Siméon Maxime Bikoue

Economic growth, industrialization and macroeconomic analysis on Africa

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Preface

This chapter (I) aims to study the impact of remittances from African migrants on their home countries' growth and development. These funds constitute a steadily increasing financing means in all these countries, even though development aid is still the preferred financing method. To highlight the role of these funds, we relied on a number of experiences as far as their targets and uses are concerned. Globally speaking, stylized facts based on case studies show that remittances have a positive impact on migrants' home countries' economies. In particular, they reduce household poverty and thereby increase their well-being. In addition, they stimulate local economic activity and growth. Given the role and stability of these funds, cost reduction is essential to encourage migrants to send more money through official transfer channels. It is also necessary to increase the managerial efficiency of these funds by orienting them towards implementing profitable projects, rather than devoting them entirely to household consumption. Lastly, it is necessary to encourage the capture of related financial flows by the traditional banking system and microfinance institutions

This chapter (II) showed that industrialisation by substitution of imports has been a failure in Africa and has made industries in this part of the world less competitive on the foreign market. As such, a different industrialisation strategy which in the context of globalisation of economies and the fierce competition of the international market reinforces the competitiveness of African countries. This new strategy was translated amongst others by the appropriation of new technologies, protection of infant industries, cloning of manufactured products imported out of Africa, regional integration and the culture of exporting manufactured products.

This chapter (III) examines the different strategies required for the sustainability of sub-Sahara Africa's external debt by applying the Simonsen criterion and the conditions of the Harrod-Domar debt and growth model. 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.

The aim of this chapter (IV) is to try to explain governance failures in Sub-Saharan Africa and to identify reforms which can lead to good governance. The failures are mainly due to institutions that do not work properly, corruption, and lack of real democracy. Governance reforms can be both institutional and political. The political reforms should promote and reinforce democratic practices. Institutions should guarantee the rule of law and limit the elite's economic and political power.

The purpose of this chapter (V) is to revisit the basic model of labour supply taking into account the existence of corruption in public administrations in developing countries. The worker-consumer programme modified by the integration of bribery shows that at equilibrium, the optimal solution leads to a Marginal Rate of Substitution of leisure consumption equal to the real contractual wage rate plus the actual bribe rate. Because of the latter, the reserve wage is no longer an essential determinant for participating in the labour market. Corruption seems to amplify the substitution and income effects.

The purpose of this chapter (VI) is to find out what the impact of external shocks on the Cameroon'scocoa exports is and how this country reacts in order to promote its exports. We used the Bela Balassa methodology revisited by Carthy, Neary & Zanalda (1994) to solve the problem. The major result is that the price effect has been unfavourable from 1983 to 1990. However, during the same period the world demand of cocoa was favourable. Unfortunately, the rigidity of the cocoa supply structures did not allow the producers to take advantage of that favourable conjuncture.

Editor

S.M. Bikoue

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1 African migrants and remittances: Impact on growth and development of their home countries

Introduction

Each year, Africa loses many of its most skilled workers to the benefit of the Northern countries. According to Kouarné (2000), this phenomenon, described as a brain drain, is longstanding. It dates back to independence. It has been intensified over the past decade with an average loss of 20,000 professionals per year (See Table A. 1 in the Appendix). It is a great concern in home countries, especially as host regions now seem to make every effort to encourage skilled immigration.

The loss of the most skilled labour force from African countries could nonetheless be offset by remittances sent by these professionals to household or community members in their native countries. Indeed, remittances represent the second largest source of external financing for developing countries, after foreign direct investment and public development aids (Ratha, 2003). In a context of aid declining trends and the absence or failure of production and credit markets for local production structures, funds from migration can help finance local activities and contribute to develop countries providing migrants.

The effects of international migration in terms of economic development in migrants' countries of origin remain ambiguous. Migration is recognized as a selective process. The most educated and dynamic are those who decide to migrate. It is questionable whether remittances from migrants can actually make up for the resulting deficit. They could lead to dependency, enabling households to specialize in migration instead of using the money to invest in local productive projects.

This investigation examines the impact of remittances from African migrants on their countries of origin. The objective is threefold: We will first make an inventory of the importance of emigration in Africa. Secondly, the scale and determinants of remittances from African migrants will be highlighted and thirdly, the impact of these funds on the growth and development of their home countries will be examined.

