Plan |
| <i>Self-assessment</i> | Yes | Yes | No | Yes | No | Yes | No | VAT | Poor | Yes | No | Yes | No | VAT | No | Plan | Yes | VAT | No | Plan |
| <i>Functions-based HQ</i> | Yes | Yes | No | Yes | No | Yes | No | Plan | Yes | Yes | No | Yes | No | Plan | No | Plan | Yes | Yes | No | No |
| <i>Integrated income tax-VAT</i> | Yes | Yes | No | Yes | No | Yes | No | Plan | Yes | Yes | No | Plan | No | Plan | No | Plan | Yes | Yes | No | Plan |
| <i>LTO</i> | No | Yes | No | Yes | No | Yes | No | Yes | No | Yes | No | Yes | No | Yes | No | Yes | No | Plan | No | Yes |
| <i>MTO/STO</i> | No | Yes | No | Yes | No | Yes | No | No | No | Plan | No | No | No | Yes | No | Plan | No | No | No | No |
| <i>TIN</i> | No | Yes | No | Yes | No | Yes | No | Yes | No | Yes | No | Yes | No | Plan | No | Plan | No | Yes | No | No |
| <i>Taxpayer services</i> | Poor | Basic | Poor | I | Poor | I | Poor | I | Basic | I | Basic | * | No | Basic | No | Basic | Basic | I | Poor | Basic |
| <i>Tax operations</i> | Basic | I | Basic | I | Basic | I | Basic | I | Basic | I | Basic | * | Basic | I | Basic | I | Basic | I | Basic | I |
| <i>Information technology</i> | Poor | I | Poor | I | Basic | I | Basic | I | Basic | I | Basic | * | Basic | I | No | Plan | Basic | I | Poor | Plan |

I = improved; Part. = partially; * = status not known.

A definition of the tax administration features and the terms used to assess the specific situation in the table below are as follows:

- 1. Reform strategy.** This refers to whether or not there is a formal strategy in place for tax administration reform. An IMF-recommended reform strategy typically includes specific recommendations and a high-level timetable for their implementation, success criteria, and proposals for effective management of the strategy, including governance and project management principles. The comment "plan" refers to situations where a reform strategy has been recommended but implementation is at the early stages only.
- 2. VAT.** This refers simply to the existence of a VAT, or plans for one, and does not deal with the nature and performance of the particular VAT.
- 3. Self-assessment.** This refers to the existence of full self-assessment for tax administration. A comment that says "LTO" implies there is self-assessment in the LTO. "VAT" means there is no self-assessment for income tax, but only for VAT.
- 4. Function-based HQ.** This refers to whether the tax organization(s), especially at the HQ level, is (are) based on functions (registration, returns processing, audit, etc.).
- 5. Integrated direct and indirect tax administration.** This refers to whether or not direct and indirect tax administrations are integrated, primarily VAT and income tax.
- 6. LTO.** This refers to the existence, or absence, of a dedicated organization to serve large taxpayers and control their tax obligations.
- 7. Other Segmentation(MTO/STO).** This refers to whether or not the tax administration has undertaken, or plans to undertake, services to specific taxpayer groups / segments other than the largest taxpayers (e.g., medium and small taxpayers).
- 8. TIN.** This refers to the existence, or not, of a unique taxpayer identification number, (TIN), controlled by the tax administration and used by all revenue collecting operations.
- 9. Taxpayer services.** This category refers to taxpayer services specifically, and is primarily intended to indicate whether or not there is a trend toward improving these services.
- 10. Tax operations.** This is a general reference to all tax operations (accounting and payment, audit, collection enforcement, appeals, etc). These are areas where the IMF usually makes specific recommendations for improvement. Because this covers a broad range of topics, it is difficult to summarize the situation in a single word. However, the intention is to indicate a general starting point, and the extent to which there has or has not been improvement from the early 1990s.
- 11. Information technology.** IT investments have often been a big part of tax administration reform. Where they have been effective they have focused on re-engineering and simplifying business processes, not merely automating existing, inefficient processes. The intention is to categorize IT status in a single word or phrase to capture the starting point and the trend.

Box 1. Petroleum Pricing Reform in Sudan

The current pricing regime for refined petroleum products in Sudan features extensive government control. Diesel and gasoline, both domestically refined and imported, are sold to distributors at regulated prices via the Sudan Petroleum Corporation (SPC); retail prices are also controlled after allowing for distributor/retailer margins. This ad-hoc price setting regime (i) increases fiscal procyclicality and instability, since price adjustments are infrequent—the last one undertaken in August 2006—while world oil prices are extremely volatile;¹ (ii) prevents price pass-through and the associated optimal private demand and supply response; this, in turn, can lead to inefficiencies in production processes (excessive energy intensity and producer demand for oil) as well as require ever-increasing government intervention (and outlays, including of foreign exchange) to close the widening gap between demand and supply for petroleum; (iii) distorts optimal decision-making about public spending, as the non-transparent nature of the implicit subsidy prevents a comparison with competing uses (such as health or education spending) of the resources foregone; (iv) does not benefit the poorer segments of the population, as the subsidy generated accrues predominantly to the richer quintiles; (v) creates incentives for smuggling, since Sudan's pump prices have on average been far below its Southern neighbors (Kenya and Uganda); (vi) under-taxes a good whose consumption entails a nontrivial and negative environmental externality; and (vii) generates a subsidy that is borne mostly by the federal government, thus creating a disconnect between the sharing of the costs and benefits of the subsidy. There is therefore, clearly, a case for reforming the existing regime.

Before considering the reform options, it is important to note that Sudan is not alone in maintaining a controlled pricing regime. A number of countries, net oil exporters and importers, observe similar ad-hoc government-regulated regimes. The objective is typically to (i) guard domestic consumers and producers against “excessive” short-term volatility in world oil prices; and/or (ii) prevent temporary spikes in petrol prices from inducing permanent cost-push inflationary pressures. In a recent FAD cross-country study of petroleum pricing regimes, almost 30 percent of the countries surveyed set prices on an ad-hoc basis, the remaining sample split between automatic pricing mechanisms (20 percent) and fully liberalized systems (50 percent). A fully liberalized system, wherein prices are market determined and government control restricted to taxes, is feasible only when supply is in the private domain and there is adequate competition at the retail/distributor level. These conditions do not apply in Sudan, and thus the options for reforming the current regime must be located within the menu of automatic pricing mechanisms: regimes where the government pre-commits to automatically updating the sale price to distributors (ex-refinery price) at known intervals according to a known formula. The main advantage of such partial pass-through regimes is that they can guard both domestic agents against excessive short-term world price volatility, and the budget against trend changes in world prices. Moreover, they depoliticize the petroleum price-setting process by replacing ad-hoc decision-making with a pre-specified rule for price-updates.

