

Liberalization and implicit government finances in Sierra Leone

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Contents

List of tables

List of figures

Abstract

Acknowledgements

1.	Introduction	1
2.	The issues	3
3.	The adjustment programme	8
4.	Estimation	10
5.	Empirical analysis	12
6.	Conclusions	21
	References	22
	Appendix: Estimation of exchange rate over-valuation subsidy (EROS)	24

List of tables

1.	Macroeconomic indicators, 1970–1996	1
2.	Implicit and explicit finances (% GDP), 1970–1996	12

List of figures

1.	Implicit finances (% GDP), 1970–1996	15
2.	Explicit revenues, implicit taxes and sum (% GDP), 1971–1996	15
3.	Net implicit finance and explicit revenues (% GDP), 1982–1994	16
4.	Sum: Explicit revenues, implicit taxes and change in foreign debt/GDP ratio (% GDP), 1975–1996	16
5.	Sum: Explicit revenues, net implicit finance and change in foreign debt/GDP ratio (% GDP), 1982–1994	17
6.	Seigniorage (% GDP) and inflation (%), 1970–1996	19

Abstract

This research provides empirical evidence on the consequences of stabilization and financial liberalization in Sierra Leone for implicit seigniorage and financial repression revenues and exchange rate over-valuation subsidy. The paper provides a political explanation for their sub optimal combination prior to adjustment and shows that the adjustment measures have reduced all implicit finances and the scope for using them for political objectives. External financing has largely replaced domestic financing of the reduced budget deficits.

Key words: implicit government finances, fiscal reform, financial liberalization, Sierra Leone.

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1. Introduction

Implicit government finances have played a major role in the Sierra Leone economy. Prior to the structural adjustment programme (SAP) initiated in 1989, government relied substantially on seigniorage and financial repression to finance large budget deficits, which peaked at 15% of GDP in 1986/87. Table 1 indicates that in the 1980s annual reserve money growth averaged 53%, while real interest rates of -26% afforded subsidized directed credit to the public sector averaging 85% of total credit. On the other hand, over-valuation of the leone with an average black market spread of 125% afforded an implicit subsidy to the private sector as a net purchaser of foreign currency from government.

Table 1: Macroeconomic indicators 1970–1996 (period averages)

Year	Real treasury bill rate (%)	Black market spread (%)	Public sector credit (% of total)	Budget deficit (% of GDP)	% annual change in reserve money	Rate of inflation (%)	Foreign debt (% GDP)	GDP growth (%)
1970-79	-4.4	2	54	6	21	11	22*	1.9
1980-89	-26	125	85	9	53	63	45	0.5
1990-96	-8.0	9	85	5	46	54	94	-4.1

* (1974–1979)

Source: *International Financial Statistics Yearbook*, 1999; *African Development Indicators*.

The inflation stabilization and financial liberalization measures of SAP imply loss of revenues from seigniorage and financial repression along with the reduction or elimination of the implicit exchange rate over-valuation subsidy. This raises important policy questions. What have been the quantitative importance and overall implications of implicit government finances over the years in Sierra Leone? What has been driving these implicit government finances?

This research assesses the implications of implicit government finances for the stabilization and financial liberalization reform measures introduced in Sierra Leone since 1989. To date, studies on implicit finances in developing countries have tended to focus on specific components, ignoring the complementarities. Pinto (1989) provides a framework for analysing the fiscal impact of liberalization in the context of exchange rate over-valuation when government is a net purchaser of foreign currency from the private sector, while Morris (1995) examines the net seller case. Adam et al. (1996)

assess the implications of liberalization for seigniorage revenue. Fischer (1982) estimates the seigniorage benefits forgone by using foreign money for a worldwide sample of countries. Chamley and Honohan (1990) present alternative measures of implicit and explicit taxation of the financial system and estimates for five African countries. Giovannini and de Melo (1993) present quantitative estimates of financial repression revenues for developing countries. This study adopts a more comprehensive approach by empirically estimating seigniorage and financial repression revenues and exchange rate over-valuation subsidy to assess the fiscal implications of the stabilization and financial liberalization measures of the adjustment programme of the early 1990s. Furthermore, the study provides a political explanation for the suboptimal levels of implicit finances prior to adjustment revealed by the estimates.

Section 2 discusses the issues, in particular the interactions among the three components of implicit government finances and the expected consequences of financial liberalization, while Section 3 reviews the adjustment programme. This is followed by the methodology in Section 4 and empirical analysis in Section 5. Section 6 concludes.

2. The issues

Financial repression consists in restricting domestic interest rates and international capital flows to artificially lower the cost of government borrowing. Seigniorage, on the other hand, is the real revenue flow enjoyed by government as a result of the issue and subsequent taxation of its primary liabilities (Adam, 1995). Exchange rate over-valuation occurs when the official exchange rate lies below the market clearing rate.

In terms of complementarities, exchange rate over-valuation usually occurs in a fixed exchange rate regime as part of financial repression. Financial repression reduces the array of financial instruments, increasing the demand for narrow money—the seigniorage tax base. Also, financial repression through high reserve requirements increases the demand for high powered money whenever required reserves are in cash. The complementarity between financial repression and seigniorage breaks down at very high rates of inflation, however, which induces capital flight and currency substitution, decreasing domestic money demand.

