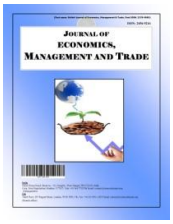

Journal of Economics, Management and Trade

26(6): 75-86, 2020; Article no.JEMT.60482
ISSN: 2456-9216
(Past name: British Journal of Economics, Management & Trade, Past ISSN: 2278-098X)

What Strategies for the Sustainable Management of Public Debts in Sub-Saharan Africa?

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Authors' contributions

This work was carried out in collaboration between both authors. Author SMB designed the study, performed the statistical analysis, wrote the protocol, managed the literature searches and wrote the first draft of the manuscript. Author CCP managed the analyses of the study. Both authors read and approved the final manuscript.

Article Information

DOI: 10.9734/JEMT/2020/v26i630267
Editor(s):
(1) Dr. Afsin Sahin, Ankara Haci Bayram Veli University, Turkey.
Reviewers:
(1) Sayan Banerjee, Goenka College of Commerce & Business, India.
(2) Samir Kumar Bandyopadhyay, University of Calcutta, India.
Complete Peer review History: http://www.sdiarticle4.com/review-history/60482

Review Article

Received 02 July 2020
Accepted 09 September 2020
Published 18 September 2020

ABSTRACT

Aim/Method: This article examines the different strategies required for the sustainability of sub-Sahara Africa's external debt by applying the Simonsen criterion[1] and the conditions of the Harrod-Domar debt and growth model.
Results/Conclusion: We then suggest that for debt to be sustainable the financial ratios have to be respected. So the effective servicing of the external debt in Sub-Saharan Africa requires that the expenses incurred in reducing poverty should be known. If the difference between the net returns and the expenses incurred in fighting against poverty is negative this reduces the burden of the debt. Finally, we recommend that Sub-Saharan African countries should use a combination of strategies based on sustainable development, financial resources of the government, and regulatory and institutional norms to manage their debts sustainably.

[1]*Mario Henrique Simonsen (1935-1997), Brazilian economist and former Brazilian finance minister (1974-1979).*

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Keywords: Sustainable debt; Harrod-Domar model; Sub-Saharan Africa; financial debt ratios; Simonsen criterion; external debt.

1. INTRODUCTION

A debt is considered to be sustainable as long as the borrower is able to service it. On the contrary, a debt becomes unsustainable when it increases faster than the borrower's capacity to service it [1].

Resorting to foreign capital can be beneficial if the income raised by the investments enables to meet up with the annual repayment of the capital and interests. However, in sub-Saharan Africa borrowings are often used for unproductive purposes such as military expenses in Nigeria, Sudan, Angola, or the funding of ''White Elephants'' (Cellucam in Cameroon, Adjaokuta in Nigeria).

Thus, the repayment annuities are calculated based on percentages that are more than the returns from exports. This partially explains the discordance between debt and economic growth in low income countries.

When one considers the economic literature on debt crisis of developing countries, the references are mainly chosen among countries which accumulate the highest amount of debts [2]: Mexico, Argentina, Brazil, Bolivia, etc. The arguments developed are seldom pertinent for sub-Saharan Africa which has its specificities. In fact, with respect to external debts of developing countries, that of sub-Saharan Africa is clearly distinguished by the importance of official financing, that is bilateral and multilateral loans granted under very favorable conditions. Private or non-official financing especially foreign direct investment (FDI) remains very weak. On average in the 1990s 73% of the African medium- and long-term debt was from official organizations with a sharp increase in the proportion from multinational organizations and notably from the World Bank (2002) whose credits in principle cannot be reschedules. Commercial banks have only a small share of the total external debt: 17% on average for the same period according to the OECD excluding trade credit. The situation in Latin America is quite the opposite during the same period banks had 52% of current debts trade credit exclusive. Moreover, during the 1990s the statistics of the IMF (1998) indicates that the average current external public debt of sub-Saharan Africa was 108.27% of the real GDP with a pike in 1994 of about 128.9% of the real GDP [3].

In a context of low valorization of raw materials and high interest rates, most countries in sub-Saharan Africa have become insolvent debtors [4]. Rescheduling loan repayment and contracting new loans so as to pay interests has led to the accumulation of arrears. The external debt (227 billion dollars excluding South Africa) tripled between 1980 and 1996; it moved from 97% to 242% of exports of goods and services; and from 27% to 82% of the GNP. The servicing of debts after rescheduling moved (in % of exports of goods and services) from 11% to 14.5% with about half in the form of interest. This amount highlights the fact that almost all the debt ratios were close to the critical level [2]. The countries most affected by this increase in debt were middle income countries because of the fall the prices of raw materials (Côte d'Ivoire, Cameroon, Congo, Gabon) as well as heavily indebted poor countries (Senegal, Madagascar, the Democratic Republic of Congo), [5]. Despite the strategies of debt reduction carried out under the supervision of the Club of Paris that bore fruits in 1996 with an initiative in favor of heavily indebted poor countries.