An automatic pricing systems for Sudan would have to deal with two important considerations: (i) specification of pass-through method that can deliver the requisite smoothing in the face of short-term volatility: both *moving average rules* (based on past spot prices) and *trigger rules* (prices updated if spot prices change by more than a predetermined trigger amount) could be used; and (ii) choice of the appropriate market-based benchmark price (opportunity cost) that the ex-refinery price will shadow: this could either be set as the import- or export- parity price. Illustratively, in the former case, the benchmark distributor price for region *i* would be derived as follows: CIF price of gasoline at Port Sudan adjusted upwards for (a) government taxes and (b) pipeline fees from the port to the region *i*. In the latter case, it would be the export price of crude, adjusted (a) downwards for the pipeline cost of sending the crude to the port, (b) upwards for the pipeline cost of sending the crude to the refinery, (c) upwards for a refining cost margin, and (d) government taxes.

Box 2. Protecting the Poor in the Face of Rising Food Prices

In deciding how to respond a world food price shock, policymakers must balance several macroeconomic and social risks. On one hand, allowing full pass-through of higher import prices to domestic prices risks entrenching inflationary expectations; reducing the real incomes of poor households (both through food price inflation, and its indirect impact on the prices of other commodities consumed by the poor); and engendering potential protests, especially by the urban groups. On the other hand, attempts to resist the increase in domestic prices through import tariff/tax reductions or price subsidies prevent any demand-supply adjustment by the private sector—thus, raising fiscal and trade deficits and potentially undermining external and fiscal sustainability; and generate the possibility of food shortages, black markets, and smuggling. Moreover, blanket measures are very poorly targeted, accruing disproportionately to the rich.

A balanced and comprehensive response will typically have the following features:

(i) *Reasonably high pass-through of world prices to domestic prices:* to induce the desired consumption response (both through a reduction in excess consumption, and a switch to cheaper substitutes) and production response, thus mitigating the fiscal and balance of payments impact of the shock, and as well as reducing the risk of food shortages.

(ii) *Subsidy reform to free up fiscal resources for pro-poor spending:* tax exemptions, controls on fuel prices, VAT exemptions on utilities are examples of blanket subsidy schemes that disproportionately benefit the richer segments of the population and whose removal can generate substantial fiscal savings for more targeted spending. A public information campaign may be necessary to obviate opposition from organized groups that capture blanket subsidies (usually urban middle and upper classes) and obtain the support of the more diverse potential beneficiaries of reform (poor consumers spread over the country).

(iii) *Synchronized short-term measures to protect the real incomes of the poor:* possibilities include drawdown of strategic grain reserve to address shortages in affected areas; reduction of distortionary taxes/tariffs on commodities that are important in the budgets of the poor (like wheat or kerosene)—fiscal neutrality may require raising offsetting taxes/tariffs on luxury items; maintenance (delayed elimination) of price subsidies on key staples (such as sorghum, rice); food-for-work, feeding mothers, food stamps/ration cards, and school lunch programs to help target the most vulnerable groups (see below); enhanced access to/lowered costs of public services important to the most vulnerable groups, such as schooling, health, mass urban transportation; water and electricity (below a certain threshold); targeted subsidies to farmers to enable them to boost production—including input (seed and fertilizer) subsidies, smallholder credit facilities, extension services, and improved infrastructure. It is important to recognize that there is no perfect set of mitigating measures—each comes with its costs and benefits. Measures that are easy to implement (politically and administratively) and can achieve a wide enough coverage of the population, are often less targeted, more distortionary, and costlier in fiscal terms.¹

¹ Box 1 in IMF (2008a) summarizes mitigating measures adopted by Gabon, Ghana, Indonesia and Jordan in response to high food and fuel prices; while Table 1 in IMF (2008b) presents the costs and benefits associated with some of these alternative measures.

Box 2. Protecting the Poor in the Face of Rising Food Prices (continued)

(iv) *Direct cash transfers (medium-term)*: A targeted social safety net that can identify, track and reach vulnerable groups is the most effective and cost-efficient way of achieving social protection. The amount of cash transfer can be index-linked to a measure of inflation most relevant to the poor, so that a formal approval is not needed each time there is a surge in inflation. As capacity improves, these safety nets can also promote social development by linking transfers to school attendance and primary healthcare for children of poor households. Although, Sudan does not have a targeted social safety net program, evidence from other countries, such as Senegal and Indonesia, suggests that such nets can be successfully instituted if good poverty statistics are available,² rollout is gradual, reliable distribution channels exist, technical and financial support from abroad can be tapped, and strong ex-post monitoring and oversight is maintained.³

There is no perfect social safety net and effective mitigation depends critically on ability to identify groups that are most vulnerable to the price increase. In an agro-based economy like Sudan's, many of the rural poor are food producers, and are likely to be less adversely affected than urban or semi-urban poor (rural households not engaged in agricultural activities). Within this categories, children and pregnant women, and the elderly and unemployed, have been generally found to warrant special attention, as nutritional loss among these groups can prove fatal or produce lasting physical and mental disabilities.

Higher food prices also represent an opportunity to stimulate food grain production and enhance the contribution of agriculture to medium-term growth. The recently launched commercialization initiative to tap Sudan's vast agricultural resources is appropriate and can—like countries such as Brazil, Malaysia and Thailand—boost agricultural productivity and increase food security. To maximize the medium-term supply response, care should be taken to avoid unhelpful intervention: mandated grain prices, export restrictions, forcible procurement, marketing boards; and focus efforts on reducing information gaps, connecting markets and lowering distribution and marketing costs: the benefits of publicly accessible grain market information systems (as in India and Mali) and improvements in inland transport infrastructure (Congo Republic and Nepal), efficient grain storage and customs facilitation are well-documented.⁴

² A household budget survey (HBS) is the standard data exercise required to reveal the extent and distribution of poverty in a country. Sudan does not have a current HBS, however, the AfDB has allocated funding for the same to be conducted of a survey by April 2009. This could, along with the broader PRSP process and the recently completed national census, help relieve the informational constraints' over the next year.

³ For Senegal, see Adenauer (2008); for Indonesia, see Boediono (2006).

⁴ See World Bank (2008).