Turning to their determinants, seigniorage has two components: the growth in real money balances, and the inflation tax—the depreciation in real balances induced by inflation. The base for the inflation tax is real narrow money while the rate is the inflation rate. High inflation decreases the inflation tax base, which can give rise to a Laffer curve between seigniorage and inflation, implying the existence of an inflation rate that maximizes steady-state seigniorage. Revenues or taxes from over-valuation depend on its institutionally determined base—net sales or purchase of foreign currency from the private sector—and its subsidy or tax rate, the endogenous black market spread. Financial repression revenue depends on two institutionally determined variables: its tax rate—the difference between the domestic cost of borrowing and the shadow cost of funds—and its tax base, which is the stock of government debt outside the central bank.

Raison d'être for implicit finances

The raison d'être for implicit finances in developing countries can be explained in the context of the following basic government budget constraint showing the sources of financing aggregate explicit and implicit government expenditures:

$$\begin{aligned} \text{Explicit expenditures +} & & = & & \text{explicit revenues +} \\ \text{implicit exchange rate} & & & & \text{implicit exchange rate} \\ \text{over-valuation expenditures} & & & & \text{over-valuation revenues +} \\ & & & & \text{money financing +} \\ & & & & \text{domestic debt financing +} \\ & & & & \text{external debt financing} \end{aligned} \tag{A}$$

Equation A shows that government can finance its aggregate expenditures from explicit revenues, exchange rate over-valuation, money financing, and domestic and external debt financing. In developing countries, however, a typically narrow tax base and high administration costs limit the scope for raising explicit tax revenues, the bulk of explicit revenues. Conventional budget deficits therefore tend to be high. External financing can be costly, if available. Money financing (seigniorage) and domestic debt financing under financial repression represent cheap means of financing the deficit to government. Moreover, these implicit finances are politically expedient in the short run because they are less visible. When government is a net purchaser of foreign currency from the private sector, exchange rate over-valuation yields net revenues, reducing the need for seigniorage and financial repression. Here, financial liberalization represents a negative fiscal shock to government, inducing recourse to inflationary seigniorage, unless fiscal reform is undertaken. When government is a net seller of foreign currency, over-valuation constitutes net expenditures, increasing the need for seigniorage and financial repression. Here, by reducing the need for inflationary seigniorage, liberalization would be beneficial for both resource allocation and macroeconomic stability.

Equation A can therefore be rearranged to give an identity between what I will call the broad fiscal deficit—the conventional budget deficit (explicit expenditures minus explicit revenues) and net expenditure from exchange rate over-valuation (implicit exchange rate over-valuation expenditures minus revenues)—and its financing:

$$\begin{array}{lcl}
 \text{Conventional budget deficit} & = & \text{money financing} + \\
 + \text{ net exchange rate} & & \text{domestic debt financing} + \\
 \text{over-valuation expenditure} & & \text{external debt financing}
 \end{array} \tag{B}$$

Equation B shows that the larger the broad fiscal deficit, the greater the need for any or a combination of the three sources of its financing: money, domestic debt or external debt financing.

Optimal taxation

Standard principles of taxation suggest that government would seek to raise revenue from explicit and implicit sources in such a way as to minimize their distortions. Specifically, the equilibrium approach to fiscal policy advocated by Barro (1979, 1985) argues that actual tax and deficit policies are a reflection of a long-term inter-temporal optimization by government, which chooses policies to minimize the excess burden of taxation for a given path of government expenditure. The tax smoothing hypothesis implies that the socially optimum policy for Sierra Leone, where government has been a net seller of foreign currency, is to minimize the exchange rate over-valuation subsidy, allowing minimization of taxes—explicit and implicit.

Empirical support for this “tax smoothing hypothesis” has been limited, however, as it does not take account of critical political and institutional factors that can render government policy time inconsistent unless government can commit its future actions

(Kyland and Prescott, 1977; Barro and Gordon, 1983a/b). These factors, variously highlighted by Alesina (1986), Alesina and Tabellini (1987), Roubini and Sachs (1988), Kyland and Prescott (1977), Barro and Gordon (1983a/b), and Andrabi (1997), include political conflict in budgetary policy, the tenure of government and coalitions.

The impact of liberalization

While financial liberalization seeks to eliminate or reduce all three implicit government finances, it is seigniorage revenue that responds to it behaviourally since financial repression revenue and exchange rate over-valuation subsidy are largely institutionally determined. The impact of liberalization on seigniorage revenues depends on conditions at the outset of reform, the impact of the reform measures on growth, and the private sector's demand for money as well as its expectations concerning the success of the reform measures. Liberalization tends to increase access to and the expected rate of return on foreign currency, and the liquidity of non-monetary assets, increasing the inflation elasticity of money demand. This tends to reduce money demand, as do uncertainty about the timing and success of the reform, high inflation, and high money stock or binding exchange control at the outset of reform. So also does liberalization in the real economy, which reduces the shortage of goods and hence the speculative balances held by the private sector in anticipation of short spells of goods availability. A decrease in money demand shifts the seigniorage Laffer curve inwards, reducing the seigniorage maximizing rate of inflation. Seigniorage revenue decreases, inducing accelerating inflation unless fiscal adjustment is undertaken, since a higher inflation tax is needed to finance a given budget deficit. Currency substitution also induces volatile inflation. On the other hand, low money demand or widespread evasion of exchange control at the outset of reform, favourable expectations about the outcome of the reform, and income growth after reform all tend to increase domestic money demand, allowing inflation reduction at a low cost in terms of fiscal contraction.