The objective of this study is to respond to the question of whether external debts of sub-Saharan Africa are sustainable. In other words, can sub-Saharan Africa meet up with its debt servicing obligations given its repayment capacity without any major economic and social sacrifice? In order to answer this question we are going to organize this study as follows: the first section will be based on the presentation of the theoretical approach to the limits of public debt. The second section will insist on the specific nature of the external public debt of Sub-Saharan Africa and especially how it is managed. This will enable us to highlight the unsustainable nature of this debt in the third section and propose some strategies that can make it sustainable.

2. THE THEORETICAL APPROACH TO SUSTAINABLE PUBLIC DEBT

In their studies on the indicators of vulnerabilities, the economists [5], [6], [7], [8] [9], [1], and [10] try to find out the level of indebtedness that is sustainable for an economy and at what level it

[2] *Benad and Nava (1991) indicate these ratios and their critical level: debt/GNP (50%), debt/exports (275%), current debts/exports (30%), current interest/exports (20%).*

becomes excessive. External borrowings can help countries accelerate their growth by funding productive investments. But if a government accumulates debts that it cannot service, a debt crisis can arise and its economic and social costs can be high.

That is why it is important to evaluate the level of indebtedness of a state or government that can be accumulated without any major problem. The different studies on this question show the link between debt and future generations on the one hand and the link between the state and its creditors on the other hand.

2.1 Public Debt and the Future Generation

When the state borrows it transfers the burden to the future generation when the future generation benefits from the investments carried out. Thus, a certain level of indebtedness is legitimate. However, it is not without any consequences since debt can become uncontrollable, especially when the repayment expenses increase public deficit that is funded by a new debt when public income does not increase at the same rate as repayment expenses. These series of events can be retraced by the following relations [11]; [12]:

$$B_t = D_t + B_{t-1} \quad (1)$$

$$D_t = DP_t + rB_{t-1} \quad (2)$$

Since $DP_t = T_t - G_t < 0$ then

$$D_t = T_t - G_t + rB_{t-1} \quad (3)$$

Where

$B_t =$ nominal current deb tat the end of the period t
$D_t =$total budget deficit for period t
DP_t= primary deficit (before payment of interest on public debt) = $T_t - G_t$
$G_t =$government expenditure for period t
$\mathrm{T_t} = \mathrm{Taxes}$ for period t
r = interest rate on debt (r=INT/B_{t-1}, where INT represents the total interest paid for the period in question)

The above relations exclude the repayment of the principal of the public debt. This supposes that there will always be new funds to borrow to finance the repayment of the capital as long as the payment of interest is punctual, a hypothesis that generally corresponds to the functioning of financial markets. In addition, it is considered that all budgets deficit is financed by borrowings which are true if the monetary financing by the Central bank can be assimilated to a debt that requires the payment of interest. Here we do not take into consideration the inflationary consequences which can make the government benefit from a reduction in the real net debt that is in national currency (financing by inflationist tax). If one chooses to use the ratio of public debt to GDP (B/Y) as an indicator of the importance of indebtedness, the equations (1) and (2) after replacing D_t in (1) by its value (by noting y the rate of growth of GDP and β the ratio (B/Y), can be summarized in the relation:

$$\beta_t - \beta_{t-1} = DP_t + ((r-y)/(1+Y))\,\beta_{t-1} \quad (4)$$

This formulation has the advantage of decomposing the variation of the debt ratio into two elements: on the one hand the element resulting from primary deficit and one the other hand debts resulting from the weight of previous debts that is so weak that the interest rate is low and that the GDP increases fast.

If r> y , the indebtedness rate starts to increase even if the primary deficit is zero. The debt replenishes itself. [13] demonstrates that if one decides on a norm for public deficits (as a proportion of GDP), the ratio β tends towards a limit whatever the proportion of GDP chosen for the public deficit. If δ is the chosen ratio for D/Y,] then β turns towards δ (1 + y)/y, it is seen that the tendency does not depend on interest rate neither on the initial rate of indebtedness. This is however difficult to put into practice than it appears since the proportion of the deficit is determined by the ratio of GDP. The proportion that concerns the repayment of interest can increase significantly which implies a relative reduction of the primary deficit. This reduction (which can be accompanied by either a relative compression of expenses or an increase in fiscal pressure) can be unrealistic. That is why despites the mathematical elegance of the demonstration by [13], other economists have proposed less dangerous behavioral norms.

