



SUDAN

SELECTED ISSUES

October 2013

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SELECTED ISSUES

Approved By
**Middle East and Central
Asia Department**

Prepared by Paul Jenkins (MCD), Yoon Kim (FAD),
Haiyan Shi (MCD), and Kerstin Gerling (SPR).

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MONETARY TRANSMISSION MECHANISM IN SUDAN¹

This chapter examines the monetary policy framework in Sudan, and assesses the effectiveness of monetary transmission mechanism since the secession of South Sudan. The econometric analysis concludes that reserve money, the exchange rate, and private sector credit are the main determinants of inflation after the secession of South Sudan and that the transmission lags have been shortened significantly compared with previous studies. These findings reinforce the need for a comprehensive package of fiscal and monetary measures that strengthens the monetary policy framework and improves its effectiveness.

A. Introduction

1. Sudan faces difficult challenges in the conduct of its monetary policy following South Sudan's secession in 2011. Sudan's economic conditions deteriorated rapidly after this permanent shock. The fiscal deficit widened owing to the loss of oil revenues and delays in fiscal adjustment. Monetization of the fiscal deficit led to high inflation, which reached 47.8 percent in March 2013. An understanding of the effects of monetary policy on macroeconomic variables (such as output, employment and prices) and the channels through which these effects are transmitted is critical for effective policy formulation and timely implementation, and for ensuring macro-financial stability.

2. The aim of this chapter is to examine issues relating to the monetary policy framework and the monetary transmission mechanism in Sudan since the secession of South Sudan. As the structure of the banking system and the degree of domestic financial development have a significant bearing on the effectiveness of monetary transmission, the analysis is cast against the background of the main institutional features of Sudan's Islamic banking system.

3. The rest of the chapter is organized as follows: Section B reviews the monetary policy framework in Sudan. Section C assesses the effectiveness of the monetary transmission mechanism and analyzes the challenges facing the monetary authorities. Section D presents the model and estimation results. Section E concludes and provides policy recommendations.

B. Monetary Policy Framework

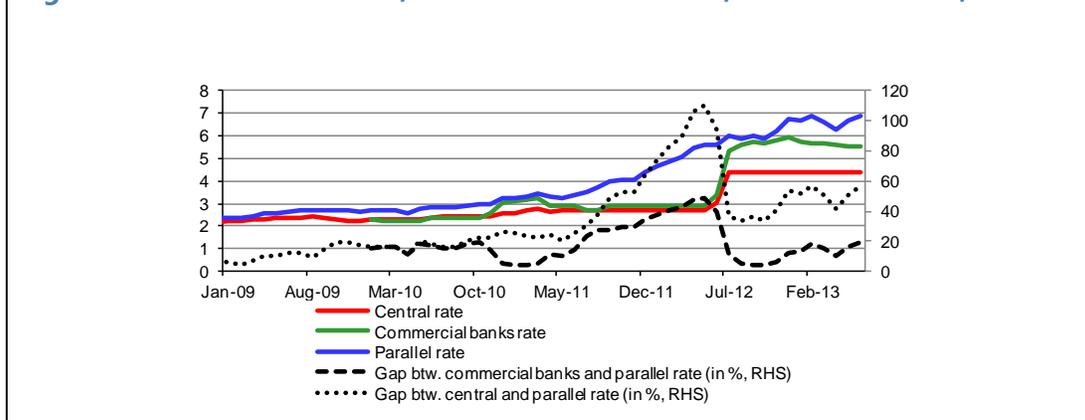
4. In principle, a fixed exchange rate policy provides the anchor for Sudan's monetary policy framework, but its effectiveness is weakened by the prevailing system of multiple exchange rates. Sudan's exchange rate regime pivots around the following rates: (i) a central rate of SDG 4.42 per U.S. dollar that applies also to the importation of fuel products, the payment of government obligations, and valuation assessment at customs; (ii) a subsidized rate for wheat of SDG 2.9 per U.S. dollar; (iii) a gold exchange rate used by the central bank in its gold transactions,

¹ Prepared by Haiyan Shi. The author would like to thank the Sudanese authorities for sharing the data, seminar participants at the Central Bank of Sudan for useful comments, and Yi Liu, Patricia Poggi and Nour Mohamad Ibrahim for excellent assistance.

which is in line with the curb market rate; and (iv) a commercial bank rates that applies to all other transactions.

5. The recourse to multiple exchange rates raises the need for another anchor for monetary policy. Moreover, access to foreign exchange is hindered by some restricted administrative measures. The shortage of FX and the resulted exchange rationing have driven virtually all private sector transactions to the parallel market. The gap between the commercial banks rate and parallel market exchange rates reached a peak of almost 48.5 percent in May 2012. After the 66 percent devaluation of the central rate in June 2012, the gap declined to about 3 percent before rising again to stand about 20 percent at end-June 2013 (Figure 1).

Figure 1. Sudan: Central Rate, Commercial Banks Rate, and Parallel Rate, 2009–13

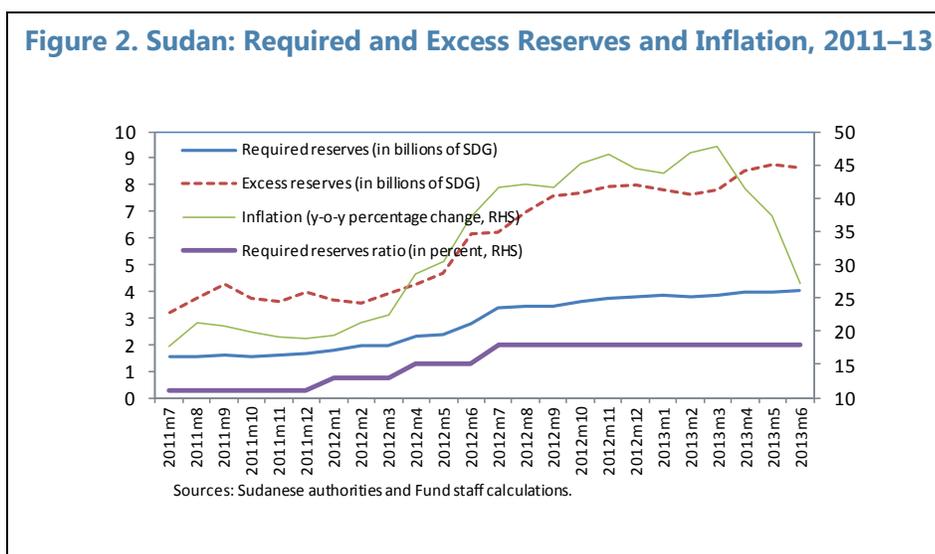


6. With a full-fledged Islamic banking system, the monetary policy framework lacks adequate instruments for monetary operations, liquidity management, and non-inflationary financing of government deficits.² Under an effective monetary policy framework, the central bank would use debt-based instruments in the interbank money market and government security market to inject or mop up the flow of liquidities from the banks and transmit its policy intentions. Under the Islamic mode of finance, debt-based instruments cannot earn a positive rate of return through interest and cannot be discounted in a secondary market. However, equity-based securities can be traded in the open market, with trading values reflecting market expectations of economic performance, and rates of return. Designing equity-based instruments linked to government or central banking operations can pose significant difficulties because of complexities in computing appropriate profits and rates of returns.³ These constraints have limited the development of efficient instruments for interbank market and central bank credit facilities.

² See Sundararajan, Marston, and Shabsigh (1998).

³ In Sudan, the process of calculating return on most government securities depends on the audited accounts certified by the authorized bodies. The securities issued by the Central Bank of Sudan are based on Ijara mode, where its return is determined in advance.

7. As a result, the monetary policy framework of Sudan has to rely on the conventional instruments for regulating money supply, using quantitative control by fixing ad hoc credit ceilings and imposing high unremunerated reserve requirements. In 2012, Central Bank of Sudan (CBOS) raised the required reserve ratio three times from 11 percent to 18 percent. This has not proven to be an effective way of controlling money supply nor is it conducive for economic development. The absence of an active interbank money markets has led to large excess reserves and a loss of monetary control when CBOS continues to provide credit to individual banks while lacking flexible means to mop up excess liquidity (Figure 2). As in other Islamic banking systems, the lack of adequate monetary instruments has led to high intermediation cost and persistent inflationary pressures.



8. Monetization of the rising fiscal deficits has further undermined the effectiveness of monetary policy in achieving any nominal target and has forced the CBOS to follow an accommodative monetary policy stance, particularly after the secession of South Sudan. The rising fiscal deficit after the session has been mostly financed by the CBOS, resulting in rapid monetary expansion that reached 40 percent at end of 2012 (Figure 3). Inflation reached a peak of 47.8 percent in March 2013, nearing hyperinflation. At this high inflation rate, fiscal policy and monetary policy tend to become virtually inseparable⁴ and central bank independence is significantly weakened, thus undermining its ability to ensure price stability. A comparison with some other MENA oil importer countries show that Sudan's heavy reliance on seigniorage to finance its fiscal deficits led to the highest inflation among the oil importers in the region by end of 2012 (Figure 4).

⁴ See Debelle, Masson, Savastano, and Sharma (1998).

Figure 3. Sudan: Net Credit to Central Government, 2011–13 1/ (In billions of SDG)

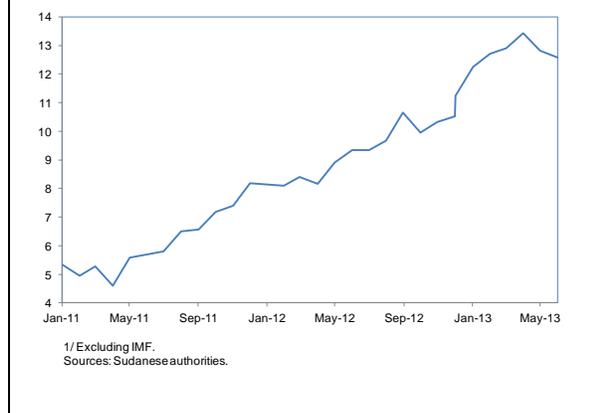
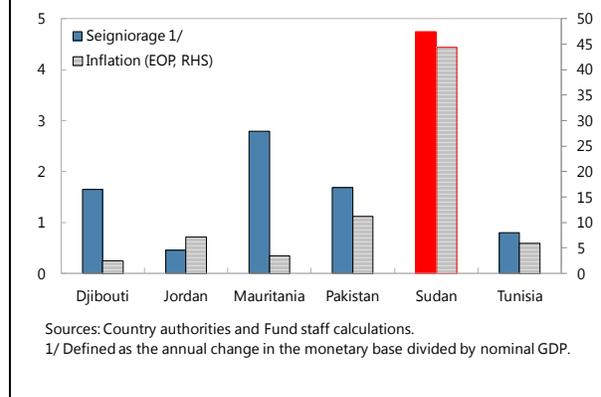


Figure 4. Selected MENA Importers: Seigniorage and Inflation, 2012



C. Channels of Monetary Transmission

9. According to Mishra, Montiel, and Spilimbergo (2012), there are four main channels of monetary transmission:

- *Interest rate channel.* An increase in real interest rates raises the cost of capital, leading to a decline in investment spending and decrease in aggregate demand and output.
- *Asset price channel.* There are two basic channels involving asset prices that are important to the monetary transmission mechanism: Tobin's q theory of investment and wealth effects on consumption. Monetary policy affects the economy through its effects on the valuation of assets. q is defined as the market value of firms divided by the replacement cost of capital. If q is high, the market price of firms is high relative to the replacement of capital and new plant and equipment capital is cheap relative to the market value. Hence, investment spending will rise. In addition, if asset prices rise, the value of financial wealth increases which will lead to higher lifetime resources of consumers and consumption will rise.
- *Exchange Rate Channel.* The exchange rate channel works through the impact of monetary developments on exchange rates and aggregate demand and supply. For example, an increase in interest rates would normally lead to an appreciation of the exchange rate, which lowers the price of imported goods and services and thereby pushes down domestic inflation. The effectiveness of the exchange rate channel depends on the exchange rate regime, the extent of exchange rate pass-through and the degree of openness to capital flows.
- *Bank Lending Channel.* The bank lending (or credit) channel works through the response of credit aggregates to changes in interest rates and other policy instruments. Therefore, the credit channel is an extension—an enhancement mechanism—to the interest rate channel and amplifies the real effects of monetary policy through changes in the supply of bank

credit. The necessary condition for the credit channel to operate is the significant role of banks as a source of capital for the private sector.