APPENDIX I. THE OIL SECTOR IN SUDAN

Background

Oil was discovered in Sudan in the mid-1970s, but commercial extraction did not begin until 1999. Oil exploration was first initiated in 1959 by an Italian oil company in Red Sea Area. Several other companies joined this effort but with no success. Exploration was extended to Southern Sudan after the end of first civil war. In 1975, the American oil company, Chevron, was granted a concession which made the first discovery in 1979. With more successes in exploration, Chevron along with other companies, in 1983, formed the White Nile Petroleum Company, to build oil pipeline to Port Sudan. However, the process was soon erupted by the second civil war and Chevron suspended its operations and sold its interests to the Sudanese Concorp in 1992. The Greater Nile Petroleum Operating Company (formed by China National Petroleum Company (CNPC), Petronas, and Sudanpet) made considerable discoveries, increasing the proven reserves in Sudan. It also constructed the pipeline from the fields to Port Sudan on the Red Sea which became operational in 1999.

There are currently about 15 oil companies operating in Sudan, mainly from Asia. Key players include from China (CNPC), India (the Oil and Natural Gas Corporation (ONGC)), and Malaysia (Petronas). Production started at a low level in 1992, and built up rapidly following the start-up of the Greater Nile Oil Project (GNOP—a joint venture that includes CNPC (40 percent), Petronas (30 percent), Arakis (25 percent), and the Sudan National Petroleum Corporation (5 percent).

Reserves

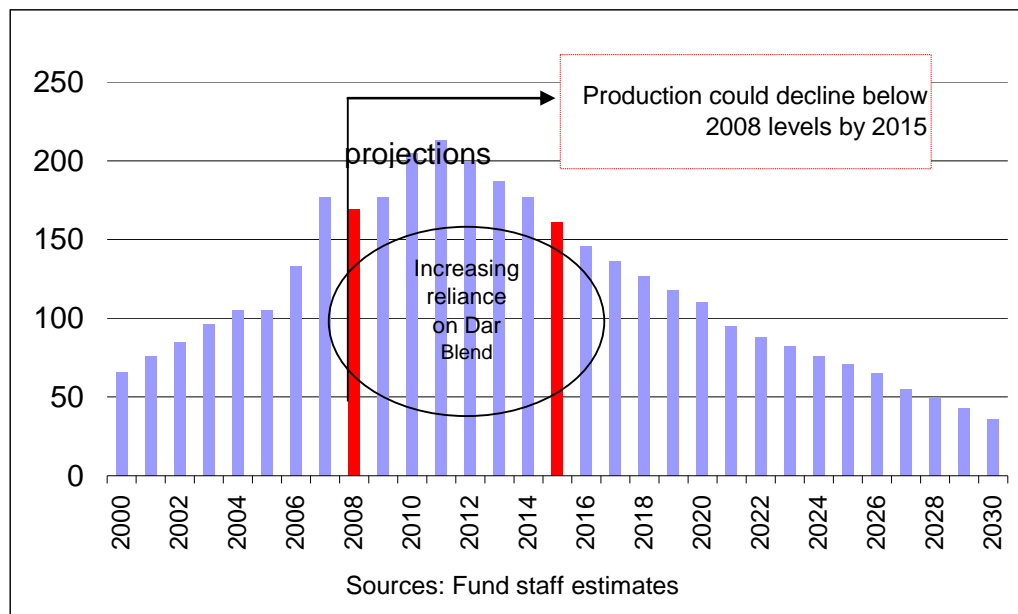
The estimated oil reserves in Sudan are in the range of 4–5 billion barrels, suggesting that Sudan could continue to produce at current levels of output for some 25–30 years. Exploration over the past 30 years has yielded significant discoveries. Discoveries in 1970s and 1980s were slow to put those into production due to disruption by the civil wars. However, since late 1990s when full development started, the reserves estimates have increased significantly. International reports on the size of the Sudan's reserves vary from about 2½ to 6½ billion barrels (bn bbl). The variation is due to assumptions about the recovery factor used to estimate the reserves. While Ministry of Energy and Mining estimates Sudan's oil reserves at 2.35 bn bbl, other sources carry much higher estimates. British Petroleum (BP) estimates are 6.6 bn bbl, while International Energy Agency and the Oil and Gas Journal each estimate at 5.0 bn bbl.

Production

Sudan is a relatively new entrant for the ranks of major oil producing countries.

Production built up rapidly following the start-up of the Greater Nile Petroleum Operating Company in 1999. By 2004, daily output exceeded 300,000 bpd—primarily the Nile blend crude. Production of Dar blend began in 2006, raising total output to 485,000 bpd by 2007—roughly 35th in terms of world production, comparable with such countries as Colombia, Ecuador, and Yemen. The production, which declined slightly [to about 475,000 bpd] in 2008, is expected to peak in 2012, and will gradually decline afterwards. Assuming no new discoveries, the production is estimated to be lower than current levels after 2015.

Figure A1. Estimated and Projected Oil Production (2000–30; millions of barrels per year)



Pipelines

Sudan is heavily dependent on long distance oil pipelines to transports oil for export and domestic consumption.

The oil production lies in the South while the only seaport is in the North. Similarly, the center of consumption in Khartoum is far from the oil fields. Two major crude oil pipelines—one designed to carry crude for export and one dedicated to domestic consumption—are in use. The major oil export pipelines were constructed and are now owned by the respective joint operating companies with shares held in proportion to their stakes in the production of the source blocks (i.e., GNPOC owns the GNPOC Pipeline Company and Petrodar owns its pipeline). Tariffs for the GNPOC Pipeline are currently around \$4.00/bbl for the shareholders. New producers will need to pay a surcharge to use excess capacity, further increasing total surcharge. The separation of pipeline costs from the

overall project agreements, the review of terms of access to existing pipelines, and the equity sharing may provide a better deal for the government in the long term.

Crude Oil Quality and Pricing

The quality of Sudanese crude varies substantially between fields, and a significant proportion of production is of relatively low quality. Sudan exports two qualities of oil, the Nile Blend and Dar Blend. Nile Blend is a good quality crude, usually sells at a discount of \$2–4/bbl to Indonesian Minas crude due to heating required during handling. The Dar Blend sells at significant discount due to its low quality and difficulty in handling. However, there has been improvement and the discount for Dar has settled into a narrower range. Sudan could obtain better prices with careful marketing and an increase in global processing capacity for such type of crude oil. The Government sells its share of oil by issuing open international tenders for exports while the major partners in the licenses (CNPC, ONGC, Petronas, etc.) sell their own share, either by tenders or to their own refining system. Nile blend, mixed with Fula Blend (a low quality crude) is used for domestic refineries.