If one takes constant proportion v as a norm between the primary deficit DP and the GDP, the ratio β tends towards a finite limit if the interest rate is less than the growth rate. This limit β^* is written as

$$\beta^* = [1 + y(y-r)]v \quad (5)$$

Otherwise, the debt/GDP ratio explodes only if a positive primary balance is realized at a break even point sp^* such that:

$$sp^* = [(r-y)/(1+y)]\beta_o \quad (6)$$

This highlights the fact that to avoid the explosion of the debt ratio (β_o) should not be allowed to increase to a very high level and this stability is so easy when the interest rate is low and growth is high.

Within the restricted framework of the model that has just been used there are no other possibilities. However, if we extend the [14] model we see two other possibilities. First, they consider that public debt increases the wealth of households who will be expected to consume more and this will increase the GDP through the game of the expenditure multiplier and consequently increase taxes according to the marginal fiscal pressure. In addition, according to these authors an increase in the debt/GDP will be slowed down by the growth effect of the GDP. This will be more significant as the multiplier increases and the marginal rate of taxation rises.

Inflation equally seems to favor the stability of the debt ratio for two reasons: on the one hand if there is a primary surplus (which is necessary for repayment), this surplus increases in absolute terms if prices increase in the same proportion as expenditure and income: on the other hand an increase in debt increases demand and consequently increases prices. Once more there is a possibility of stability [15].

As a result of all these, it is pertinent to fix an objective of primary deficit with respect to the GDP if one wants to avoid explosive evolutions of public debt. This guarantees the stability of the rate of indebtedness only if the interest rate is lower than growth in value. On the contrary, surplus incomes have to be realized from primary expenditures (excluding the interest of the debt) to propose a version of this model centered on the relation between repayment and fiscal pressure of the debt (by considering the repayment of capital). If one wants:

- maintain a constant relation between debt servicing and budgetary income (that is α), as well as the taxation pressure defined as the ratio of taxes to GDP that is (b);
- and borrow a fraction ¥of the GDP during the base year of the year in question by simple combination we obtain an evaluation of the growth rate necessary to repay the loan by leaving the above-mentioned parameters constant. This condition is written as (by noting A (t) the repayment annuity for a franc borrowed.

$$Y = (¥A(t)/b, \alpha) - 1 \quad (7)$$

[16] focuses on fiscal pressure because he highlights that in Africa more than elsewhere, the state is called upon to borrow so as to put in place economic and social infrastructures which can have a high social profitability but do not generate public income as such.

One essential and controversial question is to know if the burden of the debt is borne by the generation that creates the debt or it is forecasted additional taxes that will relieve the burden of expenses on the future generation. This topic is not recent since it dates from Smith (1776) and Ricardo (1818), but the theses of [17] and [18] re-opened the debate on debts in its modern form. The different theses on the possible transfer of the burden of the debt to the future generation in other words on the incidence of financing by borrowing can be summarized in 6 points [19].

(1) If the government resorts to borrowing to finance investments whose returns to the society are enough to pay interest, the burden is not transferred to the future generation. Thus, the burden is transferred to the future generation when the loan is used to fund additional public expenditure for consumption.

(2) At the financial level, and as long as the debt is internal, the Keynesians and [20] in particular refute any additional burden on the future generation. At maturity, the repayment of the debt (or its conversion) simply implies a monetary transfer to citizens who do not have state obligations in favor of those who have.

(3) The situation is different if the debt is external and is used to fund consumption expenditure. The future generation will bear the burden since their level of consumption will be reduced from the interest and the principal that will be transferred to foreign creditors. On the contrary, if the foreign debt is used to fund investments with returns that are higher than the cost of the foreign capital then the future generation will gain. In addition, since foreign borrowing enables to avoid resorting to national savings the

increase in interest rate that can discourage private investments is avoided.

(4) [17] on his part rejects this traditional approach and explains the burden of the debt on the future generation in terms of financial constraints. Contrary to taxes, borrowing is a voluntary exchange. Economic agents subscribe to public borrowings because the conditions are more advantageous than those of other placements. The subscriber increases his individual well-being. He does not make any sacrifice since he is free to buy the public debt securities or not when they are issued. On the contrary, for the future generation private incomes can no longer be used freely by the owners: part is deducted in the form of taxes to pay interests and the repayment of the principal. This is a simple transfer from tax payers to the issuers of the public debt securities. First of all, the later receive interest: if the opportunity of lending did not occur and if it was not advantageous the saving would have been used for another profitable private investment. On the contrary the tax payers bear the burden of the servicing of the debt. There is therefore no real compensation between tax and interest.