10. In Sudan, the first two channels are not likely to be strongly developed because the necessary institutional prerequisites are absent. The interest rate channel is not effective in Sudan as the Islamic banking system prohibits interest rate and existing interbank market does not carry any interest rate and is not well developed. As the interbank money market is very shallow, monetary policy implementation is constrained by the shortage of marketable policy instruments. The equity and bond markets are not developed as well. Based on data from the Khartoum Stock Exchange, the total market capitalization is less than 4 percent of GDP in 2012. This leaves only the exchange rate and bank lending channel.

11. There are several empirical studies focusing on the monetary transmission mechanism in Sudan. Moriyama (2008) investigated inflation dynamics in Sudan using three different approaches: the single equation model, the structural vector-auto regression model and a vector error correction model with data spanning 1995Q1 to 2007Q2. The estimated results concluded that money supply and nominal exchange rate changes affect inflation with 18-24 month time lag. Jabrallah and Hasan Mohamed (2008) used impulse response analysis and the GARCH model with monthly data from July 1995 to December 2007. Their study suggested that the change in money supply will be reflected in the inflation after about 7 to 10 months. Abdoun (2012) used a model consisting of three equations: (i) an equation explaining price developments for tradable; (ii) an equation explaining price developments for non-tradable; and (iii) an equation deriving inflation as a function of both tradable and non-tradable inflation. The main model was estimated over period 1998Q1-2011Q4, and two sub-models were estimated relative to the high and low inflation periods, respectively. The estimation results found that the exchange rate, reserve money, fiscal monetization and wages are key determinants of inflation.

D. The Model

12. This chapter will focus on the monetary transmission mechanism in Sudan after the secession of South Sudan. As the secession of South Sudan is a major structural change in the economy, it is appropriate to study the monetary transmission against this background. Because the sample period after the session is very short and Sudan does not compile quarterly GDP data, it is not feasible to include output in this analysis. Instead the study would focus on how the accommodative monetary policy transits into near hyperinflation in a short period which would certainly hurt future growth.⁵ The model regress the inflation rate (y-o-y percentage change) on the three independent variables: reserve money, nominal effective exchange rate based on the parallel exchange rate⁶ and credit to the private sector (all monthly data and y-o-y percentage changes from

⁵ Khan and Senhadji (2000) have shown that high inflation would have a negative impact on growth after exceeding a threshold which is 7-11 percent for developing countries.

⁶ When there is a multiple exchange rate regime, the official exchange rate may not be the relevant variable but the parallel market rate.

July 2011 to June 2013). All the regressions have been done using the OLS methodology. The following model is used:

$$Y = \text{constant} + a \cdot \text{RM} + b \cdot \text{NEER} + c \cdot \text{PrivateCredit}$$

where Y is inflation rate, RM is reserve money, NEER is nominal exchange rate based on the parallel rate and PrivateCredit is credit to the private sector. The estimation uses lagged values of the three explanatory variables.

13. The estimation results suggest that expansionary monetary policy led to high inflation in Sudan through the exchange rate channel and bank lending channel. The results are presented in the Table 1:

- As expected, reserve money has a positive and significant effect on inflation rate and there is a lag of between 4 to 5 months. This suggests that the monetization of the deficits does lead to high inflation but with a lag of 4 or 5 months.
- Credit to the private sector also has a positive and significant effect on the inflation rate with no lags.
- The effect of the NEER is significant with a lag of 3 and has the correct sign, i.e., a devaluation of the exchange rate will fuel inflation.

Dependent variable: inflation rate	(1)	(2)
Reserve money (lag 4)	0.542*** (0.168)	
Reserve money (lag 5)		0.522*** (0.150)
NEER (lag 3)	-0.402* (0.202)	-0.403* (0.191)
Credit to the private sector	0.545*** (0.078)	0.601*** (0.065)
Constant	-3.649 (7.250)	-3.664 (6.925)

Note: * denotes significant at 10 percent level; ** denotes significant at 5 percent level; *** denotes significant at 1 percent level.

14. Compared with the results of previous studies (Table 2), this study also suggests that the reaction lags of inflation to the reserve money and exchange rate have been shortened dramatically after the secession; i.e. expansionary monetary policy has transited into higher inflation at a higher speed. This is not a surprise as the previous studies covered both high inflation and low inflation period while the period under study only relates to high inflation. As inflation is known to have downward stickiness due to rigidities in labor market, i.e., "inflation inertia," a deflationary monetary policy is expected to take longer period to have the desired impact on reducing inflation.

Table 2. Sudan: Estimation Results of Previous Study

Studies:	Cover period	Lags identified by changes of money supply on inflation
Moriyama (2008)	1995:Q1 - 2007:Q2	18-24 month
Jabrallah and Hasan Mohamed (2008)	July 1995 - December 2007	7-10 month

E. Policy Recommendations

15. The econometric analysis above concludes that reserve money, the exchange rate, and private sector credit are the main determinants of inflation after the secession of South Sudan and that the transmission lags have been shortened significantly compared with previous studies. These findings reinforce the need for a comprehensive package of fiscal and monetary measures that strengthens the monetary policy framework and improves its effectiveness.

16. Monetary policy should be supported by a prudent fiscal policy. The monetary policy framework in Sudan is hampered by fiscal policy dominance and reliance on central bank financing of the budget deficit. Only a comprehensive stabilization program comprising fiscal consolidation, a corresponding reduction in central bank financing of the deficit, will achieve a lasting reduction in the current high rate of inflation. In addition, due to the “inflation inertia” (inflation expectations are sticky downward) and the response lags of inflation to policy, decisive and rapid implementation of the stabilization program is necessary to anchor inflation expectation and achieve price stability.

17. Reforms of the monetary and financial system are needed to strengthen the monetary policy framework. A clear central bank mandate for operational independence and accountability needs to be established to pursue price stability. Improving transparency in the conduct and evaluation of monetary policy would make the monetary transmission mechanism more effective. Development of adequate toolkits for money market trading and central bank credit facilities are necessary to dampen inflationary pressures and improve the effectiveness of monetary policy and banks’ liquidity management.

18. The unification of the multiple exchange rates should be given priority. As the central rate no longer serves as a nominal anchor and almost all private sector foreign exchange transactions are already being executed at the parallel market rate, most prices already reflect the parallel market exchange rate and the unification of the exchange rates is unlikely to have significantly inflationary effects. Unification would discontinue the practice of direct and subsidized credits through preferential exchange rates which would further dampen inflationary pressure through the credit channel.

19. In view of the strong correlation between reserve money and inflation, the monetary policy framework can be improved by focusing on using reserve money as the nominal anchor. This study confirmed the robustness of the previous studies that reserve money remains largely determinant in times of high inflation. Focusing using reserve money would improve the effectiveness of monetary transmission mechanism.

20. Terminating participation of financial institutions by the central bank would improve the effectiveness of monetary transmission mechanism through bank lending channel. Based on the outcome of the above analysis, growth of credit to the economy is a key determinant of inflation. Participation of financial institutions by the central bank would compromise the objective of the central bank to maintain price stability by fueling inflation pressure through directly and indirectly injecting liquidity to the private sector (such as capitalization of the banks).

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GOLD TAXATION IN SUDAN¹

Sudan's low revenue mobilization limits the fiscal space for ramping up physical and social infrastructure that is crucial to sustain economic growth and promote social fairness. One of the most effective and feasible way to enhance tax revenue is to streamline taxation on the gold sector. While the current system compares favorably to the systems in place in other gold producing countries it needs to be made more efficient by introducing progressivity on the large mining companies and extending the fiscal net to small producers.

A. Background

1. Despite the recent revenue reforms, the tax-to- GDP ratio in Sudan is still very low compared to its neighboring countries. In 2012, Sudan collected only 6.2 percent in tax revenue while the unweighted average tax revenue of regional peers was around 17 percent of GDP. Only the Republic of Congo and the Central African Republic has tax-to-GDP ratios at below 10 percent (Table 2).

Table 1. Sudan: Central Government Operations, 2006–16
(In percent of GDP)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
							Prel.	Proj.	Proj.	Proj.	Proj.
Oil and non-oil revenues	22.4	21.9	24.0	15.4	19.3	18.1	10.0	11.2	12.8	13.2	12.8
Taxes	7.6	7.1	6.7	7.0	6.6	6.4	6.2	6.1	6.2	6.3	6.4
Oil revenues	12.5	13.1	16.5	7.6	11.5	10.5	2.7	2.8	2.7	3.0	3.1
Grants	0.3	0.2	0.0	0.0	0.6	0.3	0.5	1.3	2.4	2.6	2.2
Other nonoil nontax revenues	2.0	1.5	0.8	0.8	0.6	0.9	0.6	1.0	1.6	1.3	1.1

Sources: IMF staff estimates and projections.

2. Sudan's different revenue structure can be explained by low tax rates, narrow tax bases, and weak tax administration. Low revenue collection would limit the fiscal resources available for physical and social infrastructure development which in turn hinder economic growth and social welfare. At the same time, increasing revenue by further taxing compliant taxpayers could cause some distortions; therefore revenue mobilization should be focused on broadening the tax base, increasing tax rates where appropriate and simplifying the tax system.

¹ Prepared by Yoon Kim (FAD).

**Table 2. Selected African Countries: Revenue Structure
(In percent of GDP)**

Country	Year	Total Revenue	Tax revenue
Sudan	2012	10.0	6.2
Algeria	2012	39.6	36.7
Central African Rep.	2012	16.4	9.9
Chad	2012	26.4	17.3
Congo, Dem. Rep. of	2012	30.5	16.7
Congo, Republic of	2012	41.9	8.9
Egypt	2010	25.1	14.1
Ethiopia	2011	16.7	11.5
Ghana	2011	21.8	15.0
Kenya	2010	21.1	19.5
Morocco	2011	35.2	24.8
Tanzania	2012	21.8	14.3
Tunisia	2010	29.5	20.4
Uganda	2011	14.8	12.3
Unweighted average 1/		26.2	17.0

Source: IMF staff estimates.

1/ Excluding Sudan.

3. This paper reviews the need to rationalize the taxation of the gold sector as one of the most promising targets for revenue mobilization. Gold is Sudan's most important export earner, and its importance has increased in recent years. In 2008, the sector accounted for approximately 1 percent of export earnings. The share has increased to over 40 percent in 2012 and is projected to account for one third of total export in the medium term. The increase in the export share reflects the sharp rise in its prices and expansion of gold production. However, the gold sector is estimated to account for less than 0.1 percent of total tax revenues in 2011.² Hence, streamlining of taxation on gold is desirable.

**Table 3. Sudan: Structure of Exports, 2008–16
(In millions of USD)**

Exports (fob)	2008	2009	2010	2011	2012	2013	2014	2015	2016
					Est.				
Total exports	12,628	8,087	12,700	11,063	5,174	5,166	5,785	6,440	6,423
of which Oil exports	12,052	7,067	10,991	8,679	2,012	2,529	3,182	3,718	3,698
of which Crude oil	11,804	6,839	10,702	8,378	1,755	2,206	2,776	3,244	3,226
Petroleum products	249	228	289	301	257	322	406	474	472
Non-oil products	576	1,020	1,709	2,384	3,162	2,637	2,603	2,722	2,725
of which Gold	112	403	1,018	1,442	2,158	1,934	1,911	1,993	1,964
Volume (tons)	4	13	26	29	48	49	50	51	53
Unit value (\$/kg)	27,640	30,830	38,840	49,832	45,298	39,759	38,319	38,785	36,893

Sources: IMF staff estimates and projections.

² Business profit taxes from four gold producing companies are estimated to be 0.9 million SDG in 2010 and 1.7 million SDG in 2011.

B. General Principles of Natural Resource Taxation

Rationale for natural resource taxation

4. Four generic features make natural resource extraction distinctive from other productive economic industries. The citizens are the ultimate owners of natural resources; the extraction is a process of asset depletion rather than production using renewable inputs; investment in extraction has high sunk costs and long payback periods; and minerals have high price volatility.