Measurement issues

Seigniorage

There are different conceptual approaches to measuring seigniorage, each with different implications. The principal approaches involve taking the real money base—always including currency and sometimes also bank reserves—and multiplying it by either (a) the rate of growth in money (the cash flow measure); (b) the rate of inflation (the inflation tax measure); or (c) the nominal interest rate (the interest measure). In steady state with zero real interest rate, all three measures are the same. In practice, however, the assumption of a steady state is almost always irrelevant (Chamley, 1991). To the extent that they are different in practice, they can be used to explore different aspects of the currency tax

(Honohan, 1996). The cash flow measure of seigniorage—the one relevant to this study—measures the degree to which the government’s deficit is being financed. It is given by:

$$S_t = \Delta M_t / P_t = \pi_t m_{t-1} + \{m_t - m_{t-1}\} \quad (1)$$

where M is nominal money balances and π is the rate of inflation.

In a discrete time period the opportunity cost of holding money is given by the rate of inflation over one plus the rate of inflation, and the relevant formula for seigniorage becomes:

$$S_t = \Delta M_t / P_t = \pi_t / (1 + \pi_t) m_{t-1} + \{m_t - m_{t-1}\} \quad (2)$$

The foregoing cash flow measure of seigniorage comprises two components: the inflation tax, πm_{t-1} , and the growth in real money balances, $m_t - m_{t-1}$.

Financial repression revenue

Financial repression revenue (FRR) has not been frequently estimated in the literature. Giovannini and de Melo (1993) estimate it directly as the difference between the ex post shadow and domestic cost of funds times the stock of government debt held outside the central bank. The shadow cost of funds is proxied by the sum of the estimated dollar interest rate on external debt and the realized depreciation of the domestic currency relative to the dollar. The principal weakness of this measure, which precludes its use in this study, is that it overstates FRR in years of sharp exchange rate depreciations, common in Sierra Leone prior to adjustment.

Chamley and Honohan (1990) offer alternative methods of measuring FRR based on estimating the market clearing rate of interest on short-term risk-free paper, r^* . Measure one arbitrarily assumes r^* to be 1% higher than the expected rate of inflation. Measure two involves taking interest rates during periods of comparative absence of interest rate controls as market clearing rates. The jump in interest rates at the beginning of such periods is taken as a measure of the gap between actual and market clearing rates for other periods. This measure is weakened by the assumption that the degree of financial repression was constant outside periods identified as liberal. Measure three takes the actual foreign interest rate adjusted for actual exchange rate change as a measure of r^* , while measure four differs only by using the parallel market exchange rate instead of the official one. These last two measures share the same weaknesses as Giovannini and de Melo’s method of overstating FRR in years of sharp exchange rate depreciations. Measure five takes the growth in base money as a rough indicator of expected inflation and assumes that r^* is 1% higher. Data constraints and the weaknesses of these methods preclude their use in this study.

Exchange rate over-valuation subsidy

Exchange rate over-valuation subsidy has also not been frequently estimated empirically in the literature, partly because of the lack of data relating to net purchases or sales of foreign currency to the private sector. However, Morris (1995) presents a stylized account of the budget, monetary accounts and balance of payments of Uganda that can serve as a basis for estimating net government sales or purchases of foreign currency.

3. The adjustment programme

Despite its abundant mineral wealth—diamonds, rutile, bauxite, gold—and rich agricultural and marine resources, Sierra Leone’s economic performance has been one of long-term decline. Average annual GDP growth of 4% in the 1960s, the first decade of independence, slowed to 1.9% in the 1970s and further to 0.5% in the 1980s, before turning negative in the 1990s.

The economic decline emanated in part from the oil price shocks of the 1970s, which led to unsustainable current account deficits and higher inflation, with budget deficits increasing from less than 3% of GDP prior to 1973 to over 9% subsequently. Government responded with administrative and physical control measures, increased domestic—mainly central bank—and foreign borrowing, and financial repression. It subsidized basic imports of rice and fuel to cushion the price increases and also provided foreign currency for imports at over-valued official exchange rates. This encouraged smuggling of imported goods to neighbouring countries for higher prices, increasing the fiscal burden of the subsidies and exacerbating the balance of payments difficulties. Exchange control measures were introduced and in desperation the exchange rate was pegged variously to the pound sterling, the dollar and the Special Drawing Rights, in addition to a dual exchange rate system.