(5) In real terms and according to the traditional theory, the short-term effect should be distinguished from the long-term effect. In the short run the present generation benefits from an increase in public expenditure (or a fall in taxes), financed by the loan. However, in the long term the expansive effect on consumption caused by a fall in global savings provokes an increase in interest rates which has adverse effects on private investment. This leads to a fall in the stock of capital and long-term growth. Thus, the future generation will bear a large part of the burden of the debt.

(6) This traditional theory is contested by the hypothesis of equivalence of Ricardo and revisited by [18]. It states that the choice of tax or debt to finance additional expenditure has no importance because citizens know that the borrowing represents an increase in differed taxes. This hypothesis emanates from the postulate that the consumers forecast the future correctly and consequently their consumption does not depend only on their present income. Thus, an increase in public expenditure (or a fall in taxes) funded by debts would instead lead to an increase in their savings or that of their descendants. Since the fall in public saving is compensated by an increase in private saving, an expansionist budget policy would have no effects on the national product.

2.2 The Government and External Creditors

Considering the fact that the state contracts external debts modifies the problem that has just been examined for at least two reasons [14]. The first reason is because it is no longer necessary for the state to have enough financial resources to ensure the servicing of external debts. It requires the amount of servicing in national currency to be converted into foreign currency and this no longer depends only on the state but on the functioning of the economy as a whole. Then the servicing of internal debt no longer exists, as well as inflationist possibilities arising from an increase in the debt.

In the essential part of economic literature on debt it is considered that the external constraint is the strongest. This literature highlights an analysis that varies according to whether one considers the future as certain or there is possibility for the debtor to repay the debt. This is also the macroeconomic effect of the debt.

2.2.1 Growth and repayment of the debt

The standard model used to describe the relations between external funding of a country and repayment of debt has a dual origin. We study on the one hand the effects of foreign capital on the growth of an economy [21], and on the other hand the conditions of economic solvency of the economy [22].

When we consider a certain future and focus the discussion on the problem of repayment in foreign currency, the standard model that expresses the relation between debt, growth, production and exports is that of Harrod-Omar (fixed relation between production and capital), to which we add the hypothesis that the flow of foreign capital fills the gap between savings from internal income and investment. In addition, we consider that external savings is added only to internal savings. This flow of capital progressively constitutes an external debt whose interest reduces national income and the global balance of the balance of payment [23]. If one defines sustainable debt by the fact that the ratio β between current external debt and GDP tend towards the infinite limit we can therefore solve the model to describe the evolution of this ratio.

If one considers a growth objective of y^* (for example, such that the GDP per head increases at a given rate during the period studied), the debt will remain sustainable if the following conditions are satisfied (s being the saving rate on internal income, I/k' the inverse of the marginal efficiency of capital and r the interest rate that is assumed to be exogenous here and the third parameter is assumed to be constant for the period).

$$y^* > s.r \tag{8}$$

$$y^* > I/k' \tag{9}$$

This guarantees that the ratio β does not go beyond a limited value β^*. If the growth rate of the economy increases or if the interest rate suddenly increases, it is very likely that the debt might become explosive, that is the ratio β starts increasing indefinitely. At a certain point this could lead to a halt in external debts.

This model is evidently very rudimentary. It enables to make a gross estimation of the maximum debt level that a country can bear given its characteristics. A simplified manner of treating the problem is the criteria of Simonsen[3]: The debt can remain sustainable as long as the debtor rate of interest is less than the exports growth rate.

2.2.2 Debt and its repayment

The models that we have just examined can give indications on the conditions required for a debt to be repaid. But this is only an aspect of the question, since the borrower might not deem it necessary to reimburse. The means at the disposal of the creditor in case of default are limited. Given that the use of military force is out-dated nowadays, creditors can eventually seize some of the assets of the debtor abroad but through long and costly procedures with uncertain outcomes. Their major tool remains the stoppage of any external funding to defaulting countries. It is the normal procedure of all international financial agencies (World Bank, the French development agency, the International Monetary Fund) that was applied at the beginning of the 1990s in central Africa. The most sensitive financing in this case is foreign trade that tends to almost complete block the imports of the country. But this sanction is difficult to apply since banks face a lot of pressure from suppliers and there is fierce competition among potential suppliers. Finally, the search of good political relations with defaulted countries sometimes makes the creditor country to put pressure so that minimum reimbursement is assured.