5. How mineral wealth can best be translated into socio-economic development, is a key issue for many countries, including Sudan. The rationale for putting in place a special natural resource taxation regime is the existence of large potential economic rents³ in the industry. From the government's viewpoint, the perfect tax system would be to tax away all economic rents above the normal profit and leave the appropriate after-tax return required by investors. Though economic rent is a clear theoretical concept, it is difficult to define in practice. It would be impossible to know how much rent exists in advance, and even ex post there are difficulties in measuring it. The key issues with measuring rents are that: (i) the extent and profitability of a particular mine cannot be known with certainty; (ii) rent should be measured over the entire project lifecycle, including by taking into account the costs of failed explorations; and, (iii) economic rent may be difficult to differentiate from managerial rents for special expertise, and technology.

6. That the amount of economic rents generation varies from mine to mine is another issue in the economic rents of the mining industry. Those with low exploration costs and rich endowments generate high rents, while others far from developed infrastructure or operating with high costs might be at the margin.

Fiscal regime for mineral taxation

7. Broadly speaking, there are two types of fiscal regimes to tax mineral resources. One is contractual-based system and another is concessionary regimes. Concessionary regimes provide companies full control of the production process, while contractual-based regimes usually leave control over at least a share of output to governments. Developed countries usually regulate fiscal terms in legal codes, while many developing countries regulate details in individual agreements. The accepted best practice would be to establish generally applicable fiscal terms in the law and avoid case-by-case negotiation of terms.

8. The taxation instruments for mining projects can be classified as profit-, production-, or input-based. Profit-based taxes include income tax, profit tax, royalty based on profit or income measures, resource rent tax, and withholding taxes on dividends. Production-based taxes include unit-based or ad valorem royalties, import and export duties, VAT, etc. Input-based taxes are duties.

³ It is generally defined as the excess profit above the normal rate of return to capital.

- 9. It is suggested that taxation should be neutral with regard to investment and production decisions so as to enhance economic efficiency.** It should be such that producers do not have incentives to shift their investment or production as a result of the tax. That objective is served by profit-based taxes, but not by production based royalties. The latter increases per unit cost of production, therefore investors will have an incentive not to explore investments with high production cost (closer to the margin) that would otherwise be commercially viable.
- 10. Taxing based on profitability would have some implications for the timing of revenue receipts.** Natural resource investments generate positive profits only with a great time lag because of the substantial investments required before production can begin. However, in many countries these revenues account for a large share of government income and, therefore, governments have huge incentives to realize these sooner rather than later. Thus while profit-based taxes are more investment neutral and economically efficient, and hence usually preferred by investors, production-based taxes are preferred by governments. The latter are more attractive to governments because they do not tie budget revenues to profits and instead ensure revenues in all production periods, even in the absence of profits.
- 11. The approach to ring-fencing is another key feature affecting the tax base.** This relates to the question of whether there is a separate treatment of different investment projects with regard to tax calculation purposes or a consolidated treatment. With ring-fencing, project revenues of a profitable project cannot be offset by losses suffered on other investments.
- 12. All in all, there are several contradictory objectives in constructing a tax regime.** It should provide a revenue stream for governments in all production periods, and with an increasing share of revenues as profitability increases (progressivity); provide minimal disincentives for production and investment; and remain robust amid changing circumstances (stability). The optimal tax regime in practice is a mix of several elements, a combination of royalty, some rent capture mechanism and the corporate income tax (CIT).
- 13. Each of these instruments has benefits and costs, and can be best determined by broad principles.** In principle, rent taxation is most efficient, but hard to calculate and administer. Royalties distort extraction and exploration, but assure some revenues from the start of production. The regular corporate income tax provides consistent treatment with other sectors. Overall, discretionary elements should be minimized and special treatment and incentives be avoided as they create incentives for aggressive tax planning and rent-seeking. The appropriate tax regime should be also designed with attention to other considerations besides potential tax revenues, such as investment and production incentives, cost of collecting revenues and cost of compliance. In the case of a complex tax system, multiple elements are in interaction; therefore detailed modeling using project-level data is critical in understanding the overall impact of the system on both the producers and the budget.

C. Assessment of Sudan's Tax Regime and Recommendation for Reform

14. Currently there are two groups of gold miners in Sudan: on one hand, the five established gold mining companies;⁴ and on the other hand, the thousands of small traditional miners.

Tax regime for established mining companies

15. The current state revenue share from gold mining companies consists of a royalty, Business Profit Tax (BPT) and an equity share. The royalty is at a rate of 7 percent. The BPT for mining companies is 30 percent. The equity share depends on the mining agreements with the companies. The Ministry of Finance and National Economy (MOFNE) is not involved in negotiating these agreements, which include BPT exemptions in certain cases.

16. Taking account of the general principles of natural resource taxation, the usual global practice is to have a regime that incorporates a royalty, corporate income tax/BPT, and possibly a resource rent tax. A resource rent tax provides an opportunity for the government to receive a larger share in the profits of the most profitable projects by capturing part of rents, such as when prices increase significantly. Neither royalty nor BPT will tax these rents effectively, though they may do so in part. To increase the royalty runs the risk of distorting investment and production decisions. A regime consisting of royalty, BPT and resource rent tax ensures government revenue from the time production commences while also providing the government a share in economic rents of more profitable projects.

17. The current combination of royalty, BPT and equity share seem reasonable, but in the long term, adopting a resource rent tax could improve progressivity. Table 4 shows that the current gold tax regime is comparable to other countries. The adoption of a resource rent tax would improve the progressivity of the tax regime. There are a number of options for a rent based tax including: an additional profits tax—this tax is only imposed if the accumulated cash flow from the project is positive, and any net negative cash flow (usually in the early years of a project) is adjusted upwards by an 'accumulation rate' (usually a proxy for the company's opportunity cost of capital adjusted for risk); a cash flow surcharge tax—this is a tax on net cash flow that adjusts the tax base of accounting profit by adding back depreciation and interest, and deducting any capital expenditure in full; and a variable income tax—this uses the BPT base, but varies the rate of tax according to the ratio of profits to gross revenues. The choice is a matter for the government and depends on which best achieves the take required by the government in a manner that is understood by the authorities and taxpayers.

⁴ They are Ariab, Rida, Hajajiyah, Hokan, and Al Sakhras Al Hamra. By the end of this year seven more companies are expected to begin producing gold.

**Table 4. Comparison of Sudan's Gold Mining Fiscal Regime with Other Countries
(In percent)**

Country	Royalty Rate	Corporate Income Tax Rate	State Equity
Australia	2.5	29	None
Ghana	5	35	10
Indonesia	3.75	25	None
Mongolia	5 (plus price based progressive royalty)	25	Up to 34
South Africa	7	Variable rate	None
Sudan	7	30	Varies
Tanzania	4	30	5

Source: IMF, Tax Reform Strategy for Revenue Mobilization (2013).

18. BPT exemptions for mining companies should be avoided. Very few countries provide tax holidays to mining projects because they want to ensure the state receives a fair share from the resources. A tax holiday defeats this purpose by denying the state a fair share of revenue from what is a non-renewable resource.

Tax regime for small traditional gold miners

19. Unlike the established mining companies, small traditional gold miners in Sudan are not being adequately taxed. It is estimated that there are thousands of these small miners, many of whom are operating in the remote desert areas of the country. The authorities are seeking to capture more tax from these small miners, especially now that oil revenues have declined. In 2012, it is estimated that around 48 tons of gold was exported, worth \$2.2 billion, with only a small percentage coming from established gold mining companies.

20. Attempts have been made to better regulate the gold sector by requiring all gold exports, other than by the large mining companies, to be through the Central Bank of Sudan. The Central Bank buys the gold from 4 gold agents who are licensed to buy gold from the small miners and sell it to the Central Bank. The Central Bank introduced these arrangements in 2011 for the purposes of controlling foreign currency reserves and also as a mechanism to reduce the incentive for smuggling by offering small miners a price which is better than the price they would obtain for smuggled gold. A gold refinery has also been established in Sudan, with the Central Bank holding a 50 percent interest.

21. The gold agents deduct a royalty of 7 percent from the payments to the small miners, so that some taxes are being collected, at least indirectly, from the miners. Royalties are paid to the Geological Research Authority of Sudan, which is a public corporation attached to the Ministry of Minerals.

22. Collecting BPT from the miners is more difficult, and therefore the simplest approach is to impose a withholding tax on the payments to the small miners. It will be very difficult to monitor the small gold miners to ensure they are paying the correct amount of BPT. There is a concern that some of these miners are making significant profits but not paying any tax. Getting the small miners to file tax returns is likely to be difficult, so a better approach is to collect tax at the point at which payments are made to the small miners. The fact that it is likely that most of the payments are made by only 4 agents makes them an obvious collection point, especially as they are already collecting the royalty. This also greatly simplifies the monitoring for the Taxation Chamber.

23. The withholding tax would be a final withholding tax, unless the taxpayer opts to file a tax return and pay under the standard BPT. This option could be used by a taxpayer that is concerned that the withholding tax is too high compared to the BPT that would be paid if the taxpayer was assessed on their actual net profit.

24. Further analysis of the profits being made by the small traditional gold miners will be necessary to determine an appropriate withholding tax rate. The rate should be high enough to approximate the tax that would be paid if the BPT applied, but not too high as to encourage smuggling to avoid the tax. The factors to take into account include: the profit margin made by small gold miners (i.e., taking account of their costs and the 7 percent royalty); the rate of BPT that would apply if they were subject to BPT (i.e., 15 percent applying to most businesses or the 30 percent applying to large gold miners); and the level of tax that may be imposed before it becomes more beneficial to smuggle the gold. These factors should be discussed with the Central Bank of Sudan and the Ministry of Minerals. Ideally there should also be the option for the rate to increase if the gold price increased significantly. This would ensure that the tax is progressive (that is, the state receives an increasing share in the economic rents as the mining becomes more profitable). However, this may be difficult to implement and may make the system too complex.

25. To ensure transparency and proper accounting, the current royalty should be paid directly to the central government, rather than to a separate state corporation. The current arrangement, where the Geological Research Authority of Sudan collects the tax and uses it for its own purposes before transferring any surplus to the central government, is not transparent and reduces the government's ability to control how the revenue from the royalties are spent.

Ring fencing

26. To protect the revenue, the authorities should consider ring-fencing mining activities for tax purposes. Ring-fencing is a limitation on consolidation of income and deductions for tax purposes across different activities or projects undertaken by the same taxpayer. There are benefits for a government in ring-fencing, as it can ensure government revenue where a company undertaking a series of projects seeks to deduct exploration or development costs for each new project against the income of projects that are already generating taxable income. For example, this could arise in Sudan if a company is in full-scale production in relation to a mining license area and commences exploration and development in an unrelated mining license area. While ring-fencing can protect the revenue, it can also hamper companies undertaking further exploration and development activities due to the inability to claim deductions for such activities on new projects. Therefore, in order not to hinder further exploration, unsuccessful exploration costs in other mining license areas could be offset against taxable income. Successful exploration expenditure would continue to be offset against income from the new mining activity arising from the exploration.

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ASSESSING SUDAN'S EXTERNAL STABILITY¹

Sudan continues to face challenging vulnerabilities and secession-induced permanent adjustment needs that also undermines external stability. The dependence on natural resources and undiversified export markets also poses risks to external stability. Price competitiveness continues to suffer from an overvalued real effective exchange rate (REER), which was only partly remedied by reforms to the exchange rate system in mid-2012. Non-price competitiveness keeps on lagging behind because of significant structural and institutional bottlenecks and reserves remain inadequate. These external imbalances have broad policy implications.