These exchange rate management measures fostered a foreign exchange crisis. Official imports and domestic industrial production fell sharply, reducing real revenues from import and excise duties, which accounted for about 70% of tax revenues in the early 1980s. Consequently, the ratio of tax revenue to GDP slipped from 15% in 1981 to less than 8% between 1983 and 1990. A thriving black market for foreign currency encouraged smuggling of primary exports, reducing the export tax base and increasing current account deficits. Also, falling export prices and lavish expenditures of over 65% of government revenues on a flamboyant Organization of African Unity (OAU) summit in 1980 aggravated the fiscal and current account deficits and overall economic decline. The debt crisis emerged, with the domestic debt to GDP ratio increasing from 9% in 1974 to a peak of 47% in 1983, while the ratio for external debt increased from 15% in 1980 to 91% in 1990, pushing the ratio of total debt to GDP from 24% in 1980 to 102% in 1990.

The economic crisis led to an adjustment programme in June 1986 that was terminated in October 1987 because Sierra Leone was unable to meet certain macroeconomic targets. The present adjustment programme started in November 1989 with a two-year trial “shadow” programme with no programme financial support. In April 1990, the exchange rate was liberalized. Foreign exchange bureaux began operating in 1992 and commercial banks’ interest rates were deregulated. Directed credit to the public sector was discontinued

and a treasury bill auction was introduced as the main vehicle for open market operations, with a unified bank and non-bank market for treasury bills. Government sought to address the external debt crisis by rescheduling official debts, clearing debt arrears and launching a commercial debt buy-back operation. Government has also privatized all imports, though it still provides some of the requisite foreign currency mainly through loans obtained from the World Bank and International Monetary Fund (IMF).

Financial liberalization has not led to increased financial deepening and competition in the financial sector, however. The M2/GDP ratio actually declined from 23% in the 1980s to 13% in the 1990s. Though real lending rates have been positive but highly variable since 1993, real deposit rates have remained negative except for 1993. Domestic credit to government was 85% in the 1990s, the same as in the 1980s. The blame for these disappointing results lies partly with the ongoing rebel war since 1991 that has forced large increases in defence expenditures, mitigating attempts at curtailing overall government expenditures and reducing real government revenues as economic activity declined. Nevertheless, inflation declined from 111% in 1990 to 23% in 1996 as budget deficits decreased from 15% of GDP in 1986/87 to under 8% since 1993 owing to the removal of subsidies on rice and petroleum products and to state enterprises, reduction in the public sector work force by a third, and curtailment of duty waivers.

4. Estimation

The study estimates empirically three sources of implicit finance: seigniorage revenue, financial repression revenue and the exchange rate over-valuation subsidy. Data on the calculation of all three implicit finances were obtained from various issues of IMF's *International Financial Statistics* and Bank of Sierra Leone's *BSL Bulletin*. Because of the unavailability of data, the exchange rate over-valuation subsidy is estimated only for the period 1982–1994.

Seigniorage revenue

Seigniorage revenue S_t is calculated as:

$$S_t = \{\pi_t / (1 + \pi_t)\} m_{t-1} + \{m_t - m_{t-1}\} \quad (3)$$

where π_t = inflation rate at time t

m_t = real (reserve) money supply

The two components of seigniorage revenue—inflation tax and real money growth—are given respectively, by the two terms on the right-hand side of Equation 3.

Financial repression revenue

Financial repression revenue (FRR) is calculated as the difference between the ex post foreign (shadow) cost of funds, r^f , and the domestic cost of funds, r^d , times the domestic stock of government debt held outside the central bank:

$$FRR_t = \{r^f_t - r^d_t\} GD_t \quad (4)$$

Because of data constraints, the shadow cost of funds is calculated as the US real prime lending rate and the domestic cost of funds is given by the real interest rates on treasury bills, the main instrument of government domestic borrowing prior to adjustment. It is assumed that exchange rate depreciations feed through domestic inflation and hence affect domestic commercial banks' real interest rates.

Exchange rate over-valuation subsidy

Net foreign currency sold to the private sector (NFC^{ps}) is obtained from the following stylized version of the government balance of payments account:

$$\Delta R = DP^{ps}_t - FR^a_t - GP^a_t - FC^{ps}_t \quad (5)$$

where:

- ΔR = change in foreign reserves
- DP^{ps} = foreign currency purchased by government from the private sector
- FR^a = foreign currency received from abroad
- GP^a = government payments abroad (debt, etc.)
- FC^{ps} = foreign currency sold to the private sector

The first two terms on the right-hand side of Equation 5 give the sources of foreign currency to government, while the last two terms give the uses of foreign currency. Net foreign currency sold to the private sector (NFC^{ps}), given by the difference between government sales and purchases of foreign currency from the private sector:

$$NFC^{ps}_t = FC^{ps}_t - DP^{ps}_t \quad (6)$$

is obtained as the residual in Equation 5 above, thus:

$$NFC^{ps}_t = FR^a_t - GP^a_t - \Delta R \quad (7)$$

A positive NFC^{ps} implies government is a net seller and a negative NFC^{ps} implies government is a net buyer. Noting that an increase in reserves is recorded as a negative ΔR and a decrease in reserves is recorded as positive ΔR in the IMF's *Balance of Payments Yearbook*, NFC^{ps} is given by the difference between the sum of all government credit items on the balance of payments, and the sum of all government debit items in the *Yearbook*. The Appendix to this report provides the data used to estimate NFC^{ps} .