Migration: Some key elements

According to the United Nations' data, the number of international migrants has generally increased by about 14% between 1990 and 2000, from 154 to 175 million. As concerns Africa, the number of migrants virtually remained stable over the same period: 16.2 million in 1990 and 16.3 million in 2000 (Cameroon is the home country of 1,434 among the 95,153 migrants with tertiary education residing in the United States in 1990 (Carrigton & Detragiache, 1998 quoted by Kouamé, 2000).

Lucas (2005) believes that one of the defining features of international migration in Africa lies in its extreme instability over time. As a matter of fact, several African countries alternate between immigration and emigration regions. Table A.2 in the appendix shows the five-year net migration rates for the 1975-2000 period. Although sub-Saharan Africa as a whole has experienced net migration during this period, there are some particularities depending on countries. In Cameroon for instance, the net migration rate is positive between 1975 and 1980, and between 1980 and 1985 (1.45 and 0.46 respectively). However, it is negative between 1985 and 1990, and 1990 and 1995 (-1.05 and -0.08 respectively), and zero between 1995 and 2000. The relatively favourable economic and socio-political situation of the country between 1975 and 1985 seems to be a limiting factor for the departure of its nationals. However, it favoured the arrival of foreigners, especially from neighbouring countries. Between 1985 and 1995, it was a period of economic crisis and political jousting (early 1990s). This phase was somehow featured by the incentive of Cameroonians to leave the country, hoping to find better life elsewhere. Finally, between 1995 and 2000, with the slight economic recovery and a decline in social tensions, not to mention the policies applied by most host countries to fight against immigration, many people found it better to stay in their country.

According to Docquier & Marfouk (2004), migration rates have slightly changed in most African countries, while they have considerably increased in Latin America.

This study is most focussed on African migrants to the OECD countries who represent about 25 percent of the total migrant population according to the World Bank. In 2000 and in line with Table A.3, there were 2.8 million migrants from sub-Saharan African countries to OECD countries about 0.45% of the overall original population). This proportion is low compared to other regions of the world as Asia which has the highest stock of migrants.

The African countries with the highest absolute numbers of migrants in the OECD countries in 2000 were South Africa, Nigeria, Kenya and Angola, with more than 190,000 migrants. Cameroon is far behind with 57,050 migrants. Moreover, apart from Lesotho, the number of migrants from all the other countries listed in Table A.3 has increased between 1990 and 2000. Migrants mostly settle in former metropolises. Thus, those from French-speaking African countries settle in France, while nationals from English-speaking African countries settle in England or the USA. Cultural reasons are often mentioned. The language for instance allows migrants to be quickly integrated in their host countries.

Population migrations in developing countries mainly concern the most skilled workers. According to Page & Plaza (2005), Latin America and Africa are the two regions of the developing world where the most highly skilled professionals reside in developed countries. The number and proportion of the most qualified Latin American and African populations living in the OECD countries are provided in Table A.4. As concerns Africa, it appears that South Africa and Nigeria have the highest numbers of skilled migrants in both absolute and relative values. Despite the low absolute value of the most skilled migrants in Africa, their proportion compared to the total number of migrants to the OECD countries is higher than in Latin America. According to Adepoju (2002), the most skilled migrants - doctors, teachers, engineers, researchers - have higher wages and better living conditions elsewhere (World Bank, 2006).

Globally speaking, most of the sub-Saharan African countries lose a significant share of their skilled labour every year. This situation is further accentuated by the host countries' current immigration policy which favours the integration of the most skilled migrants. In fact, in response to the growing shortage of skilled workers, many host countries have attempted to shift the focus of their immigration policies with the aim of promoting the recruitment of highly skilled workers (Faini, 2007). This new turning point in immigration policies has become a source of considerable concerns in traditional migration countries which fear losing their full productive potential.

However, some authors believe that the loss of highly skilled labour from migrant-sending countries is offset by remittances from the migrantsto their families.

Remittances and economic situation

In recent years, remittances have been more closely examined by academics, policymakers, migrant associations and some financial institutions. For instance, the latest Global Economic Prospects report published by the World Bank at the end of 2006 was entirely devoted to the economic implications of remittances and migration (See table A.5 in the appendix). In this section, we will stress on the extent of remittances from African migrants, analyse their determinants and study their economic impact on migrants' home countries.