A. Background

1. After experiencing economic turmoil in the mid-1990s, Sudan succeeded in restoring and then preserving macroeconomic stability for more than a decade. The key were decisive public reforms and prudent policies aimed at realigning fiscal expenditure and balance of payments (BOP) needs with an insufficient and narrow revenue and export base, supported by Fund re-engagement in 1997 and the coming-on-stream of oil production in 1999. Subsequently, both total and non-oil real GDP grew at a robust pace of more than 5 percent (Figure 1.a), inflation mostly remained in single digits (Figure 1.b), the premium on the US\$ in the parallel market largely vanished, per capita GDP improved (Figure 1.c) and fiscal as well as external accounts strengthened (Figure 1.d).² In parallel, however, the external debt overhang remained essentially unaddressed, leading to a continued built-up of external arrears.³

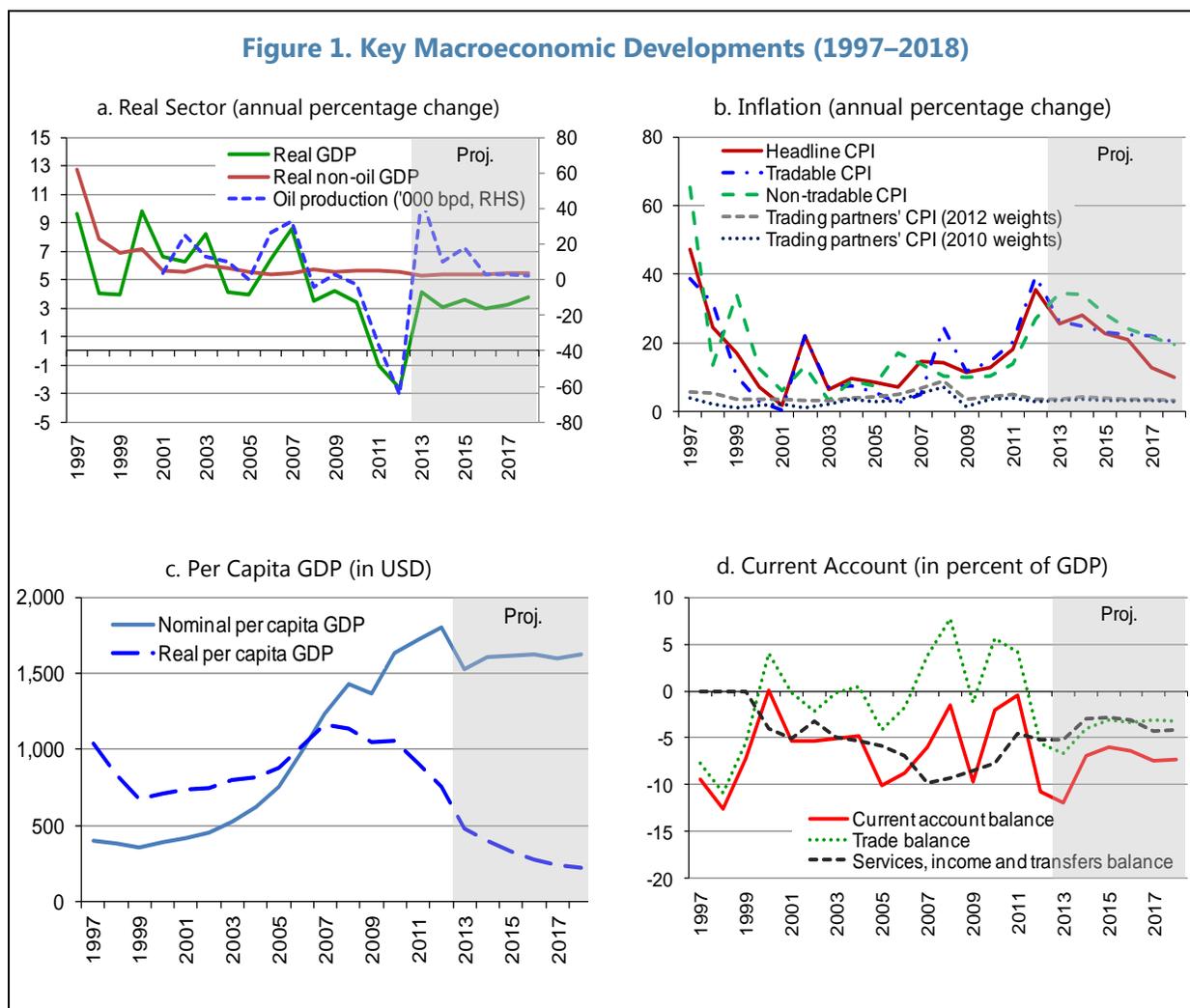
2. The secession of South Sudan in July 2011 represents another major adverse shock to Sudan's economy and prospects for external stability, with the potential to recreate the mid-1990s economic turmoil. The loss of roughly three quarters of the country's oil production has put an end to the oil era. It translated into a large and permanent fiscal and BOP shock, involving the loss of almost 60 percent of fiscal revenues and two-thirds of current account payment capacity. Even two years later, Sudan continues to struggle with the repercussions of the secession (Figure 1): economic contraction, widening non-oil fiscal and BOP deficit and pressures on net international reserves (NIR). As in the mid-1990s, monetization of fiscal deficits has led to upward pressure on inflation and downward pressure on the exchange rate. With access to foreign exchange through official channels limited, a thriving parallel market has emerged, with a significant premium over the

¹ Prepared by Kerstin Gerling (SPR) and Paul Jenkins (MCD).

² During the oil era, oil production remained modest in the real sector (accounting for only about 16 percent of total GDP in 2010), but crucial in the financing of the budget and the BOP (covering about half of current spending and imports in 2010, respectively). Sudan's fiscal dependence on oil revenues had previously taken a hit, when the 2005 Comprehensive Peace Agreement entitled what is South Sudan today to withhold roughly half of the proceeds of oil produced in the South.

³ Sudan began to accumulate systematic arrears on debt to external multilateral and bilateral creditors in the mid-1980s. For a discussion of the structure of Sudan's external debt and issues related to debt sustainability, see the attached Debt Sustainability Analysis.

U.S. dollar. Against the backdrop of a volatile security and political environment, continued uncertainties as to future relations with South Sudan (notably a protracted, but recently resolved, shutdown of oil production in South Sudan),⁴ sizable external debt overhang and limited international financial support, the authorities have yet to implement a decisive and comprehensive set of policy responses addressing these sizable macroeconomic imbalances and building adequate buffers.⁵



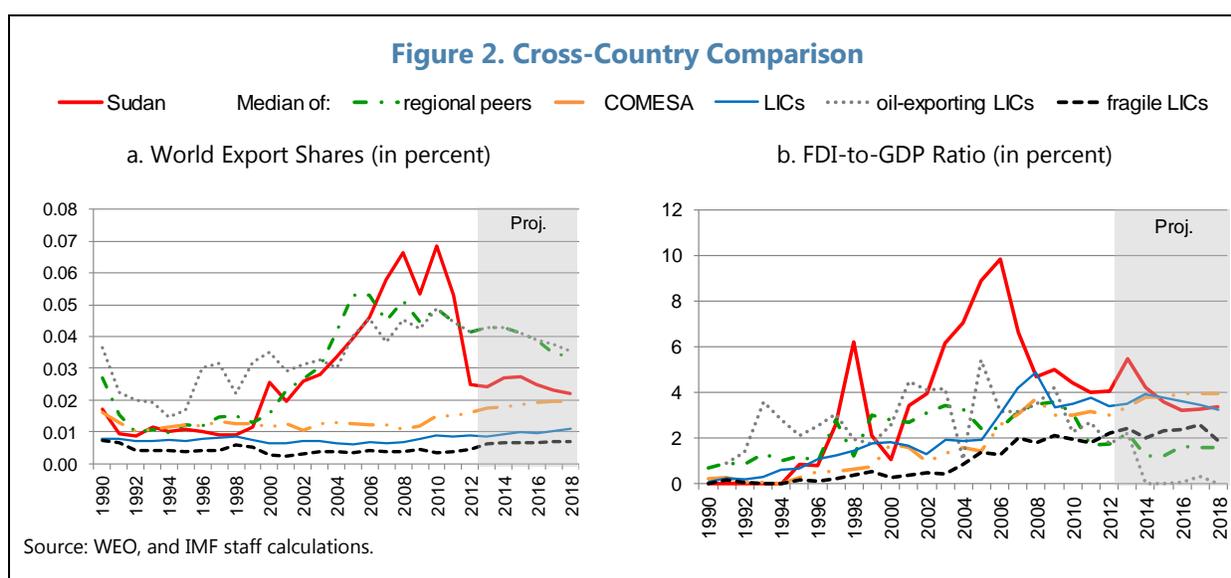
⁴ The recent signing of the implementation matrix of the September 2012 agreement between Sudan and South Sudan has lessened tensions, activated cooperation on a host of issues, and enabled resumption of oil pumping. Already, signs of abatement on the exchange rate are emerging. Financial flows are expected at some US\$2 billion per year, majorly contributing to easing Sudan’s fiscal and balance of payments difficulties.

⁵ At end-June 2012, the authorities seemed to embark on a reform program aiming at reversing the downward trend of economic fundamentals. The measures included a step devaluation of 66 percent of the official exchange rate, increase in taxes, reduction in energy subsidies and non-priority spending. Yet, implementation has fallen short of plans, and the 2013 Budget envisages substantial monetary financing of a large fiscal deficit.

B. External Competitiveness

External Sector Performance

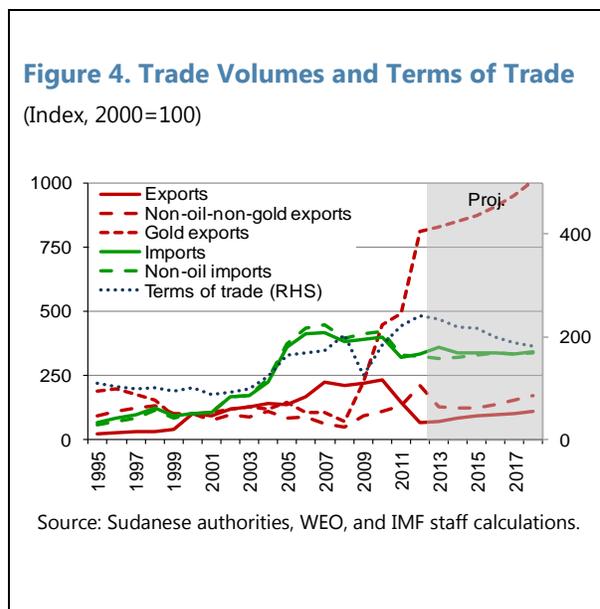
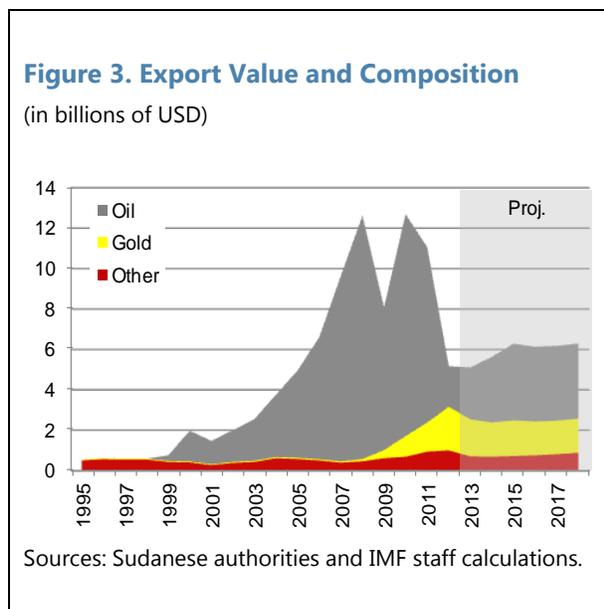
3. For more than a decade, the coming-on-stream and subsequent expansion of oil production had been the main engine of Sudan's external development. Starting from a very low base in the late 1990s, the oil boom helped Sudan outperform most of its peers in terms of the share of world exports and FDI-to-GDP ratio (Figure 2).⁶ This was more recently also supported by a substantial expansion of gold production. Meanwhile, however, the development of Sudan's non-oil-non-gold sectors kept on lagging behind. Non-oil-non-gold exports and FDI have remained chronically low, each at less than 10 percent of the respective total. As a result, exports became heavily concentrated across commodity groups (Figure 3) and destination countries (Table 1). By 2010, oil and gold exports predominated (accounting for more than 86 and 8 percent of total exports, respectively) and China had become the main export destination (accounting for more than 72 percent of total exports).