The exchange rate over-valuation subsidy (EROS) is given by the product of the difference between the black and official market exchange rate (black market differential), BMD, and NFC^{ps} .

$$EROS = BMD \times NFC^{ps} \quad (8)$$

A positive EROS implies a subsidy and a negative implies a tax.

5. Empirical analysis

Estimates of implicit government finances (complemented by explicit finances) are presented in Table 2. They are all given as percentages of GDP over the period 1970–1996 (except for the exchange rate over-valuation subsidy, which is for 1982–1994).

The stylized findings

Table 2 reveals the following stylized findings:

Table 2: Implicit and explicit finances (% GDP) 1970–1996

Year	Inflation rate (%)	Inflation tax	Real money growth	Seigniorage	Financial repression	Total implicit tax	Exchange rate over-valuation subsidy	Net implicit finance	Explicit revenues (taxes and grants)	Change in foreign debt/GDP% ratio
	1	2	3 (1+2)	4 (2+3)	5	6 (4+5)	7	8 (6-7)	9	10
1970	8	1.3	-2.6	-1.3	0.1	-1.2				
1971	-2	-0.3	1.6	1.3	-0.2	1.1			15.5	
1972	4	0.6	1.3	1.9	0.0	1.9			16.9	
1973	10	1.6	2.4	3.9	0.2	4.2			16.3	
1974	14	2.3	-0.4	1.9	0.4	2.3			19.2	
1975	20	3.0	-1.5	1.5	0.8	2.3			17.0	5.7
1976	17	2.4	-0.1	2.4	1.0	3.4			15.5	1.6
1977	11	1.7	0.7	2.4	0.6	3.0			16.0	-1.6
1978	8	1.2	8.8	10.1	0.3	10.4			19.9	6.4
1979	19	3.9	7.0	10.9	0.9	11.8			18.8	1.2
1980	12	3.3	-5.4	-2.1	0.3	-1.8			17.1	3.5
1981	23	4.5	-4.3	0.1	0.9	1.0			18.3	-1.0
1982	28	4.1	9.2	13.3	0.9	14.2	19.9	-5.7	11.9	-0.4
1983	68	11.6	-7.3	4.3	3.5	7.8	14.9	-7.0	9.1	-2.6
1984	66	8.4	-3.1	5.3	2.3	7.6	14.1	-6.5	9.7	4.3
1985	77	8.1	-2.5	5.6	3.4	9.0	10.7	-1.7	7.5	13.8

cont.

Year	Inflation rate (%)	Inflation tax	Real money growth	Seigniorage	Financial repression	Total implicit tax	Exchange rate over-valuation subsidy	Net implicit finance	Explicit revenues (taxes and grants)	Change in foreign debt/GDP% ratio
1986	81	7.3	2.3	9.6	0.8	10.4	-8.8	19.2	7.5	17.2
1987	179	11.4	-7.0	4.4	4.1	8.4	2.5	6.0	9.4	13.4
1988	34	2.9	3.8	6.7	1.5	8.2	4.6	3.6	7.7	-25.5
1989	61	5.7	1.3	7.0	2.8	9.8	0.78	9.0	7.6	8.0
1990	111	8.6	-3.5	5.1	3.1	8.2	0.65	7.6	6.1	32.3
1991	103	6.7	-2.6	4.2	1.1	5.3	0.84	4.4	10.6	-9.9
1992	66	4.9	-3.5	1.4	-0.1	1.3	0.04	1.3	12.4	31.2
1993	22	1.7	-1.4	0.3	0.0	0.2	0.05	0.2	13.2	-24.9
1994	24	1.6	0.1	1.6	0.4	2.1	0.04	2.0	14.4	-5.6
1995	26	1.7	-0.9	0.8	0.5	1.3			9.5	10.5
1996	23	1.3	0.0	1.4	0.0	1.4			8.9	17.5
Averages										
1970–96				3.9	1.1	5.0	4.7 ^a	2.3 ^a	12.9 ^b	
1970–88				4.3	1.1	5.5	8.3 ^c	1.1 ^c	14.1 ^d	
1993–96				1.0	0.23	1.25	0.04 ^e	1.2 ^e	11.5	

a: 1982–94

b: 1971–96

c: 1982–88

d: 1971–88

e: 1992–94

Seigniorage revenues

Average seigniorage revenue of 3.9% of GDP was large but volatile over 1970–1996. Seigniorage was relatively low between 1970 and 1977 (1.8%), peaked over the period 1978 and 1979 (10.1% and 10.9%, respectively) and 1982 (13.3%), and tended to fall thereafter. During the reform period, seigniorage revenue decreased substantially, averaging 0.9% for 1993–1996 compared to 6.9% for 1986–1989.