The importance of remittances in Africa

The renewed interest in remittances can be explained by the increasing volume of official financial transfers to low-income countries, and by their potential influence on recipient countries' development. According to the World

Bank estimates, developing countries have received official remittances amounting to $ 251 billion in 2007. This figure represents an increase of about 11% compared to the amount received in 2006, and 29% compared to that of 2005 (Note 1).

It goes without saying that the share of the various regions in this total amount varies. While the Diasporas of Latin America and the Caribbean, as well as those of South Asian sent $ 61 billion and $ 44 billion respectively to their home regions, the Diasporas of sub-Saharan Africa have barely officially transferred $ 12 billion (Ratha, 2008).

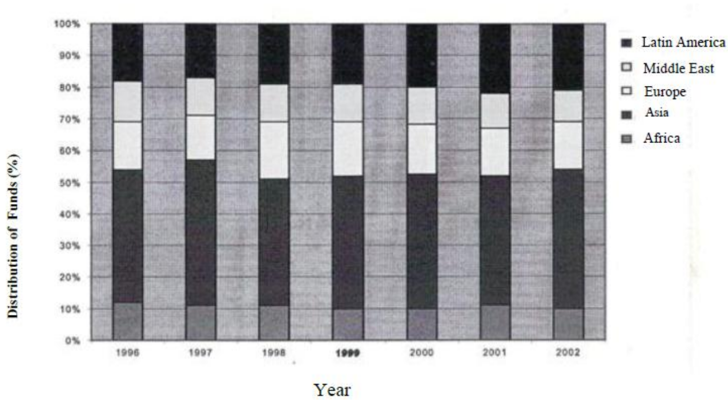

Figure 1. *Transfer of funds to developing countries by region 1990, 2002*

Source: IMF, Balance of Payments' Statistical Yearbook

Figure 1 shows a better view of the distribution of migrant transfers in different regions of the world. We note that these funds are not evenly distributed. In this regard, Asia is the most solicited destination. From 1996 to 2002, 40 to 46 percent of annual transfer flows are in Asia. Latin America and the Caribbean come next with 17 to 22%, Eastern Europe with 15 to 18%. Lastly, Africa comes with 10 to 12% of transfer flows. This result is not surprising since Asia is the most populous region of the world with the largest diaspora on the planet.

Looking at the absolute value of remittances by country in sub-Saharan Africa, Ratha *et al.*, (2008) estimate that the top ten countries which benefited from these transfers in 2007 were Nigeria ($3.3 billion), Kenya ($1.3 billion), Sudan ($1.2 billion), Senegal ($0.9 billion), Uganda ($0.9 billion), South Africa ($ 0.7 billion), Lesotho ($ 0.4 billion), Mauritius ($ 0.2 billion), Togo ($ 0.2 billion) and Mali ($ 0.2 billion) (Note 2).

Table 1 shows that migrant remittances to sub-Saharan Africa have steadily increased since 1990. However, in contrast to all developing countries, their annual amounts in this period remain lower than other types of international financing, especially Official Development Assistance and Foreign Direct Investment. In some countries - Botswana, Ivory Coast, Lesotho, Swaziland, Togo and Mauritius - remittances, however, were higher than official development assistance. In Lesotho, Swaziland, Mauritius and Togo, these funds were also higher than foreign direct investment (Ratha *et al.*, 2008).

Table 1. *Financial flows to sub-Saharan Africa (in billion of dollars)*

Year Types of flows (1)	1990	1995	2000	2005	2006	Variation 2000-06 (%)
ODA	17	17.8	12.2	30,8	38,2	213.11
FDI	1.1	4.5	6.8	19,3	17,1	151.47
PI	0.4	3	4.2	7.4	15.1	259.5
R	1.8	3.2	4.3	8.8	10.3	139.5

(1) Four types of flows were identified; ODA = Official Development Assistance; FDI = Foreign Direct Investment; PI = Portfolio Investment; R = Remittances. Source: From the Table provided by Ratha *et al.*, (2008); Global Development Finance database, Tuesday, 2008.

These figures do not include non-registered remittances. Indeed, money can be sent through informal channels (friends or families), Non-Governmental Organizations (NGOs), religious missions and the like. In countries with dysfunctions in the formal financial system like most poor countries, informal channels are often the only way to transfer money. As a result, informal remittances may exceed those officially registered (De Bruyn & Kuddus, 2005; Maimbo & Ratha, 2005).