4. Sudan's historically narrow and undiversified external sector was drastically affected by the secession-induced loss of roughly three-quarters of oil reserves in mid-2011. This development further eroded Sudan's long-standing low external competitiveness (especially in non-oil-non-gold exports) and exacerbating vulnerability to external shocks (especially terms of trade shocks). As compared to the pre-secession 2010 outcome, the 2012 post-secession outcome was not only marked by 61 percent lower total exports (Figure 3) and 74 percent lower export volumes

⁶ The peer groups are (i) regional peers (i.e., Angola, Central African Republic, Chad, Egypt, Equatorial Guinea, Eritrea, Ethiopia, Nigeria, Yemen); (ii) members of the Common Market for Eastern and Southern Africa (COMESA); (iii) LICs (i.e. currently the 73 Fund members countries eligible for the Fund's Poverty Reduction and Growth Trust (PRGT)); (iv) oil-exporting LICs (as currently defined by the World Economic Outlook (WEO), i.e. Chad, Republic of Congo, Nigeria, Timor-Leste, and Yemen); and (v) fragile LICs (see World Bank, 2012a). Peer group medians exclude Sudan.

(Figure 4), but also a shift in the concentration of export products and destination countries. While oil exports declined by 84 percent and non-oil-non-gold exports increased by 45 percent, gold exports more than doubled (now making up for almost half of all exports, (Figure 3). Sudan produced nearly 50 tons of gold in 2012, (in total worth around \$2.1 billion), making it Africa's third largest gold miner behind South Africa and Ghana, and push it into the top 15 producers globally. The switch from oil to gold as the main export good has been accompanied in a switch from China to the Gulf countries as the main export destination (Table 1).



**Table 1. Post- and Pre-Seccession: Main Trading Partners
(In percent of total)**

	Trade		Exports			Imports		
	2012	2010	2012	2010	2012	2010	2012	2010
1 United Arab Emirates	20.4	10.5	United Arab Emirates	63.2	11.6	China	18.1	20.7
2 China	13.7	48.2	Saudi Arabia	9.2	1.4	India	8.8	4.7
3 Saudi Arabia	8.3	3.5	Ethiopia	5.3	1.4	Saudi Arabia	7.9	5.8
4 India	6.7	2.9	Egypt	4.0	0.4	Egypt	6.7	6.8
5 Egypt	6.0	3.4	Canada	2.8	0.5	United Arab Emirates	5.2	9.4
6 Australia	2.7	1.7	Eritrea	1.7	0.7	Australia	3.7	3.6
7 Turkey	2.6	1.1	China	1.6	72.4	Turkey	3.5	2.4
8 Japan	2.6	4.5	France	0.9	0.3	Japan	3.5	4.7
9 Bangladesh	2.6	0.2	Lebanon	0.9	0.1	Bangladesh	3.5	0.4
10 United Kingdom	2.0	0.9	Jordan	0.7	0.5	Germany	2.6	5.6
11 Germany	2.0	2.7	India	0.7	1.2	United Kingdom	2.6	1.7
12 Canada	1.7	1.3	Poland	0.6	0.0	Ukraine	2.1	1.9
13 Ukraine	1.6	0.9	Syria	0.5	0.1	Malaysia	2.1	0.7
14 Malaysia	1.5	0.8	United Kingdom	0.5	0.3	South Korea	2.0	2.2
15 South Korea	1.5	1.0	Kenya	0.3	0.0	Italy	1.8	2.0
16 Ethiopia	1.5	0.8	Germany	0.2	0.1	Singapore	1.6	0.1
17 Italy	1.4	0.9	Greece	0.2	0.0	Canada	1.3	2.2
18 Singapore	1.2	0.9	Italy	0.2	0.0	Sweden	1.2	0.6
19 Sweden	0.9	0.3	Spain	0.2	0.0	Brazil	1.2	1.0
20 Jordan	0.9	0.6	Other Asia	0.2	0.0	Thailand	1.1	2.0
21 Brazil	0.9	0.5	Turkey	0.2	0.0	United States	1.1	1.9
22 France	0.8	0.6	United States	0.1	0.0	Netherlands	1.0	1.0
23 Thailand	0.8	1.0	Japan	0.1	4.3	Jordan	1.0	0.9
24 United States	0.8	0.9	Qatar	0.1	0.0	France	0.8	1.0
25 Netherlands	0.7	0.6	Singapore	0.1	1.7	New Zealand	0.6	0.4

Source: Sudanese authorities and IMF staff calculations.

C. Price Competitiveness

Exchange rate regime

5. After maintaining a *de facto* peg to the USD for most of the recent past, the authorities introduced measures at end-June 2012 that purported to increase exchange rate flexibility.^{7,8} On June 25, 2012, the Sudanese authorities devalued the central rate and announced an the exchange rate system on the following four rates:

⁷ See IMF (2011a). The *de facto* exchange rate arrangement has been reclassified retroactively from *floating* to *other managed arrangement*, effective December 1, 2009. As a monetary target, CBOS aims at controlling broad money.

⁸ Until June 2012, the SDG/USD rate was determined through direct transactions between participants in the interbank market. Yet, CBOS participated in the market through swaps under a rules-based mechanism that triggers interventions if the exchange rate exceeds a band of $\pm 3\%$ around the previous day's closing rate. The main objective of the policy was to achieve exchange rate stability. The CBOS does not publicly disclose information on its interventions. Before June 2012, the official exchange rate was last depreciated by 0.06 USD to 2.67 to the USD in April 2011.

- (i) the established *central rate* was CBOS' only official rate before and applies to its foreign exchange purchases. It was devalued by 66 percent from SDG 2.67 to 4.42 per USD and now also applies to the settlement of government obligations, import of fuel products, and valuation assessment at customs
- (ii) a *subsidized rate for wheat and petroleum imports* of SDG 2.9 per USD;
- (iii) a *gold rate* used by CBOS to purchase gold, which is determined as the parallel rate plus an incentive set by CBOS;⁹ and
- (iv) a *commercial bank rate* is no longer set equal to the central bank rate plus a premium determined by the central bank,¹⁰ but allowed to follow an iterative crawling peg to achieve some floating. It is calculated as (i) the indicative rate (which equals the weighted average of the previous day's central rate and average commercial banks rate excluding the premium); (ii) plus the premium set by the central bank (up from 4.77 to 15 percent); and (iii) a flexibility factor allowing banks to deviate from the indicative rate by +/-4 percent.

6. Taken as a whole, these measures represented a significant devaluation of the exchange rate. In this respect, it was a welcome step toward alleviating the overvaluation of the exchange rate, and promoting balance of payments adjustment in the context of the loss of oil revenues following the independence of South Sudan.

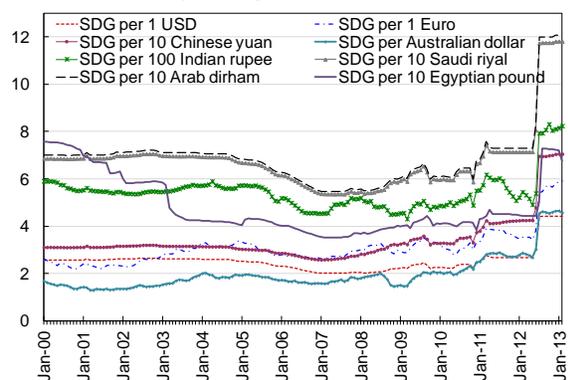
7. At the same time, there is clear evidence that the exchange rate remains insufficiently flexible and overvalued. Neither the central rate nor the subsidized rate for wheat and petroleum imports has been adjusted since the June 2012 devaluation. In an environment of substantially higher inflation in Sudan compared to its trading partners, this has led to a marked real appreciation. Even the commercial bank rate has been remarkably stable in recent months, amid continued shortages of foreign exchange and a large premium in the parallel market—all phenomena that indicate that the authorities are continuing to limit exchange rate flexibility in practice (Figure 5). Finally, as discussed above, Sudan retains a number of administrative measures and exchange restrictions.

⁹ The special gold rate was discontinued in the Spring of 2013.

¹⁰ In November 2010, CBOS introduced an exchange subsidy by authorizing banks and foreign exchange bureaus to buy foreign exchange at a premium above their buying rates. CBOS determines the premium, which was gradually revised downwards from, initially, about 16 percent to 4.77 percent in May 2011 and then up to 15 percent in June 2012.

Figure 5. SDG Bilateral Exchange Rates Against Major Trading Partners' Currencies

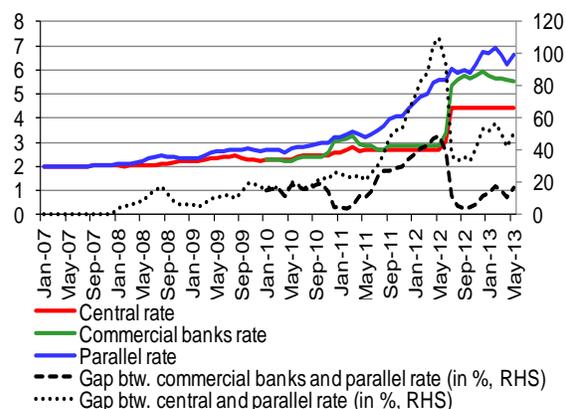
(monthly averages, 2000M1–2013M4)



Sources: IFTS and IMF staff calculations.

Figure 6. SDG/USD Exchange Rates

(monthly averages, 1997M1–2013M6)



Sources: Sudanese authorities and IMF staff calculations.

Exchange Rate Assessment

8. The exchange rate assessment for Sudan suggests a reduced, but persistent overvaluation of the SDG. Five available exchange rate surveillance indicators point to the June-2012 devaluation and reforms significantly having reduced, but not fully having undone a sustained misalignment of the SDG with its medium-term economic fundamentals.¹¹

- **1st Indicator—unsustainable BOP dynamics,** dating back to the decade-long oil era and having intensified with secession (Figure 7 and Table 2). Whilst exports and FDI fell, imports held up even after the June 2012 depreciation, indicating the impact of the SDG overvaluation. A current account deficit (including official grants) of some 5 percent of GDP over the decade preceding the secession of South Sudan was mainly financed by FDI and built-up of external arrears. The current account deficit increased sharply following the South's independence. Restoring balance of payments sustainability primarily requires adequate exchange rate flexibility to help close the external gap.¹²

¹¹ Profound conceptual and methodological obstacles prevent a formal empirical analysis based on the Consultative Group on Exchange Rates (CGER) approach, esp. data limitations related to the length and quality of time series, existence of structural breaks (e.g., the secession of South Sudan in mid-2011) and volatility (e.g., terms of trade shocks, institutional changes, market imperfections, volatile financing flows, multiple exchange rate practices, and capital controls). Besides, significant uncertainties complicate the outlook (esp. earnings from mineral resources and from a potential transitional financial agreement with South Sudan). For a general discussion of issues complicating REER assessments in LICs in general, see, e.g., Di Bella et al. (2007).

¹² The existence of severe foreign exchange restrictions, multiple currency practices, and parallel exchange rate markets prevents a meaningful calculation of elasticities and, consequently, of the needed extent of exchange rate adjustment.