Formally, some authors and especially [24], tried to study the question by considering two periods. The first period is for the debt and the second for reimbursement. Cohen considers that the sanction for repayment default is a fraction of the wealth of the country in the second period (this sanction is as much as the wealth of the country). He then shows that the existence of a negotiation power of the creditor country can lead to a reduction in the volume of credit offered by banks. The maximum debt level has to be such that the cost of reimbursement should be less than the cost incurred if payments cease. This type of solvency that excludes the cessation of repayments does not signify that the country will be able to honor the repayment of the principal nor the interest. Thus, Cohen constructs a solvency index (debt/net wealth) that is made up of the current ratio of debt/exports and a dynamic part that depends on the future evolution of growth rates and interest rates. The idea is interesting, but when one wants to measure solvency a stake must always be made on the future with regards to interest rate and growth rate fluctuations. The historical experience of South Africa and Zimbabwe (Former Rhodesia) leaves almost no doubt on the fact that despite the embargoes or the measures which could be taken there are slim chances that a country that has defaulted does not find funding for its external trade as long as there is money to be earned.

2.2.3 The macroeconomic effects of external debt

The analysis of debt continued with the aim of highlighting the effects that it can have from a macroeconomic stand point. Since the beginning of the 19th century, economic theory highlighted the possibility of a dual burden form external debt servicing. In fact, the reduction of income in the country that pays tends to lower prices including the prices of products that it exports. Thus, there is a burden that is evidenced by the degradation of the terms of exchange. However, previous controversies have shown that it was only a possibility and that the final result will depend on

[3]*Former Brazilian Minister of Finance*

the elasticity of imports and exports with regards to price and income. More recently studies on the debt crisis of 1982 introduced the notion of virtual burden of the external debt. The economic agents of the country will not be incited to invest or produce because of the burden of the debt makes them foresee an increase in taxes in the future.

There is a lapse of time between the date of signing of the debt contract and the effective granting of the loan; the borrower is exposed to exchange rate risk if the currency in which he has borrowed is subject to fluctuations. By assuming that the entire amount will be disbursed on the date of application of loan contract, there can either be gains in exchange or a loss. Therefore a variation in exchange rate leads to a variation in stocks and flows of the external public debt in the same direction [25-28]. [29] studied the effects of exchange rate on debt and suggests that the current account balance measures the extent and the direction of international borrowing. This evidences the fact that a country that has a current account deficit in its balance of payment has to borrow the difference in the currency of his major export partner so as to minimize exchange rate risk

3. THE SPECIFIC NATURE OF THE EXTERNAL DEBT OF SUB-SAHARAN AFRICA

The debt of sub-Saharan Africa concerns only countries which have a weak repayment potential. That is why in comparison to the rest of the developed world the burden of the debt is more important. In 2002, according to the it was estimated at 210.3 billion dollars for the European Union (EU), as against 2338.6 billion for all the developing countries. The external debt of Sub-Saharan Africa has a specific character. This unique aspect is the nature of its creditors and favorable borrowing conditions. It also takes into consideration the causes of indebtedness and the manner in which it was managed.

3.1 The Characteristics of the Sub-Saharan African Debt

The external debt of sub-Saharan Africa has two particularities. It is mostly contracted from public entities and it is contracted under flexible conditions.

3.1.1 An essentially public external debt

In comparison to the external debt of developing countries, that of sub-Saharan Africa is clearly different by the importance of official financing (bilateral and multilateral public funding) contracted under favorable conditions. In 1980 more than half of the long-term debt was contacted from international financial organizations. This proportion increased substantially later on as private and commercial loans were diminishing. Thus, in the 1990s and beyond, three quarter of the medium- and long-term African debt was from official organizations with the increasing share of multinational organizations such as the World Bank whose loans cannot be rescheduled.

On the contrary, commercial banks had only a small portion of the total external debt with an average of 17% in the 1990s according to OECD. This is quite the opposite of the situation in Latin America where during the same period commercial banks had 52% of the current debt.

The middle-income African countries are slightly different from the others. Their borrowings from commercial banks can be significant. In Nigeria for example, banks had (excluding commercial loans) 35% of all the external debt. In Côte d'Ivoire, it was about 20%. But generally external debts of sub-Saharan Africa are usually contracted under favorable conditions.