Exploration and Production Contracts

Sudan’s petroleum exploration and production contracts follow the “production sharing contract” (PSC) model. Under these contracts, oil companies recover their costs, and receive their share of profits, through obtaining ownership of a share of oil production at the wellhead. Sudan’s production sharing contracts function well when oil prices remain within a narrow band anticipated at the time of negotiation. However, there is no mechanism to adjust the share of government in line with oil prices. In addition, Sudan relies mainly on direct negotiation for allocation of licenses due to economic restrictions, civil conflicts and the perceived high risk. Though the recent awards in 2007 and 2008 were relatively more competitive, efficient results can be produced by allocating exploration rights through bid rounds as the security situation improves and associated risk reduces. While it might impact foreign investment to reconsider existing contracts, it would be advantageous to the Government to consider incorporating best practices terms in future contracts.

APPENDIX II. FEDERAL FEDERALISM IN SUDAN²²

An agreement was signed between the Government of the Republic of Sudan and the Sudan People's Liberation Movement/Sudan People's Liberation Army in January 2004 regarding guiding principles in the sharing of common wealth of the country. The agreement, which is part of the Comprehensive Peace Agreement (CPA), includes all public wealth (i.e., land and natural resources). However, the emphasis is on revenue from oil and jurisdiction over the collection and sharing of various types of taxes and duties. The guiding principles for the management and development of the petroleum sector to safeguard the interest of all the concerned parties are as follows:

Oil Wealth Management

A framework for the management of the development of petroleum sector during the Interim Period places emphasis on; sustainable use of oil as a non-renewable natural resource safeguarding all the concerned bodies, and empowerment of the appropriate levels of government to develop and manage oil production, in consultation with relevant communities. In addition, it was also agreed to establish an independent National Petroleum Commission (NPC) with the president of the Republic and President of the Government of Southern Sudan (GOSS) as co-chairs, and at least 11 other members representing the national government, GOSS, and oil producing states/regions. It was agreed that its decisions shall be by consensus and it shall:

- formulate public policies, strategies, programs, and guidelines for the development and management of the petroleum sector;
- monitor and assess the implementation of policies to safeguard peoples' interests;
- negotiate and approve all contracts for the exploration and development of oil; and
- ensure consistency of the contract with other policies and guidelines.

A framework was agreed to share the wealth emanating from oil resources among different levels/regions in the country.²³ It was decided that:

²² For more details on wealth sharing agreement between the Government of the Republic of the Sudan and The Sudan People's Liberation Movement/Sudan People's Liberation Army, see The Comprehensive Peace Agreement, January 7, 2004 (Naivasha, Kenya).

²³ The divisible pool (Net revenue from oil) was defined as the net revenue from exports of government oil and from the refineries. Exports shall be valued at the actual Free on Board (FOB) export prices less the charges to deliver the oil to any export destination including pipeline and management charges. Oil delivered to the refinery shall be valued at the average FOB export prices during the last calendar month in which there was an export sale less the charges incurred to deliver the oil to any export destination including pipeline and management charges. In addition, an Oil Revenue Stabilization Account (ORSA) shall be established from

(continued...)

- At least two percent of oil revenue shall be allocated to the oil producing states/regions in proportion to output produced in such states/regions;
- After the payment to the Oil Revenue Stabilization Account (ORSA) and to the oil producing states/regions, fifty percent of net oil revenue derived from oil producing wells in Southern Sudan shall be allocated to the GOSS and the remaining fifty percent to the National Government and States in Northern Sudan.

The agreement includes well defined equalization and allocation to all regions and tiers of government regarding revenue collection. It was decided that all revenues collected by all levels of governments/regions shall be pooled in a National Revenue Fund (NRF) administered by the National Treasury. It was agreed that fifty percent of the national non-oil revenue collected in Southern Sudan shall be transferred to the GOSS to partially meet the development cost and other activities. It was also agreed to review this arrangement, at mid-term of the Interim Period, with the view of the National Government allocating additional resources to the GOSS. In addition, it was agreed to appeal to the international and donor community to help the GOSS by providing post-conflict reconstruction assistance especially at the beginning of the transition. The states/regions and the GOSS shall retain and dispose of such other income raised and collected under their own taxing powers.

Ensuring transparency and fairness in the allocation of nationally collected funds to the states/regions and the GOSS was an important component of the agreement. For this purpose, a Fiscal and Financial Allocation and Monitoring Commission (FFAMC) was established with representatives and experts nominated from the National Government, the GOSS, and States/Regions . The task of the commission was to ensure:

- prompt transfer of equalization grants from the National Revenue Fund to respective levels of government;
- appropriate utilization and sharing of financial resources;
- transfer of resources allocated to war affected areas in accordance with agreed upon formulae; and
- transparent and fair allocation of funds to the GOSS and states/regions according to established ratios or percentages stipulated in this Agreement.

government oil net revenue derived from actual export sales above an agreed benchmark revenues based on volume and price established annually in the national budget.

Substantial progress has been achieved in implementing the wealth-sharing provisions of the CPA. As agreed, the National Petroleum Commission (NPC) was established in October 2005 to formulate policies and guidelines on the development of the oil sector, and to ensure policies work in the best interest of the people of Sudan. Transfers of oil revenues to Southern Sudan and to other oil-producing states have been determined accordingly since 2005.

Sharing of non-oil revenue from federal sources in Southern Sudan is yet to be institutionalized. The CPA provides for the sharing of non-oil revenues from federal sources in Southern Sudan such as customs and immigration, airport taxes, etc. However, sharing of non-oil revenue has not yet [commenced] since an appropriate and agreed mechanism and institutional structure for [collection and] allocation of non-oil revenue from federal sources in Southern Sudan is yet to be put in place.

There is a need to better manage the oil revenue volatility, as a basis for budget credibility and better expenditure management. This is even more important for the GOSS given its nearly complete dependence on oil revenues. The current oil saving fund has failed to provide a sustained buffer from the inevitable volatility. Reserves accumulation and credible management of the oil savings account through a transparent governance structure is needed, along with progress on non-oil revenue reforms.