In the meantime, average inflation tax revenue of 4.14% has been higher than average seigniorage revenue of 3.9%, while average real money growth revenue has been negative (-0.3%).

Financial repression revenues

Financial repression revenue for 1970–1996 has been low but volatile over the years. It was relatively low in 1970–1973 at an average of 0.03% of GDP, peaked at 4.1% in 1987 and declined to 0.23% in 1993–1996. The overall average was 1.1% per year.

Exchange rate over-valuation subsidy

The exchange rate over-valuation subsidy was substantial between 1982 and 1985, averaging 15%, but fell dramatically to 0.04% in 1992–1994.

Aggregate implicit government finances

Net implicit finance (implicit taxes less exchange rate over-valuation subsidy) was negative between 1982 and 1985, averaging -5.2% of GDP because of the preponderance of the exchange rate over-valuation subsidy. Since 1986, net implicit finance has been positive as seigniorage and financial repression revenues have outweighed the exchange rate over-valuation subsidy. Net implicit finance has fallen to 2% or less since 1992 as all three components have decreased substantially. Refer to figures 1–5 for illustrations of the tracking of the components.

Sierra Leone's average annual seigniorage revenue of 3.9% of GDP is high relative to other African countries. Fischer's (1982) estimates average 1.3% for African countries, while Adam et al. (1996) obtain estimates of less than 0.4% of GDP for Kenya and Tanzania and 0% of GDP for Ghana for 1971–1993. Sierra Leone's average annual financial repression revenue of 1.1% of GDP falls within the range of 0–5% of GDP reported by Giovannini and de Melo (1993) for a group of 24 developing countries. However, the different methods of estimating financial repression revenues in these two studies limit the scope for comparison.

Analysis of the stylized findings

The basic insight from the evidence presented in Table 2 is that prior to liberalization government pursued a short-sighted, non-welfare maximizing fiscal policy. It borrowed heavily from abroad and raised high levels of distortionary seigniorage and financial repression revenues from the private sector. Concurrently, these financed a similarly distortionary implicit subsidy to the private sector through sales of foreign currency at artificially low official exchange rates. A more prudent policy regime could have increased social welfare by reducing taxes, subsidies and foreign borrowing.

Why did government adopt this non-welfare maximizing fiscal stance prior to reform and what have been the consequences of liberalization? These questions prompt another question: Who benefited from this fiscal stance and who were the losers?

The politics of fiscal behaviour

I advance three political explanations for government's fiscal behaviour prior to liberalization. First is fear of urban protest. The unpopular All People's Congress (APC)

Figure 1: Implicit finances (% GDP), 1970–1996

Figure 2: Explicit revenues, implicit taxes and sum (% GDP), 1971–1996

Figure 3: Net Implicit finance and explicit revenues (% GDP), 1982–1994

Figure 4: Sum: Explicit revenues, Implicit taxes and change in foreign debt/GDP ratio (% GDP), 1975–1996

Figure 5: Sum: Explicit revenues, net implicit finance and change in foreign debt/GDP ratio (% GDP), 1982–1994

in power from 1968 to 1992, fearful of the reaction from the politically volatile urban population to a full pass-through of the oil price shocks of the 1970s, subsidized basic rice and fuel imports—which are mainly consumed by the urban population. At the same time, it provided foreign currency for imports at over-valued official exchange rates and imposed price control and rationing of scarce foreign currency and basic imports. Despite leading to unsustainable current account and budget deficits, these explicit and implicit subsidies, once implemented, became politically difficult to remove. Instead, the current account and budget deficits were financed by a mix of seigniorage, financial repression, foreign borrowing and implicit taxation of export agriculture through exchange rate over-valuation.

However, the urban fears perspective does not explain why, even within the urban population, there was an elite who benefited more. This leads to the second explanation. The APC deliberately used the economic distortions for political control and to retain power, institutionalizing a patron–client relationship based on loyalty to the party in exchange for access to the rents from the distortions. The losers were those outside the elite who were unable to access the rent created by the economic distortions or substitute away from domestic money to avoid the inflation tax. Rural farmers belonged to this outsider group. They were further penalized through rice subsidies that depressed local prices. Furthermore, exchange rate over-valuation and explicit export taxation penalized export farmers from the strongly anti-APC eastern and southern regions.

How did private agents respond to these distortions and what were the consequences? Financial repression fostered an informal financial system, especially in the rural areas, which disproportionately bore the brunt of the distortionary implicit finances. Exchange rate over-valuation induced black markets for foreign currency and smuggling of imports and primary exports of diamonds, gold, cocoa and coffee to neighbouring countries or overseas for higher prices. This exacerbated the fiscal and balance of payments difficulties, and lowered the capacity to import and service the external debt as it increased reliance on implicit taxes. By the mid 1980s much of the economy was underground. Basic imports of rice and fuel were permanently scarce, leading to burgeoning black markets. The black market for foreign currency offered some scope for currency substitution, providing an effective way of avoiding the inflation tax on domestic money, reducing seigniorage revenues and necessitating higher inflation rates to finance a given fiscal deficit through seigniorage. Inflation soared, peaking at 170% in 1987. As the black market intensified, exchange control measures and various exchange rate regimes were introduced to no avail. Furthermore, implicit taxation of agriculture forced the rural population into deeper subsistence.