3.1.2 The conditions of favorable indebtedness

A large part of the external debt of Sub-Saharan Africa is from 44% concessional financial flows with interest rates that are lower than those on the international market, long reimbursement periods and important periods of grace (initial period during which the principal is not reimbursed but only interest). Thus according to the organization of corporation and economic development (OECD) the ratio of service of debt to current debt is relatively low in sub-Saharan Africa. Averagely it was 7.4% as against 11.2% for all developing countries in the 1990s. The average Sub-Saharan African borrowing is contracted at an interest rate of at least 4% with a reimbursement period of 26 years and 7 years period of grace and most often at a fixed interest rate. In order to study the more or less favorable character of these loans OECD put in place measures of donation elements in official loans. Borrowings with enough donation elements are considered as public aid for development. As defined, this is essentially funding aimed at favoring economic development, improvement in standard of living with favorable lending

conditions and donation elements of at least 25%.

3.2 The Causes of the External Indebtedness of Sub-Saharan Africa

There are three major causes at the origin of the indebtedness of sub-Saharan Africa: the crisis of the Bretton Woods system and the petroleum shock; macroeconomic determinants and the internal administrative deficiencies.

3.2.1 The collapse of the Bretton Woods system and the first petroleum shock

When in the 1970s the crisis of the Bretton Woods system and the first petroleum shock led to a general economic crisis in wealthy countries, banks had excess liquidity that is with surplus of Eurodollars and petrodollars without lending opportunities. Following the old adage that money does not have to sleep, banks resorted to the third world and to Sub-Saharan Africa in particular for lending. That is what was called the recycling of petrodollars [30]. Given that during the same period inflation was high and the real interest rate was negative in wealthy countries international lending became advantageous.

This tendency led to the reinforcement of bank loans to third world countries which were often ruled by armed dictatorships in the middle of the cold war (Videla in Argentina, Geisel in Brazil, Pinochet in Chili, Marcos in Philippines, Mobutu in Zaire, The apartheid regime in South Africa, etc.). Almost 800 banks became creditors to Brazil at the beginning of the 1980s.

A considerable share of these loans would be directly embezzled by governments of countries of the South of ten in complicity with banks which offer their financial expertise. Thus, the external debt of the third world would be multiplied by eight between 1971 and 1980. There had to be a real reversal of tendencies induced by the inversion of the monetary policy of the united states in the last term of 1979 so as to somehow slow down the dynamics of the indebtedness of third-world countries . The spike in interest rates would have a disastrous impact on sub-Saharan countries. In fact, most loans (70%) granted in the 1970s were at variable interest rates indexed on the American or British rates. The mechanical increase in the service of the debt produced the financial asphyxia of developing countries. During the same period the prices of raw materials dropped considerably. In August 1982, Mexico was the first country to announce its inability to reimburse its debt. It was quickly followed by other countries of the third world [30].

3.2.2 Macroeconomic determinants

The relation between the degree of indebtedness and some economic variables has been an interesting subject of economic research. Thus, [31] based on about thirty African countries showed that the ratio current debt/GDP (β) during the period 1976-1984 could be linked to the variation in exports (x, defined as the standard deviation of exports in t, t-1 and t-2), the ratio of imports/GDP (m), the logarithm of the population (Lpop) and the growth rate of the GDP (y) in the following manner:

$$\beta = -2.59 + 1.6x + 1.52m + 0.18Lpop - 0.05y$$
$$(0.51) \quad (0.13) \quad (0.79) \quad (0.22) \quad (0.002)$$

The standard deviations are in parentheses. The number of observations 265, $R^2 = 0.21, F = 5.04$. The positive impact on debt and instability of exports is therefore put into evidence. On the contrary, the studies of Ojo show that the growth of the GDP instead has the effect of reduction in indebtedness.

3.2.3 Administrative deficiencies

One of the reasons for the appetite for indebtedness contracted in the 1970s and 1980s in sub-Sahara Africa is internal [14]. Some technical ministries during the negotiation of their own projects engaged their governments for considerable amounts without informing the ministry of finance or planning. The centralization of lending conventions is not assured. This type of disorganization that was frequent during euphoria period on raw materials nevertheless ended due to pressure from international organizations or due to rigorous internal efforts. However, it was very costly for countries such as Congo Brazzaville that had to pay high charges for the survey of their external debts by foreign organizations.

3.3 The Management of Debt

At this level also, the situation of Sub-Sahara Africa is very different from what one observes on other continents. It is difficult to identify a real management of external debt in most African countries. Most often a sort of ‘’non-policy’’ makes to pay or not, pay bit by bit as long as money remains and to then reconstitute

important external and internal repayment arrears. There was therefore a policy of partial default due to the increase in repayment arrears with the consequence of high discredit on the solvency of African economies.