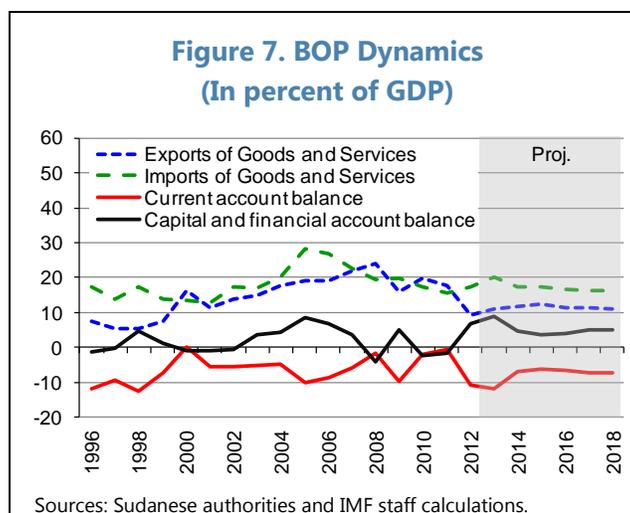


Table 2. Selected Balance of Payments Items
(In percent of GDP)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
														Proj.					
Current account balance (excl. official grants)	-0.2	-5.4	-5.6	-5.1	-5.0	-10.9	-10.8	-7.2	-2.8	-10.9	-3.9	-1.4	-11.5	-12.8	-7.7	-6.8	-7.2	-8.2	-8.2
Current account balance (incl. official grants)	0.1	-5.3	-5.3	-5.0	-4.8	-10.0	-8.8	-5.9	-1.5	-9.6	-2.1	-0.4	-10.8	-11.9	-7.0	-6.0	-6.4	-7.4	-7.3
Official aid flows	0.3	0.1	0.3	0.2	0.4	1.3	2.4	1.7	1.5	1.9	2.1	1.3	0.9	1.1	1.1	1.1	1.1	1.1	1.1
Capital and financial account balance	-1.0	-0.8	-0.5	3.8	4.3	8.7	6.8	3.8	-4.1	4.9	-2.2	-1.5	6.7	9.0	4.8	3.6	3.9	5.0	5.1
o/w FDI flows	1.0	3.4	3.9	6.2	7.0	8.9	9.9	6.6	4.7	5.0	4.4	4.0	4.1	5.5	4.2	3.6	3.2	3.3	3.4
Financing	19.4	7.2	5.9	5.2	2.7	4.5	4.2	5.0	1.6	4.6	7.1	3.1	2.6	3.0	2.2	2.4	2.5	2.4	2.3
o/w in-/decrease in useable reserves (-/+)	-0.4	1.0	-2.0	-2.4	-3.6	-3.1	1.1	0.9	-0.2	0.8	-0.3	0.4	-0.6	0.1	-0.5	-0.2	0.0	-0.2	-0.2
o/w increase in arrears	14.1	6.6	8.1	8.2	6.4	7.7	3.7	4.1	2.2	3.9	7.3	2.7	2.9	3.0	2.8	2.7	2.6	2.6	2.5
Reserve coverage (in months of imports)	2.0	0.7	1.7	2.4	2.6	3.1	2.4	1.9	2.1	1.5	1.8	1.5	1.9	2.0	2.3	2.4	2.4	2.5	2.5

Sources: Sudanese authorities and IMF staff calculations.

- 2nd Indicator—persistent exchange rate overvaluation**, as indicated by the development of the purchasing power parity (CPI)-based REER, nominal effective exchange rate (NEER) and gap between the official and parallel market rates:

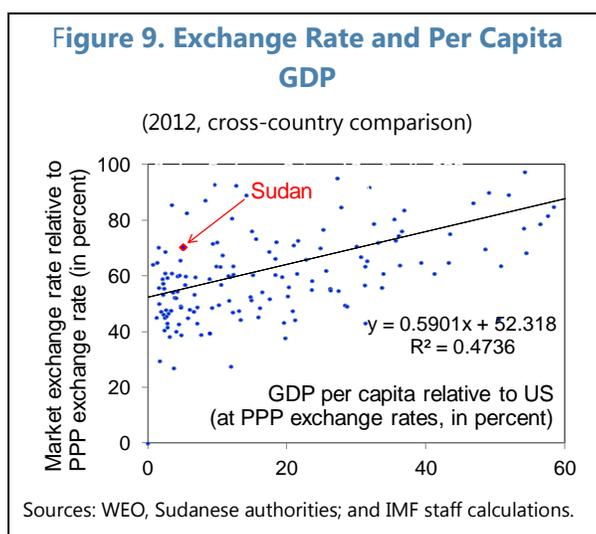
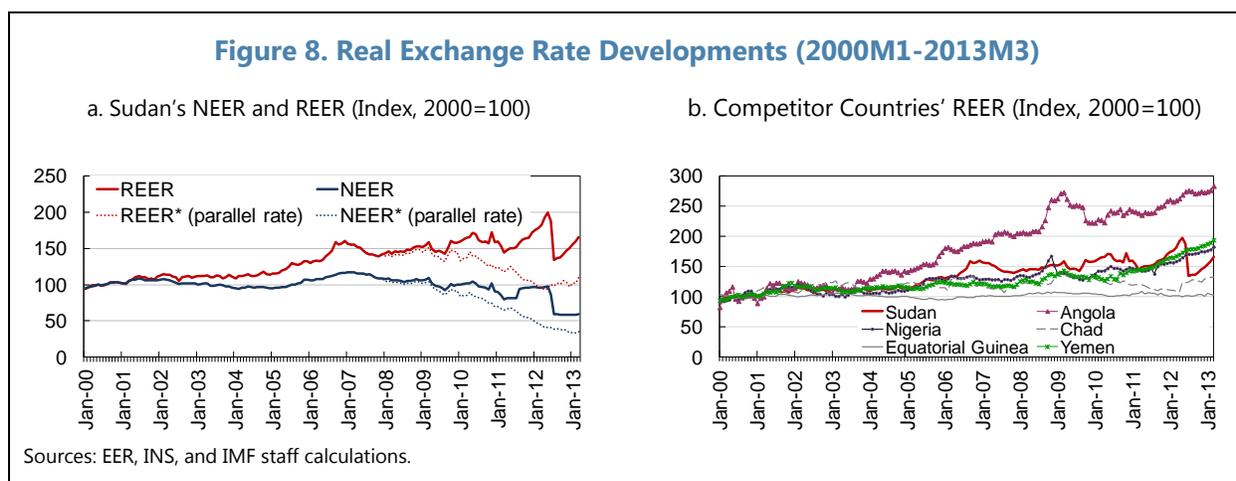
- A REER overvaluation continued even after the June 2012 devaluation, and in recent months has intensified.

The REER still ranges above longer-term historical averages (Figure 8.a and right Text Table). It has also increased again more than that of most other oil-exporting LICs (Figure 8.b). As the REER appreciation did not correspond to gains in productivity, but was rather driven by chronically high inflation, it has eroded external price competitiveness. Also, based on the macroeconomic outlook relative to trading partners

Average (Years)	Deviation from Average (Percent)	
	REER	NEER
20	38.2	-77.1
15	28.9	-100.0
10	17.8	-40.0
5	6.6	-37.8
1	4.2	-12.6

(see the persistent inflation differential in (Figure 1.b) overvaluation pressures will persist, calling for nominal depreciation. Meanwhile, the NEER has continued to depreciate. These opposite trends reflect macroeconomic fundamentals mirroring the path of oil proceeds and the stabilized exchange rate in the presence of higher inflation than in trading partners. Moreover, the REER also still ranges some 50 percent above the real exchange rate calculated based on the parallel exchange rate (henceforth labeled REER*). The reason is that in contrast to the REER, the REER* has already continuously been depreciating for years, reflecting the depreciation path of the parallel rate in line with deteriorating fundamentals (Figure 8.a versus Figure 6). The path of the

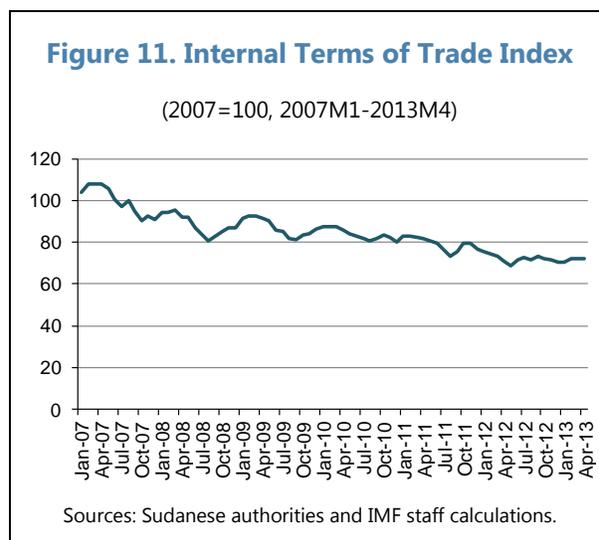
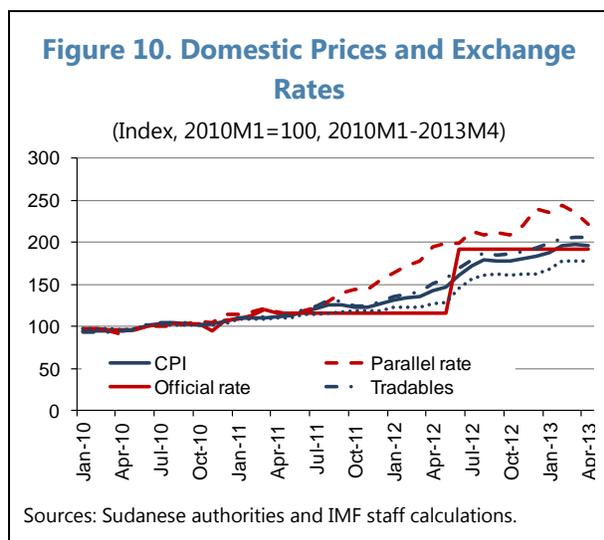
REER* suggests that, if left to operate freely, market forces would have already restored external price competitiveness by reversing the REER overvaluation. Further evidence of overvaluation comes from a cross-country comparison accounting for Balassa-Samuelson effects. Accordingly, the REER had some 27 percent left to depreciate in 2012 (Figure 9) as compared to 38 percent in 2011 and 36 percent in 2010.¹³



- The premium on the USD in the parallel market, persisted, albeit at a lower level, after the June 2012 devaluation (Figure 6), and has recently shown signs of widening. For years, the growing divergence of the central and parallel market rate has been reinforcing the role of the parallel rate

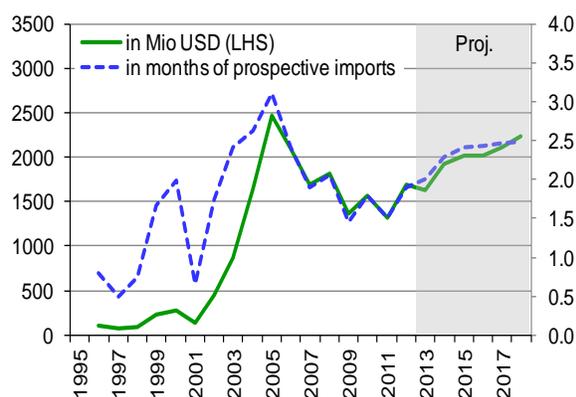
¹³ The Balassa-Samuelson effect relates the real exchange rate (proxied by the market exchange rate relative to the PPP exchange rate) to relative productivity (proxied by relative income). It claims that productivity increases in the tradable sector relative to the nontradable sector—if higher than abroad—cause real exchange rate appreciation. This explains the observation that in poor countries, average prices are lower and real incomes therefore higher than they would appear from simply converting prices in rich countries at nominal exchange rates.

as the economy’s leading rate (driven by increased foreign exchange scarcity esp. after the loss of oil export proceeds and mounting uncertainties about Sudan’s economic prospects). Internal terms of trade (ITT) lend further evidence to the longstanding leading role of the parallel rate.¹⁴ ITT dynamics go opposite to the REER’s, but in line with the REER*’s (Figure 11 versus Figure 8). The co-movement of domestic prices (of both tradables and nontradables) with the parallel rather than the central rate (Figure 10) has also prevented an overshooting of the parallel rate in the aftermath of the June 2012 devaluation.

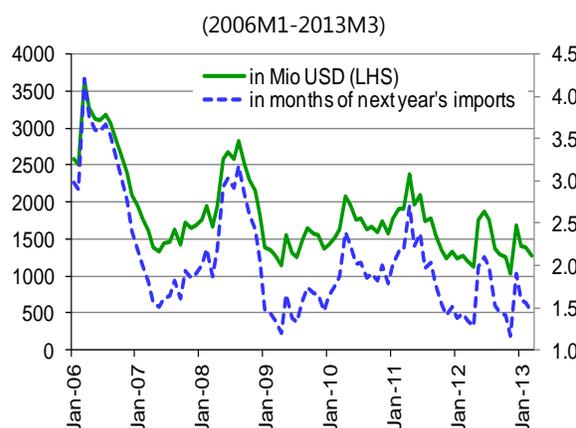


- 3rd Indicator—chronically low international reserve levels owing to protracted large-scale exchange market interventions in one direction.** For decades, Sudan has been supporting the exchange rate. This kept reserves well below both, the minimum of three months of prospective imports (Figure 12) and current optimal level (see reserve adequacy assessment below). Since the run-up to South Sudan’s secession, confidence in the currency has been eroding, putting a strain on reserves. More recently, reserve levels somewhat improved, supported by reduced pressures after the June 2012 devaluation and periodic support from friendly countries (Figure 13). Import coverage improved mainly on account of lower projected imports for the prospective year starting in 2013. Nevertheless, in view of the reduced foreign exchange accumulation basis, rebuilding reserves without external support will be challenging.