Figure 6, plotting inflation against seigniorage, further exposes government's short-sightedness. Money creation generated large seigniorage of 6% in 1978–1991, but also high inflation of 62% in 1983–1991. In 1993–1996, however, seigniorage was 1%, only roughly half its value of 2.1% for 1971–1975, while inflation was 24%, more than double its 1971–1975 value. This suggests some hysteresis on the part of the private sector in reacting to the high inflation of the 1980s by permanent reductions in money demand by the 1990s—implying a reduction in seigniorage potential. The liberalization measures increased opportunities, and the rebel war provided the impetus, for substitution out of domestic money.

The third explanation for government fiscal behaviour prior to reform focuses on why government was short-sighted. I argue that unable or unwilling to discipline itself fiscally, government used short-sighted policies to palliate present economic difficulties, passing on many of the adverse consequences to future generations and governments. This view clearly contradicts the tax-smoothing hypothesis that perceives tax policy as a reflection of an inter-temporal optimization by government. In Sierra Leone, as the economic crisis deepened in the 1980s, partly induced by distortionary implicit finances, government failed to reduce its expenditures to allow the unsustainable budget deficits and foreign borrowing to decrease, as would be expected of an inter-temporally optimizing government. Instead, the withering state desperately resorted increasingly to the very measures an inter-temporally optimizing government would have avoided to finance its inordinate expenditures: inflationary seigniorage and unsustainable foreign borrowing including defaulting on debt servicing obligations. From the standpoint of the APC government, however, short-sightedness was rational; given its finite life span—in contrast with the naïve assumption of an infinitely lived government in orthodox economic theory—the APC would not have to bear the adverse consequences. It passed them on to future generations and governments.

The government's non-welfare maximizing and short-sighted fiscal behaviour highlights the absence of domestic agencies of restraint on government—mechanisms

Figure 6: Seigniorage (% GDP) and inflation (%), 1970–1996

designed to restrain the power of government such as an independent central bank—in Sierra Leone. Prior to reform, individual ministries had wide scope to spend, which they abused widely. Seigniorage was used as the residual means of financing the deficit with an often compliant central bank leveraged by the power of the head of state to appoint or dismiss the governor. Moreover, the prospect of physical violence and death always loomed over the governor. In 1979, the then governor was murdered after raising objections about inordinate expenditures related to the hosting of the 1980 Organization of African Unity summit whose cost represented 65% of government revenues for that year.

Reform or collapse

Given such perspectives explaining government fiscal behaviour, why did government reform? The crisis that preceded the reform, partly induced by distortionary implicit finances, collapse of infrastructure and basic utilities like electricity and water supply even in Freetown, the national capital, a burgeoning underground economy that shrank the tax base, high inflation, declining GDP growth, increased poverty, and declining aid flows, impelled government to reform for its own survival, to avert the impending collapse of the state. Inevitably, the government turned to the international financial institutions,

swallowing their self-disciplining policy prescriptions. The subsequent reform measures were accompanied by adjustment credit, which improved the supply of scarce essential imports and infrastructure, largely benefiting urban consumers. The ascension of a military government in 1992 facilitated the adoption of some of the stringent reform measures.

Fiscal reform and exchange rate liberalization have altered the political economy balance induced by distortionary implicit government finances. Decreased exchange rate over-valuation subsidies, reduced budget deficits and reduction in domestic financing of deficits—from 70–100% in the 1980s to 2–50% since 1991—in favour of external financing have allowed a reduction in seigniorage and financial repression. Liberalization has, moreover, de-politicized commodity, foreign currency and credit markets, removing the direct and implicit subsidies enjoyed by the urban population and eliminating or reducing the rents enjoyed by the elite. Furthermore, economic management has shifted towards technocrats somewhat buffered from political influence.

The financing of the deficit

With liberalization reducing implicit government revenues, deficit financing has shifted from seigniorage and financial repression to explicit debt issue and foreign borrowing. Domestic financing of deficits decreased from 77% in 1987–1989 to 15% in 1993–1997. Reduced budget deficits have lessened the need for deficit financing, however. It is important to investigate the consequences of these alternative means of financing the deficit in order to determine the implications for the economy.

6. Conclusions

This study has provided empirical evidence indicating that the stabilization and liberalization measures of structural adjustment in Sierra Leone have reduced all components of implicit government finances—seigniorage and financial repression revenues and exchange rate over-valuation subsidy. The study has provided a political explanation for the non-welfare maximizing government fiscal behaviour prior to reform, as revealed by the estimates. It may be concluded that by reducing budget deficits and hence the need for distortionary implicit finances, the reform measures promote both macroeconomic stability and economic efficiency. The enduring lesson from the study is the importance of agencies of restraint to keep the fiscal behaviour of government in check, such as an independent central bank, delegation of economic management to technocrats buffered from political influences, or monetary unions such as the CFA Zone in francophone Africa. Zambia and Uganda have tried the restrictive cash budget: government spends only what it received the previous day in Zambia or the previous month in Uganda, while Indonesia achieved great success with the balanced budget rule in its constitution.