3.3.1 The policy of partial default

Despite the fact that most African countries have never been officially declared default on repayments, almost all have practiced a policy of rampant, repayment default. Countries which created an autonomous depreciation fund with money from theoretical budgetary income reserved for servicing the debt did not distinguish themselves from others in this area. It was observed that the apparent interest rate (the ratio of interest rate/current debt) calculated from effectively paid interest by Sub-saran African countries decreased considerably at the beginning of the 1980s. It moved from 5.9% in 1978 to 2.5% in 1980 (and on average to 2.1% all along the 1990s. Whereas, the nominal interest rates had the tendency to increase in the first half of the 1980s. This indicates that the service of the debt was only partially assured. In 1989 for example, effective reimbursement represented only 39% of what had to be paid. This rate was relatively high for multilateral creditors (86%) and low for public bilateral creditors (27%) or private creditors (29%).

3.3.2 The increase in internal and external repayment arrears

In highly indebted countries of Latin America (Brazil, Mexico, Argentina) stoppage of external financing due to the high current indebtedness was compensated by the increase in the monetary financing of the public deficit (often leading to the phenomenon of hyperinflation) and/or by the development of internal debt especially the form of treasury bonds held by households. The African countries did not adopt this practice. In the franc zone, the functioning rule forbid large monetary financing of public deficit. The interest rate rules do not permit to issue public bonds at rates that are high enough to take the risk premium into account. Out of the franc zone some countries such as Rwanda and the Democratic Republic of Congo (Former Zaire) highly resorted to internal debt. The manipulation margin was narrow because of the risk of being victims of the phenomenon of eviction on the extremely narrow financial market.

3.3.3 The discredit on the solvency of Sub-Saharan countries

The results of the above-mentioned policies were high discredit on the solvency of Sub-Saharan African economies. This state of affairs may make financial organizations which function with strict rules of profitability to stop financing these economies for a long period of time.

4. THE SUSTAINABILITY OF EXTERNAL DEBT

In this section we discuss the sustainability of the external indebtedness of Sub-Saharan Africa. Based on this, indebtedness strategies are important with regards to the problem of sustainability are proposed.

The issue here is to know whether the net returns in foreign currency enable to reimburse foreign creditors. The application of the simplest criteria which is that of Simonsen according to which the interest rate has to remain lower than the growth of exports is in reality very poor. Sub-Saharan Africa as a whole never experienced a balance of trade surplus between 1970 and 2003 (except in 1974). The balance of trade surplus does not enable to assure the solvency of the sub-Saharan African economies. This problem is therefore different in this part of the world. It is mainly financing that does not generate debt that enables to get the required foreign currency for the repayment of debt.

By repeating the two conditions expressed above (section 2) in the indebtedness and growth model of Harrod-Domar; considering that for the period 1981-2003 ([2], [32], [33], and [34]) the real average rate of economic growth was only 2.28%, that of internal growth was 14%; and given that the inverse of the marginal coefficient of capital (1/k) is approximately between 0.29 and 0.4, it appears that the average debtor interest rate that is determined by the rest of the world (exogenous) does not enable to simultaneously satisfy relations (7) and (8); such that at the end a movement of reduction in indebtedness is launched. The sustainability of the external debt of Sub-Saharan Africa is out of reach according to this model. This is because in order to determine a sustainable indebtedness level according to [1], one should be able to forecast the evolution of engagements and establishes hypotheses on the interest rate, the exchange rate and income. Given that all these hypotheses on the future that can be disproven

by real evolution, it seems difficult to examine the sustainability of a debt ex ante. This difficulty seems to condemn Sub-Sahara Africa to policies that associate structural adjustment that is a medium/long term process of infra periodical deficit financing. The outcome of the indebtedness crisis seems to really depend on this mixture of structural adjustment by debtor African countries (which have to generate budget surpluses and current balances through strict political measures) and efforts of refinancing by the creditors as the macroeconomic equilibrium is being re-established. Finally, we examine some strategies that reduce the constraints of indebtedness of Sub-Saharan African countries with the objective of minimizing the expenses of external debt service.

4.1 Strategies for Sustainable Indebtedness

These strategies are not exclusive from one another. In some situations, it can be optimal to make them complementary.

There are three strategies. Strategies relating to regulatory and institutional norms, those relating to the financial resources of the state and strategies related to the idea of sustainable development.