¹⁴ ITT is defined as the ratio of the price of non-tradables to that of tradables. In fact, despite administered and thereby contained petroleum product prices, the overall price index of tradables has been increasing in a stronger and more volatile way than the price index of non-tradables

Figure 12. Annual Stock of Reserve Assets

Sources: Sudanese authorities and IMF staff calculations.

Figure 13. Monthly Stock of Reserve Assets

Sources: Sudanese authorities and IMF staff calculations.

- 4th Indicator—imposition of administrative restrictions of access to foreign exchange for current account transactions.**¹⁵ Examples include exchange rationing and earmarking to selected sectors, limits on foreign exchange for travel purposes, 100 percent cash margin for letters of credit on most imports, controls on the repatriation of profits of foreign-owned companies, and restrictions on banks' excess reserves in foreign currency with CBOS. While aiming at easing pressures on the currency and limiting the depletion of official reserves, restrictions prevent an efficient foreign exchange market and accuracy of price signals.¹⁶
- 5th Indicator—growing external arrears adding to an already unsustainable external debt burden.** At end-2012, total external debt amounted to about USD 43.2 billion (i.e., 72 percent of GDP or 807 percent of exports of goods and services) with 85 percent in arrears and 96 in publicly guaranteed external debt. For decades, the external debt has only partially been serviced. Prospects for an improvement of the debt distress situation are limited in the absence of comprehensive debt relief and access to external financing remains very low.

9. Restoring price competitiveness and external balance requires Sudan to decisively implement a comprehensive set of policies. While the June 2012 step devaluation of the exchange rate was a step in the right direction, REER overvaluation pressures, multiple parallel exchange rates, premium on the USD in the parallel market and administrative restrictions on access to foreign exchange persist. The authorities need to strive for exchange rate unification, both across the multiple official exchange rates and the parallel rate. To this aim, it is also crucial to allow for

¹⁵ These restrictions were approved by the IMF Board until end-June 2010 in light of the authorities' intention to eliminate them. An assessment is currently under way of the implications of the recent exchange rate regime reforms on Sudan's compliance with its obligations under Art. VIII of the Fund's Articles of Agreement.

¹⁶ Especially when not applied temporarily, restrictions prove inefficient and costly. They hamper productivity (by inciting trade flows redirection, product substitution, and corruption) and erode investor confidence, fuelling capital flight and dollarization.

exchange rate movements in line with market fundamentals and to gradually phase-out administrative restrictions. This would help (i) restore competitiveness and current account sustainability; (ii) reduce dead-weight loss ensuing from the use of informal channels by encouraging financial inflows (incl. remittances) through official channels; (iii) foster the credibility of the exchange rate system and its resilience to adverse exogenous shocks by accumulating international reserves; and (iv) remove the adverse impact of uncertainty relating to the exchange rate and foreign exchange regime on investment and diversified economic growth. However, in order to ensure that nominal depreciation also translates into a sustained real depreciation, complementary macroeconomic policy reforms are needed. Above all, Sudan needs to (i) reestablish fiscal discipline through rigorous fiscal consolidation to free the CBOS from monetizing fiscal deficits; (ii) foster central bank independence to focus monetary policy on restoring price stability; (iii) secure more external support (with a view to debt sustainability, mainly official assistance, loans on highly concessional terms and debt relief) to ease domestic financing pressures, reform its economy and develop its infrastructure; and (iv) promote growth, boost productivity, and diversify exports to restart the economy.

External Non-Price Competitiveness

10. Sudan's competitiveness also suffers from severe structural impediments. Available survey-based business and governance indicators document that both, relative to its past and peers' performance, structural competitiveness has continued to either stagnate or deteriorate.¹⁷

- (i) *World Bank's Doing Business Indicators (DBIs)*. Sudan's overall ease of doing business ranks in the lowest quarter of all countries and midfield of regional competitors assessed in 2013 (Table 3). In recent years, it has thus further lost grounds on most sub-indicators. While scoring relatively well on registering property and resolving insolvency, Sudan scores especially badly on getting credit, protecting investors, dealing with construction permits, trading across borders and enforcing contracts.
- (ii) *World Bank's Country Policy and Institutional Assessment Ratings (CPIA)*. With a 2012 CPIA rating of 2.31, Sudan remains a weak performer (Table 4).¹⁸ Over the past decade, its policy and institutional framework has been deteriorating in relation to its own past and peers, most recently esp. in terms of economic management and structural policies (Figure 14).
- (iii) *Transparency International's Corruption Perception Index*. Sudan's perceived public sector corruption currently ranks third to worst in the ranking of 176 countries in 2012 (Table 5). The deterioration over the past decade has made it further fall behind its peers.
- (iv) *World Bank's Worldwide Governance Indicators (WGIs)*. Also Sudan's already weak governance indicators continue to stagnate at very low, roughly at or below their 2000

¹⁷ Like in previous years, Sudan has again not been included in the Heritage Foundation's 2013 Index of Economic Freedom or World Economic Forum's 2013 Global Competitiveness Report.

¹⁸ The threshold between weak and medium performers is at a CPIA of 3.25.

levels well below its peers (Figure 15). Political instability and violence mark the only exception, since they have considerably worsened in absolute and relative terms.

Table 3. Doing Business Indicators, 2013
(Rank out of 185 countries)

	Ease of Doing Business	Starting a Business	Dealing with Construction Permits	Getting Electricity	Registering Property	Getting Credit	Protecting Investors	Paying Taxes	Trading Across Borders	Enforcing Contracts	Resolving Insolvency
Sudan	143	122	156	108	37	167	158	101	153	151	88
<i>Sudan 2012</i>	140	128	164	108	39	165	155	100	151	150	87
<i>Sudan 2011</i>	135	123	127	104	40	152	153	99	151	146	84
Median											
Regional Peers	162	170	124	112	131	104	128	154	161	98	162
COMESA	135	134	130	141	102	129	109	97	155	147	137
LICs	142	111	117	128	129	129	128	116	134	132	135
Oil-Exporting LICs	169	147	116	149	156	104	139	155	154	162	136
Fragile LICs	168	147	127	125	156	129	139	123	146	147	160
Regional Peers											
Angola	172	171	124	113	131	129	70	154	164	183	162
CAR	185	170	147	173	132	104	139	181	182	177	185
Chad	184	181	127	149	140	104	158	184	180	167	185
Egypt	109	26	165	99	95	83	82	145	70	152	139
Equatoria Guinea	162	182	107	86	103	104	150	173	136	61	185
Eritrea	182	183	185	93	181	180	117	146	165	51	185
Ethiopia	127	163	53	94	112	104	128	103	161	50	117
Nigeria	131	119	88	178	182	23	70	155	154	98	105
Yemen	118	110	62	112	59	167	139	113	121	45	122

Table 4. CPIA Ratings

(2003–12, score ranging from 1=low to 6=high)

	2003	2008	2011	2012
Sudan	2.49	2.48	2.36	2.37
Median				
Regional Peers	2.99	2.73	2.76	2.74
COMESA	3.25	3.23	3.21	3.18
LICs	3.35	3.32	3.38	3.38
Oil-Exporting LICs	3.09	2.81	3.00	2.98
Fragile LICs	2.97	2.74	2.90	2.88
Regional Peers				
Angola	2.12	2.73	2.69	2.71
CAR	2.30	2.50	2.76	2.74
Chad	3.22	2.53	2.43	2.44
Eritrea	2.99	2.34	2.16	2.15
Ethiopia	3.25	3.35	3.46	3.44
Nigeria	2.70	3.44	3.43	3.47
Yemen	3.75	3.19	2.98	3.04

Sources: World Bank (2012b) and IMF staff calculations.

Table 5. Corruption Perceptions Index

(2003–12, rank and score ranging from 0= highest perception to 10=lowest perception)

Year	Rank			Score		
	2003	2007	2012	2003	2007	2012
Number of countries	133	181	176	133	181	176
Sudan	106	172	173	2.3	1.8	1.3
Median 1/						
Regional Peers	92	147	150	2.5	2.2	2.5
COMESA	92	111	118	2.5	2.8	3.2
LICs	106	123	129	2.3	2.6	3.0
Oil-Exporting LICs	113	139	144	2.2	2.4	2.6
Fragile LICs	113	150	150	2.2	2.1	2.5
Regional Peers						
Angola	124	147	157	1.8	2.2	2.2
CAR	n.a.	162	144	n.a.	2.0	2.6
Chad	n.a.	172	165	n.a.	1.8	1.9
Egypt	70	105	118	3.3	2.9	3.2
Equatoria Guinea	n.a.	168	163	n.a.	1.9	2.0
Eritrea	n.a.	111	150	n.a.	2.8	2.5
Ethiopia	92	138	113	2.5	2.4	3.3
Nigeria	132	147	139	1.4	2.2	2.7
Yemen	88	131	156	2.6	2.5	2.3

Sources: Transparency International (2013) and IMF staff calculations.

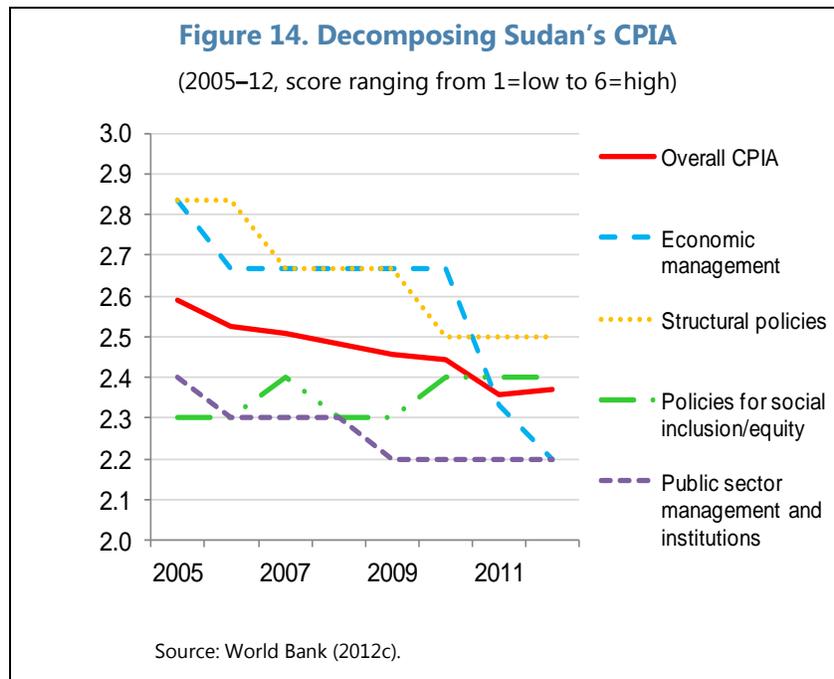
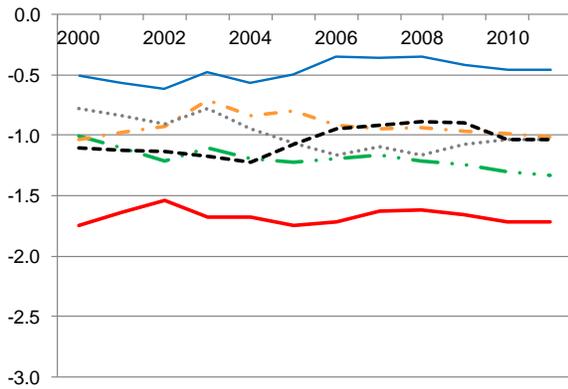