In developing countries in general and sub-Saharan Africa in particular, remittances from migrants are therefore an external source of steadily rising capital. If foreign direct investment and capital flows have drastically dropped in recent years due to recession in high-income countries, remittances by migrants have continued to increase. At the beginning of the 1980s, the importance of these transfers was already recognized to offset the loss of human capital in developing countries due to migration (Faini, 2007). The question then is whether this compensation is "pure". In other words, do skilled migrants send more money than low-skilled ones?

Do skilled migrants send more funds?

According to the World Bank (2006), *"the brain drain negative effects are to some extent offset by remittances from migrant workers*". Some investigations establish a positive relationship between migrants' qualification level and the amount of funds sent. In other words, the volume of remittances from migrant workers tends to increase with their skills level (Johnson & Whitelaw, 1974; Rempel & Lobdell, 1978 quoted by Faini, 2007). However, not all empirical research confirms this relationship. The unfinished literature leaves many unanswered questions. First, the empirical results are mixed. Rodriguez & Horton (1994) quoted by Faini (2007) show that in Philippines, migrants' qualification level has no impact on the amount of funds transferred. Secondly, according to Faini (2007), it is possible that skilled workers are from wealthy families with high educational level, and that the incentives to send money are therefore lower. Finally, they may spend more time abroad, either because they are more inclined to gather their families in the host country, or because they have less difficulty in doing so. Indeed, a characteristic result of literature is that transfers tend to decline with the duration of migration (Lucas & Stark, 1985). Therefore, even a positive educational impact on the amount of remittances cannot be evidence that brain drain is associated with huge transfers. The direct qualifications impact can actually be positive, but the overall impact, which takes into account the fact that skilled migrants tend to stay abroad for a long time may be negative as well.

While focusing on the change in the composition of migration made up of more skilled migrants with higher wages, Faini (2006) finds that high salaries have two contradictory effects on funds transfer to the home country:

(a) a "salary" effect where higher remunerations are associated with huge transfers to those who remain in the country;

b) a "clustering" effect where higher wages allow migrants to gather their immediate family members, which has a negative impact on the amount of transfers. The overall impact of a more skilled migration on transfers is therefore an empirical issue. Generally speaking, the results of the above author suggest that a more skilled migration is correlated with smaller transfers.

Determinants of remittances

The level of remittance flows made by a migrant depends both on his/her potential (that is, on his/her income and savings) and his/her motivation to repatriate his/her savings in his/her home country. Of course, the willingness to make these transfers also depends on the time to spend during migration (how long do migrants intend to stay abroad - temporarily or permanently?), on migrants' familial status (single, married, with or without children) and network effects (do they migrate alone, accompanied by their families, are they still connected to those left behind?).

One of the methods of studying the determinants of transfer flows is to analyse migrants' key motives when sending money. Research on the issue distinguishes between pure altruism, mere self-interest and unspoken arrangements with the family left behind in their country of origin. As Stark (1991) points out, there is no general theory as far as remittances are concerned. Investigations on this phenomenon provide valuable descriptive data as well as empirical research results, but it is partially explained, and these studies have a number of limitations.

Pure altruism

One of the most intuitive motivations for sending money back to the home country is what investigations on the issue call "altruism"; in other words, the migrants' concern for the well-being of their families in their native countries. According to the altruistic model, the migrant is satisfied with the idea of the well-being of his/her parents.

The utility function of the altruistic migrant can be represented according to Faini (2007) by:

$$U = U\ (C_M\ ,\ C_F) \tag{1}$$

Where C_M and C_F are the respective consumption levels of the migrant and his/her family members who remain in the country. There are two budgetary constraints: that of the emigrant

$$C_M = Y_M - R_M \tag{2}$$

Where Y_M represents the migrant's earnings and R_M the transfers; and that of the family members in the home country:

$$C_F = Y_F + R_F \tag{3}$$

where Y_F represents the family income and R_F the amount of transfers received. We suppose that

$R_F = R_M$, in other words, the amounts sent and received are equal.