4.1.1 Strategies based on regulatory and institutional norms

It consists in fixing regulatory or institutional norms which can be quantitative or qualitative in nature. From the quantitative perspective, one can fix a maximum amount of indebtedness for a given period. From the qualitative perspective, one can fix rules that enable to evaluate the opportunity of borrowing and/or assure the service of the debt. This would be the case for example of a legislation that prescribes the obligation to finance the service of the debt by ordinary fiscal resources and the equilibrium of the functioning budget.

Some approaches consider that bank prudential norms can be considered as macroeconomic indebtedness strategies. This process however seems to be less pertinent when the problem of external public debt is different from that of temporal sustainability of banking activity.

4.1.2 Strategies based on the financial resources of the state

This involves comparing the cost of debt servicing to some aspects of the budget, most often fiscal resources. A very useful ratio for existing debts is;

$$\frac{inerest\ on\ the\ debt\ (year\ t_0) x\ 100}{ordinary\ fiscal\ income\ (year\ t_0)}$$

It enables to evaluate the proportion of tax returns absorbed by the service of the debt. The grill below gives an idea of the empirical rules that could be accepted:

- 10% : sustainable indebtedness
- 10-14% : average indebtedness
- 15-19% : strong indebtedness
- 20% : exaggerated indebtedness (over-indebtedness)

As for new borrowings or more precisely the decision to borrow, two ratios could be taken into consideration to judge the acceptability of an additional indebtedness:

- The annual interest rate of a new loan in monetary units/increases the tax returns in monetary units (absolute coefficient)
- Increase in the service of the debt in % / increase in tax returns in % (relative coefficient)

The absolute coefficient of an additional indebtedness puts into evidence the proportion of additional tax returns that will be used for the payment of interest for a new loan. If this coefficient is more than 1, the additional interest will be absorbed more than the forecasted increase in tax returns such that other ordinary expenses are reduced.

The relative coefficient indicates the manner in which the two variables evolve with respect to each other from one year to the other; the cost of debt servicing on the one hand and tax returns on the other. A coefficient that is equal to or greater than 1 characterizes an increase in the debt service that is more than that of tax returns. Such a situation is not critical as such on condition that the absolute coefficient be less than 1.

The limits of regulatory or financial public debt examined so far have to be examined according to [19] from the point of view of the state treasury from a purely budgetary stand point. One can also consider the case of the European Union, where public debt is considered from the point of view of its size and its tendency to increase with respect to the Gross Domestic Product (GDP). It

is however possible to demonstrate that even in case of a constant additional indebtedness each year, the ratio of debt/GDP tends to stabilize at a level which is lower than the growth rate. On the contrary a slow economic growth is evidenced by a depreciation of this ratio.

4.1.3 A strategy for a sustainable development

The basic problem here is in the criteria of evaluation of the debt under the initiative of heavily indebted poor country. Presently this level is determined by comparing the current debt of a country to its annual export returns. But the exports of most of the countries of Sub-Saharan Africa are extremely volatile variables with climate hazards, price fluctuations and exogenous shocks of all types (organization of the world market, the protectionism of wealthy countries, etc.).

The supporters of indebtedness affirm that unfortunately a way of estimating a sustainable debt service by a country is to compare its debt service obligations to its potential of financing poverty reduction programs. We propose in addition to [10], to evaluate the non-invasive character of debt on the basis of resources that a country needs for millennium development objectives and to use the amount generated by the reduction of their debts to fill the financing deficit.

Moreover, still in the spirit of [10], we suggest that a mastery of the service of the external debt of Sub-Saharan Africa requires the determination of the cost of the poverty reduction strategies or the millennium objectives. If the difference between the net achievable returns and the expenditures related to the millennium objectives is negative, their debts will be reduced all the more and/or increase the aid that is granted to them.

5. CONCLUSION

The very low repayment capacity of external debts is evident. As a result, the borrowings contracted have to be analyzed with a lot of care, especially from the perspective of their short- and long-term incidence on the budget of the state and on the balance of payment [14]. It appears unreasonable to borrow when the projects carried out have only a random impact on economic growth or generate only small returns in foreign currency. Thus, the issue of the international indebtedness of Sub-Saharan Africa requires the determination of the ex-ante capacity of international reimbursement. A pragmatic approach to this reimbursement capacity implies a further exploration of the strategies proposed in this study. They are all similar in that they transpose principles of private management to the public sphere (respect of ratio).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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Peer-review history:
The peer review history for this paper can be accessed here:
http://www.sdiarticle4.com/review-history/60482