Table A1. Revenue Collection/Sharing Arrangement in Sudan

| National Government | Government of Southern Sudan (GOSS) | States/Regions |
|---|--|--|
| Oil revenues (according to the sharing formula) | Oil revenues and the National revenue share to the GOSS from the National Revenue Fund | State/Regional share of oil Revenues (from the National Government) |
| National Personal Income Tax | Southern Sudan Personal Income Tax | State/Regional Personal Income Tax |
| VAT or GST or other retail taxes on goods and services | | Agricultural Taxes; Stamp duties; Licenses; Levies on Tourism |
| Customs Duties and import taxes | | Border Trade charges or levies |
| Corporate or Business Profit Tax | Taxes and levies on small and medium business | |
| National Government Enterprises and projects | GOSS enterprises and projects | State/Regional Government projects and state/regional nature parks |
| Service charges | Service charges of the Government of Southern Sudan | Service charges for state/regional services |
| Excise Tax | Excise taxes on luxury consumables | Excise taxes |
| Sea-ports and Airports Revenue | The Southern Sudan Reconstruction and Development Fund (SSRDF) | State/Regional Land and property tax and royalties |
| Loans, including borrowing from the Central Bank and the public | Loans and Borrowing in accordance with the Agreement | Loans and borrowing in accordance with the Agreement |
| Any other tax as agreed to from time to time | Any other taxes as may be agreed to from time to time | Any other tax as may be agreed to from time to time |
| | Grants in Aid and Foreign Aid | Grants in Aid and Foreign Aid through the National Government and the GOSS |
| | Other GOSS Taxes, which do not encroach on the National Government | Other state/region taxes which do not encroach on national or GOSS taxes |
| | Revenue from the state/region revenue sources | |

Source: The Comprehensive Peace Agreement between The Government of The Republic of The Sudan and The Sudan People's Liberation Movement/Sudan People's Liberation Army.

Table A2. Comparison of Selected Statistics on Subnational Governments for Countries (2006)

| | DRC | Ethiopia | Nigeria | Bolivia | Colombia | Mexico | Macedonia | Kosovo | China | Indonesia | Sudan |
|--|-------|----------|---------|---------|----------|--------|-----------|--------|---------|-----------|-------|
| Population (in millions) | 57.5 | 73 | 136.3 | 9.4 | 46.0 | 103.1 | 2.0 | 2.2 | 1,307.6 | 219.2 | 35.3 |
| Area size (in km ² millions) | 2.3 | 1.0 | 0.9 | 1.1 | 1.1 | 1.9 | 0.025 | 0.004 | 9.3 | 1.8 | 2.4 |
| Type of government 1/ | U | F | F | U | F | F | U | U | U | U | U |
| No. of states/provinces | 11 | 11 | 37 | 9 | 33 | 32 | ... | ... | 31 | 33 | 25 |
| No. of municipalities | 216 | 497 | 774 | 112 | 1,119 | 2,454 | 84 | 33 | 345 | 440 | 133 |
| Min size of municipality (in persons) | ... | 3,617 | 19,710 | 1,287 | 242 | 102 | 1,331 | 5,000 | 74,263 | 14,065 | ... |
| Avg population of state/province (000s) | 5,227 | 6,636 | 3,684 | 1,044 | 1,394 | 3,222 | ... | ... | 42,181 | 6,642 | 1,412 |
| Avg area of state/province (in km ² 000s) | 209 | 91 | 24 | 122 | 33 | 59 | ... | ... | 300 | 55 | 95 |
| Avg population of municipality (000s) | 266 | 147 | 176 | 84 | 41 | 42 | 24 | 67 | 3,790 | 498 | 265 |
| Avg area of municipality (in km ² 000s) | 10.6 | 2.0 | 1.2 | 9.8 | 1.0 | 0.8 | 0.3 | 0.1 | 27.0 | 4.1 | 17.9 |
| Avg no. of municipalities per state/province | 19.6 | 45.2 | 20.9 | 12.4 | 33.9 | 76.7 | | | 11.1 | 13.3 | 5.3 |

1/ F=federal; U=unitary

Source: WDI (2006); IMF (FAD) staff.

APPENDIX III. RECENT FISCAL PERFORMANCE IN SUDAN

A. Fiscal Stance

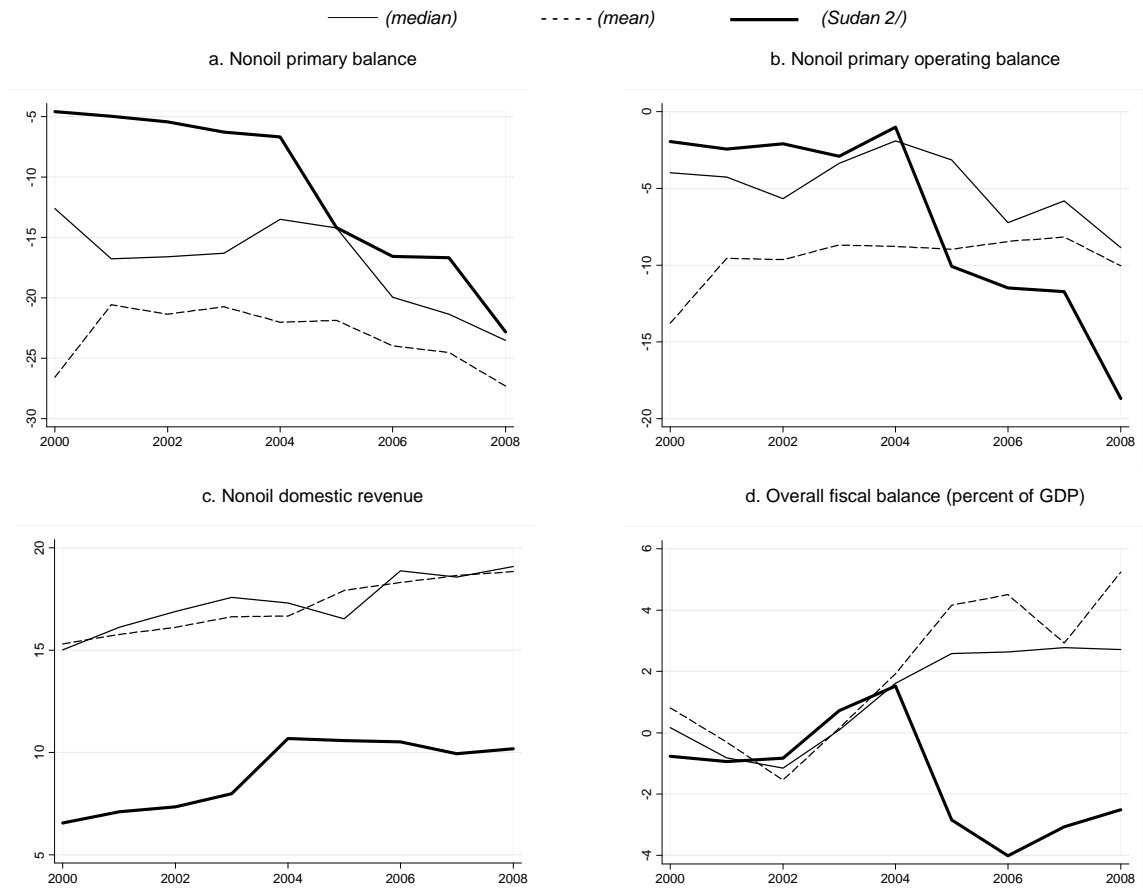
Most of Sudan's fiscal stance indicators over the last decade (as well as over various sub-periods), have lagged those of other oil producing countries. As can be seen from Figure 3, Sudan's non-oil domestic revenue – at around 10 percent of non-oil GDP – remained well below the group average/median (around 18 percent). Although Sudan's non-oil primary balance (NOPB) lay well above its comparators' for most of the period, the gap began narrowing since 2005 (the year the CPA and the associated fiscal federalism arrangements came into force), and was eliminated by 2008. Further, since oil accounts for a much smaller share of GDP in Sudan (one-sixth) than it does on average in the comparator group (one-third), an identical NOPB ratio for Sudan implies a weaker fiscal stance relative to comparators.²⁴ This is confirmed by the large excess of Sudan's overall deficit to GDP ratio over that for other countries, especially in the period after 2004.