Figure 15. Worldwide Governance Indicators

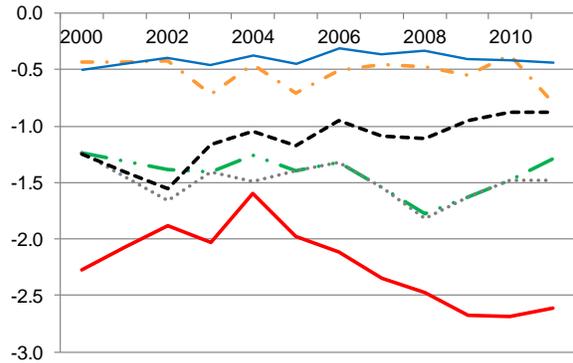
(2002–11, index ranging from approximately -2.5=weak to 2.5=strong) 1/

— Sudan Median of: - - regional peers - - COMESA - - LICs ···· oil-exporting LICs - - fragile LICs

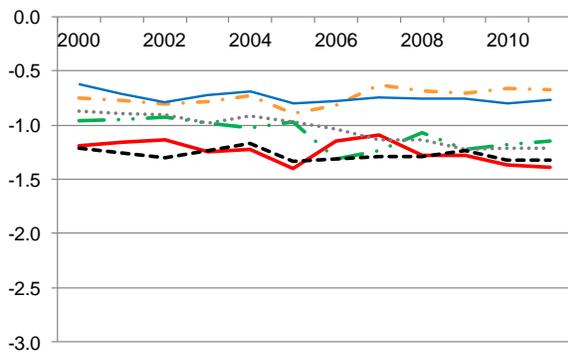
a. Voice and Accountability



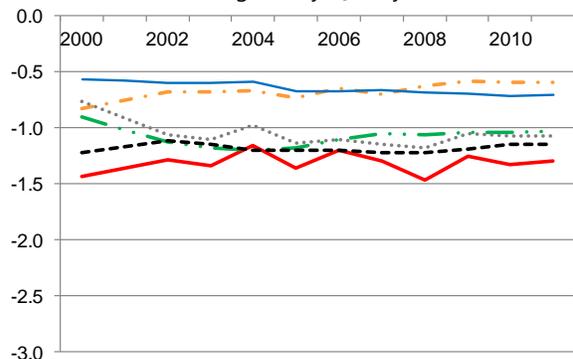
b. Political Stability and Absence of Violence/Terrorism



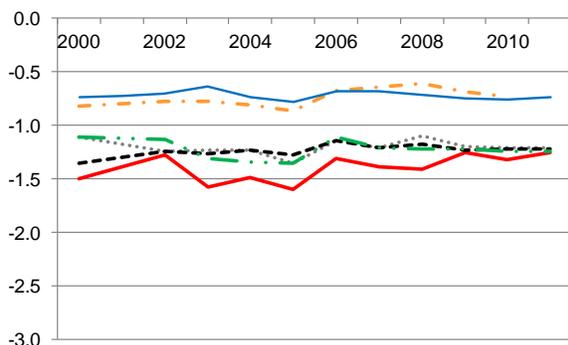
c. Government Effectiveness



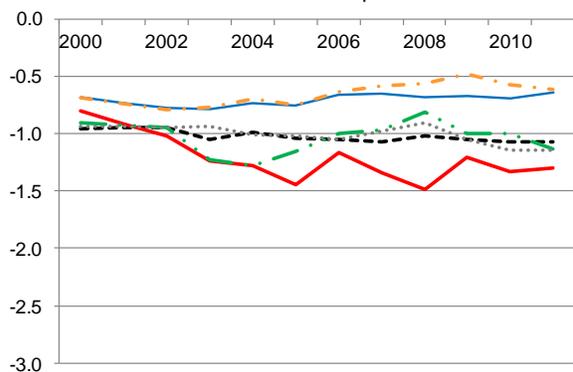
d. Regulatory Quality



e. Rule of Law



f. Control of Corruption



Note: 1/ The indicator value for 2001 is interpolated.

Sources: World Bank (2013b) and IMF staff calculations.

11. Enhancing non-price competitiveness requires Sudan to expedite substantial structural reforms. Based on the survey-based business and governance indicators reviewed above, priority structural areas for improvement are the challenging business environment (esp. the business, regulatory, and trade environment in terms of access to credit, investor protection, construction permit procedures, trading across borders and contract enforcement) as well as the political and security environment (esp. governance, security and institutions in terms of public effectiveness, transparency, accountability, and corruption). Over time, such reforms would generate productivity gains, mainly by bolstering private sector investment and expansion as well as public sector efficiency (including through more effective policy making and use of development assistance).

D. Reserve Adequacy Assessment

12. Sudan's international official reserves remain inadequately low, constraining CBOS' ability to support the official exchange rate and the country's ability to mitigate the impact of external shocks.¹⁹ In particular, Sudan's international official reserve level falls short of the:

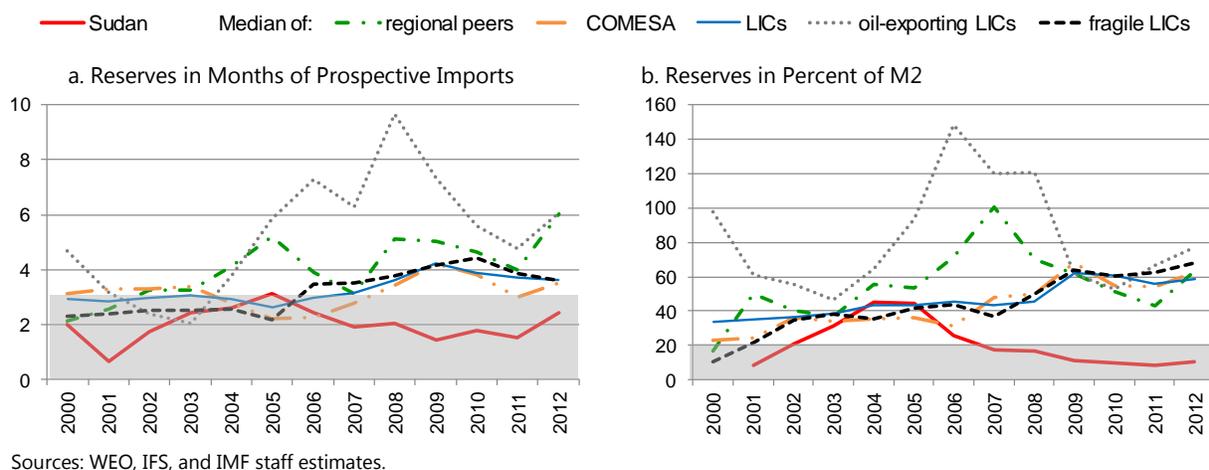
(i) *minimum level* suggested by traditional rules of thumb. Despite some recent improvement (rather due to lower prospective imports than to higher reserve levels), reserve coverage has lingered below the threshold of three months of prospective imports for more than a decade (Figure 16.a). In addition, reserve levels have remained below the 20 percent of M2 threshold throughout most of the past decade (Figure 16.b). Along both dimensions, Sudan has also fallen short of its peers' performance.

(ii) *optimal level* suggested by a new methodology.²⁰ Depending on the unit cost of holding reserves, the baseline scenario (see underlying assumptions in Table 6) finds that the optimal level implies reserve coverage of 4.5 to 10 months of current imports (Figure 17). However, with the methodology failing to account for Sudan's large infrastructure investment needs and the cost of its external debt that further increase the opportunity costs of holding reserves, it would be appropriate for Sudan to target the lower middle of the suggested range.

¹⁹ For a discussion of motives for reserve accumulation, see e.g. Jeanne and Ranciere (2006, 2008) or Dooley et al. (2004).

²⁰ Unlike traditional rules of thumb, this methodology (see Dabla-Norris et al., 2011 and IMF, 2011b) accounts for the costs and benefits of holding reserves, whilst also adjusting for country and policy fundamentals. The optimal level balances reserves' crisis prevention and mitigation benefits against their net financial cost. While a crisis is defined as a sharp drop in absorption, net financial costs are defined as foregone investment opportunities measured by the marginal product of capital.

Figure 16. Common Rules of Thumb for Assessing Reserve Levels



Sources: WEO, IFS, and IMF staff estimates.

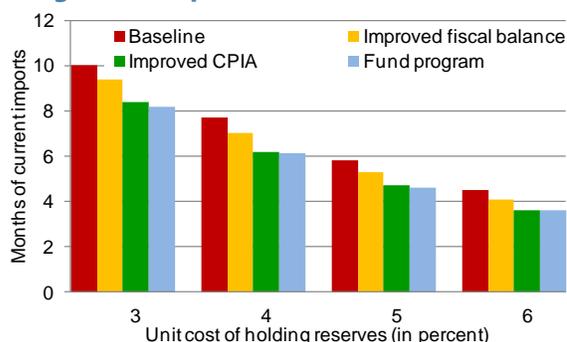
Table 6. Baseline Analysis Inputs 1/

Sudan - Baseline Analysis Inputs	
Fundamentals	
Government fiscal balance, percent of GDP	-4.09
CPIA	2.36
Shock variables	
External demand growth, percent	3.21
Terms of trade growth, percent	-2.21
Change in FDI-to-GDP ratio	-2.04
Change in aid-to-GDP ratio	-0.70
Other	
Unconditional probability of a crisis	0.15
Fund program	no

Source: World Bank, Sudanese authorities, and IMF staff calculations.

Note: 1/ Analysis uses latest available data, i.e. the 2012 fiscal balance, 2011 CPIA and 2003-12 bottom 10th percentile of the country-specific distribution of shock variables.

Figure 17. Optimal Level of Reserves 1/



Source: IMF staff calculations

Note: 1/ Each scenario assumes one deviation from the baseline: a balanced fiscal position, a CPIA of 3.25 (which is the level that distinguishes medium from weak performers) or a Fund program.

13. To rebuild its buffers against external shocks, Sudan needs as a priority to increase its reserve holdings. It should aim for a minimum of three month reserve coverage, but optimally for more. This should be flanked by efforts aimed at lowering the optimal reserve level, such as improving the fiscal position and institutional capacity or committing to a Fund program. As illustrated in Figure 17, such efforts can be highly beneficial, reflecting the fact that higher fiscal buffers help fight a crisis and stronger institutions lower the probability of a crisis.

E. Conclusion

14. Sudan's external stability continues to be at risk. Vulnerabilities persist and competitiveness is low, hampering much-needed economic expansion and diversification away from natural resources. Price indicators suggest that recent reforms have somewhat helped, but were not sufficient to realign the real exchange rate with economic fundamentals. Non-price indicators show that Sudan lost ground relative to both, its own historical and its peers' performance. Reserves appear inadequate, not providing sufficient buffers against exogenous shocks.

15. To restore external stability, increase resilience to exogenous shocks and boost sustained and inclusive growth, Sudan needs to create a stable, competitive and diversified economy. This requires in particular:

- *Exchange rate policy.* Priority should lie on unifying the multiple parallel exchange rates, substantially increasing exchange rate flexibility and gradually removing administrative restrictions on access to foreign exchange. External buffers need to be rebuilt.
- *Fiscal and monetary policy.* Efforts should focus on adjusting to the secession-induced reduced fiscal space by promoting fiscal consolidation and so to put a halt on the monetary financing of the budget. Supported by monetary policy devoted to price stability, this would help ease inflation pressures and thus foster confidence in the currency.
- *Structural reforms,* esp. those aimed at making the business environment more conducive to private sector development, the public sector more efficient (in the use of internal and external resources) and the political and security environment more stable.
- *Structural policies.* The loss of oil revenues has aggravated the urgent need for creating compensating new sources of growth and income. This also requires developing the country's infrastructure and human capital, also helped by foreign financing (at highly concessional terms). To rebalance external accounts, the authorities aim at increasing exports by revitalizing the agricultural sector, expanding the mining sector (esp. gold) and boosting medium-term oil production (through the discovery of new and recovery of existing oil wells). Yet broader efforts need to be devoted to economic diversification, attraction of foreign investors, internal demand management and trade promotion (e.g. by better capitalizing on its membership in COMESA and the Greater Arab Free Trade Area or deepening regional integration with neighboring countries, incl. South Sudan).

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