An important area of research to complement the findings of this study is the implications of the alternative methods of financing budget deficits—explicit debt issue and foreign borrowing—adopted by government during the reform period. Has greater reliance on explicit debt issue raised real interest rates? What are the implications of external borrowing for the balance of payments, the real exchange rate and other key macroeconomic variables? These are topics for future studies.

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Appendix: Estimation of exchange rate over-valuation subsidy (EROS)

Table A1: Final calculation

Year	Net foreign currency sold to private NFC ^a (million \$)	Official exchange rate (le/US\$)	Black market exchange rate (Le/US\$)	Black market differential	Exchange rate over-valuation subsidy (EROS) (million le)	Nominal GDP (million le)	EROS (% GDP)
	1	2	3	4 (3-2)	5 (1x 4)	6	7 (5x100)/6
1982	98.1	1.24	4.5	3.26	319.81	1,605	19.93
1983	61.8	1.89	6.4	4.51	278.72	1,876	14.86
1984	78.9	2.51	7.38	4.87	384.24	2,730	14.07
1985	45.7	5.09	15.25	10.16	464.31	4,365	10.64
1986	-63	16.09	27.08	10.99	-692.37	7,888	-8.78
1987	35.4	34.04	49.58	15.54	550.12	22,472	2.45
1988	100.3	32.51	48.2	15.66	1,570.70	34,305	4.58
1989	10.3	59.81	102.3	42.44	437.13	55,804	0.78
1990	21.2	151.45	180.8	29.38	622.86	96,133	0.65
1991	30.8	295.34	347.6	52.26	1,609.61	192,428	0.84
1992	3.7	499.44	535.3	35.81	132.50	327,259	0.04
1993	94.9	567.46	590.3	22.85	2,168.46	467,188	0.46
1994	82.5	586.74	589.4	2.64	217.80	543,711	0.04

Table A2: Sources and uses of foreign currency for government 1988–1994 (million US\$)

Year	Government services n.i.e. (credit)	Government services n.i.e. (debit)	Current transfers gen. gov't (credit)	Current transfers gen. gov't (debit)	Fund credit & loans	Long-term loans gen. gov't	Short-term loans gen. gov't	Liabilities monetary authorities long-term	Liabilities monetary authorities short-term	Liabilities gen. gov't long-term	Liabilities gen. gov't short-term	Reserve assets	Net foreign currency sold to the private sector
1988	33.9	-2.0	8.80	-3.00	-1.00	13.30	-5.10	-26.50	87.40	-20.8	22	-6.7	100.3
1989	22.4	-2.3	7.50	-3.00	-1.60	-17.80	-7.90	-11.60	39.70	-25.6	1.2	9.3	10.3
1990	15.9	-7.3	7.00	-2.00	-4.50	8.50	1.30	-13.00	55.20	-43.0	8.2	-5.1	21.2
1991	16.9	-1.2	7.30	-1.00	-7.50	-4.40	-3.60	-6.10	31.60	-20.9	30.4	-10.7	30.8
1992	11.2	-4.0	4.10	-8.00	-5.20	-4.30	0.00	0.00	0.00	-3	26.9	-14	3.7
1993	13.6	-1.0	16.00	-1.70	-8.40	47.50	-3.30	0.00	44.50	-25.1	26.4	-13.6	94.9
1994	14.2	-14.2	46.30	-8.00	55.10	40.60	0.00	0.00	0.00	-71.2	38.3	-18.6	82.5

Table A3: Sources and uses of foreign currency for government 1982–1987 (million US\$)

Year	Investment income debit lines 16, 18, 20	Official goods, services and income credit lines 21, 23, 25	Official goods, services and income debit lines 22, 24, 26	Transfers credit line 39	Transfers debit line 40	Transfers of resident official credit line 41	Transfers of resident official debit line 42	Transfers of foreign official credit line 43	Transfers of foreign official debit line 44	Long-term capital fo resident official sector lines 62–68	Short-term capital of resident official sector lines 84–88	Reserve	Net foreign currency sold to private sector NFC ^{ns}
1982	-9.1	3.1	-9.2	45.5	-2.2	1.9	-0.2	0.6	-0.1	19.9	39.5	8.4	98.1
1983	-10	9.7	-2	33.2	-1.2	1.5	-0.4	0.5	-0.1	-51.8	76.3	6.1	61.8
1984	-14.1	11.7	-1.9	24.5	-0.6	1.4	-0.3	0.4	-0.1	-56	94.8	19	78.8
1985	-11.8	6	-3.4	16	-0.2	0.9	-0.1	1	-0.6	-43.9	86.5	-4.8	45.6
1986	-2.7	6.2	-2.1	3.8	-0.1	0.7	0	0.4	-0.1	-168.1	123.8	-24.8	-63
1987	-14.7	15.4	-3.9	6.2	-0.2	0.6	0	0.2	-0.1	2.7	31.6	-2.4	35.4

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