Moreover, the oil boom that started in 2005 and peaked in mid-2008, led to a deterioration in Sudan's fiscal position that was greater than that witnessed in the median comparator country (Figure 4). This is particularly true for the last two years, wherein Sudan fared worse than most comparators on non-oil revenue and overall balance, and worse than the median country on both the NOPB and the non-oil primary operating balance (Figure 5).²⁵ It could be argued that treating all transfers to subnational governments as current spending yields a somewhat misleading and unfair comparison for Sudan, given its relatively higher transfers share in expenditure. However, preliminary data on the composition of subnational spending suggests that most of the transfers have been targeted to current uses, so that the comparison, in fact, is reasonable.

²⁴ Shares are based on nominal non-oil and total GDP figures for Sudan and the comparators over 2000–08.

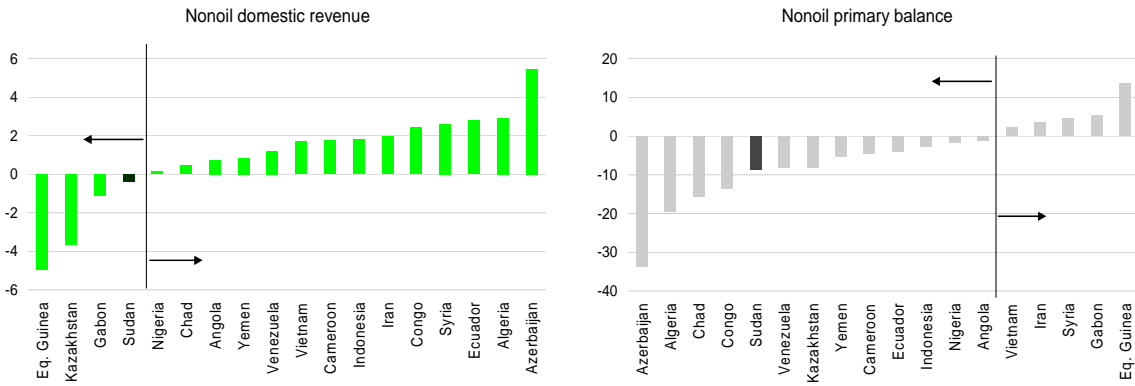
²⁵ Capital spending is excluded from expenditures in the latter concept.

Figure A2. Evolution of Key Fiscal Indicators in Sudan vs. 18 Oil Producing Countries (percent of non-oil GDP) 1/



1/ The countries covered are: Algeria, Angola, Azerbaijan, Cameroon, Chad, Congo, Ecuador, Equatorial Guinea, Gabon, Indonesia, Iran, Kazakhstan, Nigeria, Sudan, Syria, Venezuela, Vietnam and Yemen.
 2/ For cross-country comparability, the nonoil indicators shown here (and in Figures Y and Z) are based on total expenditures (unadjusted for oil-related subnational transfers). This results in an overstatement of the nonoil deficits in fiscally federal countries like Sudan, where oil-related subnational transfers account for a large part of total spending. The nonoil balance definition used for Sudan in the rest of the paper duly adjusts expenditures down for such transfers.

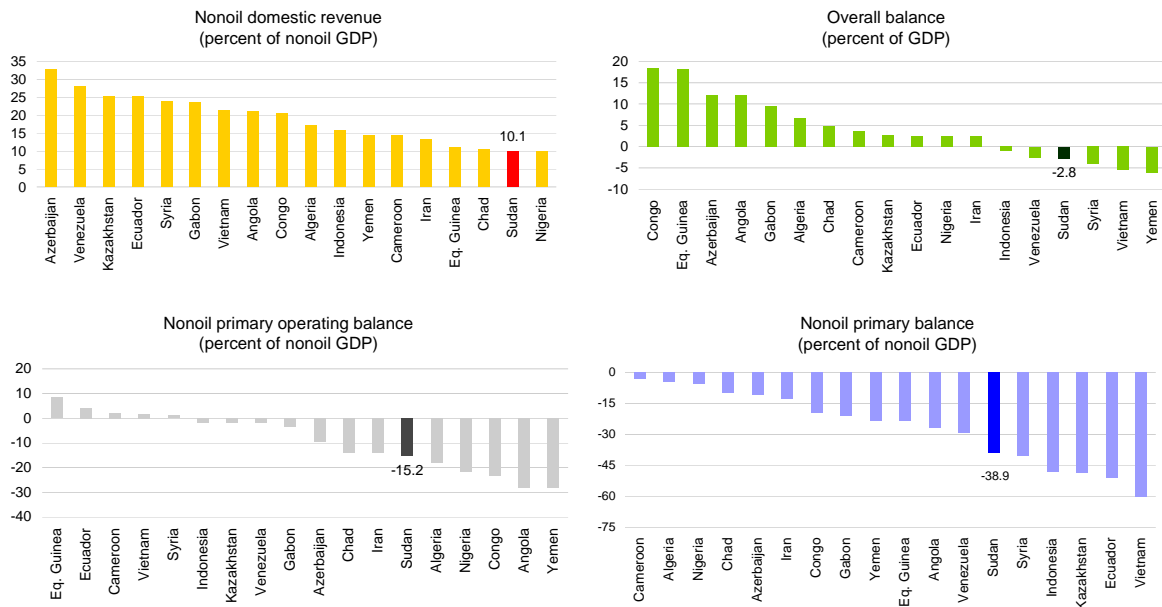
Figure A3. Change in Fiscal Indicators in 18 Oil Producing Countries during 2005–08
(percentage point increase in ratio to non-oil GDP 1/)



1/ 2008 values are estimates

Source: IMF staff estimates

Figure A4. Fiscal Indicators in 18 Oil Producing Countries
(average for 2007–08)

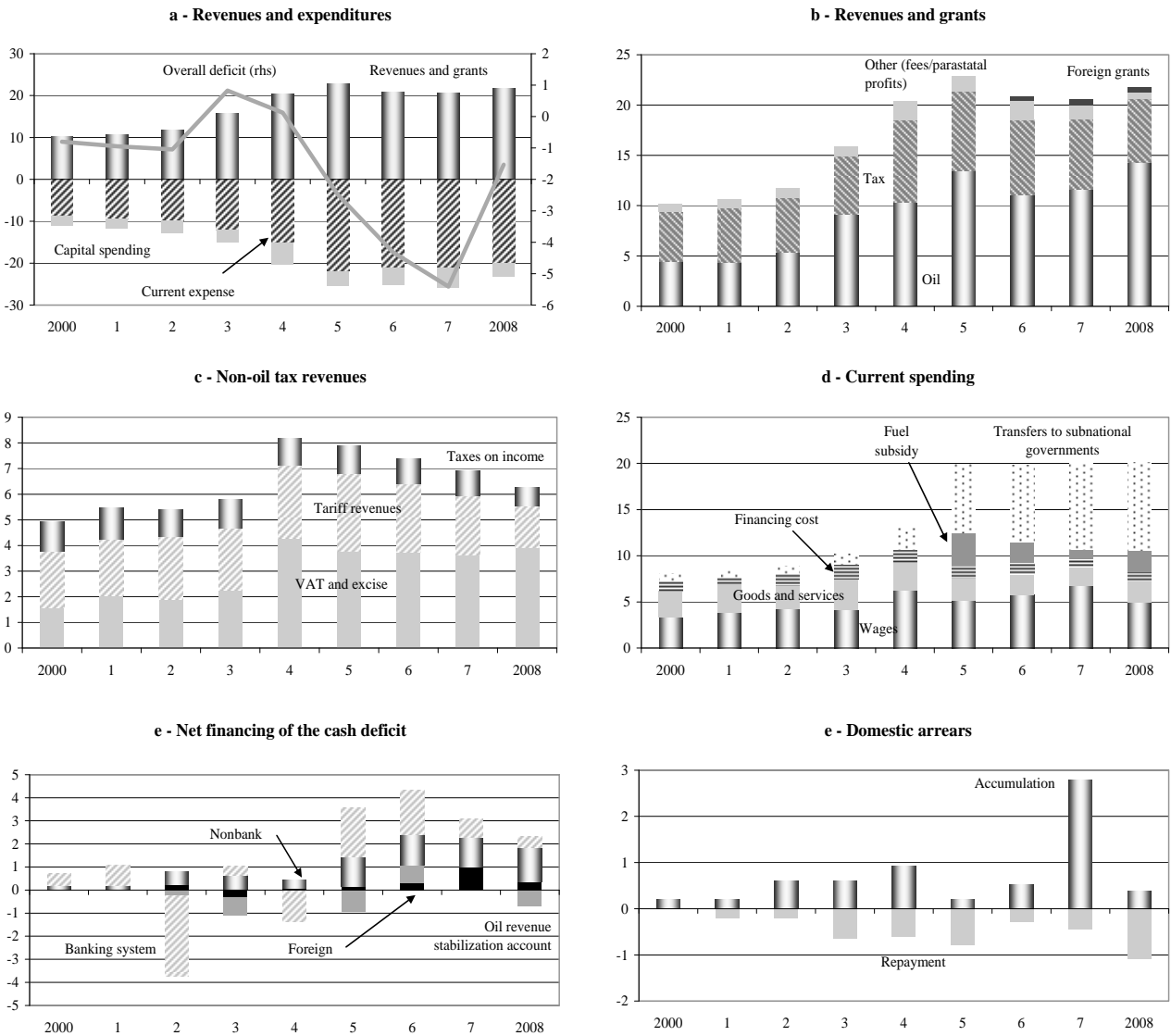


Source: IMF staff estimates

A closer look at the evolution of key fiscal aggregates reveals structural pressures arising from rising current spending, weak non-oil revenues and lack of financing options. Over 2000–08, the government’s current expenditure tripled, to over 20 percent of GDP, with capital expenditures rising much more modestly, to a 4 percent of GDP level. The increase in expenditures has been financed, in the main, by oil revenues and domestic borrowing (both from the banking system and the nonbank sector). With gross bank financing offset by net oil revenue stabilization account (ORSA) savings over 2000–08, and foreign financing averaging less than ½ percent of GDP, resort to unconventional promissory notes (letters of guarantees, standing orders, sanadats), and outright domestic arrears has been common. The accumulation of arrears has increasingly exceeded their clearance in recent years, allowing the commitment deficit to be larger than the cash deficit. More problematically, large arrears in 2007 on bank-held government debt and suppliers payments induced serious problems in the banking system, pushing the overall non-performing loan ratio above 50 percent.

Non-oil tax revenues have grown dismally from a very low base of about 5 percent of GDP. Except for the 2004 spike in goods and services taxes, associated with VAT and excise duty reforms, collection has not exceeded 6 percent of GDP. Particularly worrying is the declining tax/GDP trend over the last five years, attributable partly to the fall in import tariff rates to Arab Free Trade Area and COMESA member countries. The resulting loss in tariff revenue has, in line with the predictions of Baunsgaard and Keen (2005), not been compensated by other revenue sources, domestic or foreign. Weaknesses in tax administration (discussed later), government complacency about other non-oil revenue collection (parastatal/joint venture profits and departmental fees), weak aid response by donors due to concerns over Darfur, and the fundamental difficulty of enforcing direct taxes in a fragile politico-economic setting, have all contributed to the slide in non-oil revenues.

Figure A5. Evolution of Revenues, Expenditures and Financing in Sudan, 2000–08
(percent of GDP)



Source: IMF staff estimates

B. Structural Fiscal Reforms

A number of important structural fiscal reform initiatives have been witnessed over the past few years, but the pace and quality of implementation has been mixed. On the *tax policy* side, the corporate income tax regime was reformed in 2008, with the unification, at 15 percent, of the business profit tax rate across sectors, and withdrawal of the authority to grant new income tax holidays for businesses (domestic and foreign) under the Investment Encouragement Act. A 3 percent net profit tax on otherwise grandfathered exempt businesses was also imposed. These were politically difficult but important measures, which would likely generate dividends in the future. On the VAT side, the finance minister's power to

grant exemptions was withdrawn (the power is now vested in the council of ministers and has not been used so far), and the VAT rate consolidated at 15 percent (although, the rate for telecoms was raised to 20 percent in January 2009, creating a two-tier structure). The measures to stop the flow of new VAT exemptions has helped, but does not reduce the large existing stock of VAT exemptions granted on capital goods, final good imports by many business and non-business entities, and major domestic sectors (such as electricity, agriculture, water, in-city transportation and commercial rentals).

Reforms in the area of *revenue administration* have been impressive on paper, but have not translated into revenue yield. The major initiatives in the last few years have included the establishment of a large taxpayer office (LTO) for the top 300 companies (that account for about 70 percent of domestic tax collection), and the medium taxpayers office (MTO) for the next 1,300 businesses; adoption of a new function-based headquarters structure for the taxation chamber; and the introduction of self-assessment for large corporate and individual taxpayers. Although the LTO and MTO appear to be working well, the reorganization of the taxation chamber is still not complete, in part due to lack of a comprehensive modernization strategy to accompany the restructuring effort. The use of unique taxpayer identification numbers across customs and tax agencies is still pending, and jurisdictional issues (federal-vs.-state) over the taxation of large individual taxpayers remain unresolved.

Reforms on the *expenditure policy* side have been inadequate. The privatization process has also remained slow due to disputes surrounding non-uniform retrenchment packages across parastatals. A one-time fuel subsidy adjustment was made in mid-2006 by raising the ex-refinery price to US\$49/barrel. However, the price was allowed to stay at this level during 2007–08 even when oil prices reached the US\$147/bbl level. The result was a fuel subsidy cost of over 4 percent of GDP in two years, one third of which is the direct cost of subsidizing imported refined products, the demand for which soared in 2007–08 and rendered Sudan a net refined fuel importer in 2008. Moreover, Sudan still does not have a targeted social safety net program, which inhibits the government’s ability to cost-effectively support vulnerable segments of its populace.

***Public financial management* reforms centered on budget classification, finance ministry reorganization and commitment control.** While Sudan did well to adopt the *GFSM* 2001 classification for the federal budget with a view to increasing transparency and facilitating consolidated fiscal reporting, there is a long way to go in terms of modifying the chart of accounts, clarifying the treatment of financing and cash-vs.-commitment expenditure concepts, and extending the classification to extra-budgetary units and subnational governments. Although a centralized domestic debt unit was established in 2008, capacity is low, and good quality regular domestic debt reporting remains elusive. With volatile oil revenues and political pressures rendering some of the recent budgets under funded (ex-post),

and revenue or financial shortfalls have typically translated into arrears.²⁶ Cash-informed expenditure ceilings have proved only partly effective in controlling commitments, although recent developments have been more encouraging. Cash management has remained weak with arrears being run up at the same time as spare balances accumulated in line ministries' accounts. Progress towards establishing a Treasury Single Account began in 2007, but were thwarted by software procurement problems related to US sanctions on Sudan.

An enduring PFM shortcoming is the absence of a multi-year budget planning framework and the reliance on conventional, rather than non-oil fiscal indicators. It is well documented that public spending moves in sync with rising oil revenues (although its quality typically falls) which renders fiscal policy—as measured by non-oil fiscal indicators—extremely procyclical, and complicates macroeconomic management (Medas and Zakharova, 2009).²⁷ Multi-year budgets and/or oil revenue stabilization accounts, that tie spending to some sustainable trajectory for the NOPB (and non-oil revenue) can help cushion the macroeconomy against sudden oil revenue shocks. However, with Sudan's political economy evolving on a year-to-year basis, multi-year budgeting and excess oil revenue saving have, thus far, been elusive ideals. Most of the higher-than-budgeted oil revenues accumulated in the oil revenue stabilization account (ORSA) during a year, have been spent in the same year. As a result, less than one-tenth of the cumulative 2007–08 oil revenue windfall (approaching 10 percent of GDP) remained at the end of 2008. Similarly, latent concerns about the erosion of declining non-oil revenues and rising fuel subsidy costs have not been matched, until recently, by actions to transparently set/track non-oil fiscal targets.

²⁶ Domestic debt instruments in Sudan have to be linked to real government assets (under the Islamic banking system) and foreign grants and financing are tied entirely to projects. These add rigidities to the financing side, leaving inflationary finance as the only possible short-term option to bridge resource shortfalls.

²⁷ Blanket fuel subsidies further exacerbate this procyclicality.

APPENDIX IV. TAX RATES AND EXEMPTIONS IN SUDAN

| Personal income tax (salaries and wages) | | Business profits tax - individuals | |
|--|-----------------|------------------------------------|----------|
| <u>Annual income (SDG)</u> | <u>Rate (%)</u> | Annual income (SDG) | Rate (%) |
| 9,050 | Exempt | 3,000 | Exempt |
| next 120 | 5 | 3,000 | 5 |
| next 240 | 10 | 4,000 | 10 |
| exceeding 240 | 15 | Above 4,000 | 15 |

| Business profits tax - corporations | |
|-------------------------------------|-----------------|
| <u>Type of company</u> | <u>Rate (%)</u> |
| Industrial | 10 |
| Commercial | 15 |
| Agricultural | 0 |
| Banks and insurance | 15 |
| Petroleum production | 35 |
| Petroleum distribution | 15 |
| Tobacco and cigarettes | 35 |

Tax rate amendment dates

- Business profits tax – individuals: January 2006 – 35%; January 2007 – 30%; January 2008 – 15%
- Business profits tax – corporations:
 - Agriculture: from 5% to 0% in March 2001
 - Industry: from 35% to 10% in July 2003
 - Banks and insurance: January 2006 – 35%; January 2007 – 30%; January 2008 – 15%
 - Commercial companies: January 2006 – 35%; January 2007 – 30%; January 2008 – 15%
 - Development tax: January 2008 – 3% of net profits of exempted person (companies and individuals)
- VAT:
 - standard rate: from 10% to 12 % in June 2007 and to 15% in January 2008
 - telecommunications: from 15% to 20% in January 2009

Summary of key exemptions areas

Business profits tax

- Agricultural sector and animal products
- Valid investment exemptions
- Exemptions agreements such as for the sugar
- Telecommunications sector
- Insurance sector
- Private education

VAT

- Agricultural products
- Companies exempted under agreements
- Capital goods
- Financial services, rents and insurance
- Water and electricity
- Fertilizers

Source: Taxation Chamber

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