By substituting budgetary constraints (equations 2 and 3) in the objective function and by maximizing with respect to R, we obtain the condition of first order:

$$U_m\ (C_m,\ C_F) = Uf(C_m,\ C_F) \tag{4}$$

Where U_i is the marginal utility relative to C_i (i = M, F). Therefore, at the optimum, the marginal utility of C_M must be equal to that of C_F. This framework can be used to assess the impact of Y_F variation on transfers. Assuming that transfers remain constant at the outset, a decline in Y_F leads to a decrease in C_F and an increase in the marginal utility of family consumption (U_F). To restore balance, transfers should therefore increase.

This model is based on several assumptions. First, the amount of transfers is supposed to increase along with the migrant's income. Second, this amount should decrease as family income increases. Third, the amount should decrease over time as family ties become more distorted. It should be the same when the migrant permanently settles in the host country, and the members of his/her family come to join him/her. Empirical evidence for Botswana corroborates the first argument. An increase of 1% in the migrant's salary implies, all other things being equal, an increase in the amount of transfers ranging from 0.25% to 0.73% for low and high wages respectively. However, after finding that the correlation between the level of transfers and the income level in the home country is insignificant, it can be concluded that altruism alone is not enough to explain the motivations for making transfers, at least as concerns Botswana (Lucas & Stark, 1985).

Simple personal interest

Remittances to family members in the native country may have another reason, that of the migrant's personal interest. First, a migrant can send money to loved ones while thinking about the inheritance, as long as bequests are subordinate to heirs' behaviour. Second, owning property in one's home country can encourage the migrant to send money to parents living there so as to make sure that the caregivers do the right thing. Empirical data from Kenya and Botswana show that the beneficiary parents feel better as the share of salary transferred by the migrant is huge (Hoddinott, 1994; Lucas & Stark, 1985). However, it is unclear whether the reason is the inheritance prospect or the concern to see parents take care of the property belonging to the migrant. Third, according to Stark (1991), the intention to go back to one's country may also push the migrant to transfer funds in order to invest in real estate, financial assets and public goods (which will enhance his/her prestige and political influence within the local community), and/or in social capital (relationships with family and friends for instance). This is particularly the case for most workers from the Cameroonian western region living abroad, who increase their remittances as their final return back to their home country is approaching.

Tacit family arrangements: co-insurance and loans

Arrangements made by households, especially within the extended family, may be considered more complex in reality, and certainly more balanced than in the case of the two extremes, pure altruism and simple self-interest. For instance, Lucas & Stark (1985) explain the motivations for transferring funds, using a model called "temperate altruism". In this model, the decision to make transfers falls within a family context, these transfers constituting an endogenous aspect of the migratory process. If we look at the household as a whole, remittances should be a mechanism for redistributing earnings. Two main sources of potential gain are taken into account: the dilution of risks and investment in young family members' education. In this context, the arrangement within a family is considered an "implicit co-insurance agreement", or an "implicit family loan agreement". This tacit contract between the migrant and his/her family is protected from the break-up by familial own assets being credit and loyalty, but also, by the purely migrant's personal motives as the idea to inherit, invest in his/her home region in property that the family will take care of, and the intention to go back to his/her country with dignity.

In the implicit co-insurance model, it is assumed that initially, the migrant plays the role of an insured, and the family in the home country that of the insurer. The family finances the initial cost of the migration project which, in most cases, represents a significant amount. In a second phase of the migration process, the migrant himself/herself can also play the role of the insurer for his/her family members in the native country. It is assumed that this is possible if the migrant already has a secure job, earns a high enough wage and intends to increase his/her income. By receiving the money transferred, the family has the opportunity to improve their consumption, embark on investment projects with much greater risks and thus make them selves much more useful. Evidence from Botswana shows that families with the most livestock receive much more cash transfers during drought periods (Lucas & Stark, 1985).

The impact of remittances on home countries' economies

The impact of migration transfers on the development of migrants' native countries is controversial. If there is any consensus, it is on that these transfers represent, on the macro-economic scale, a non-negligible source of currencies. They could also have a significant impact on the well-being of individuals and households concerned, but also, on the economic development of their home countries as a whole.

Improving families' living conditions

Transfers can cover, to a greater or lesser extent, families' consumption needs whose cash income is often low and unstable in their country. By increasing incomes and diversifying their sources, migrants' money helps to improve families' daily lives and deal with crisis situations as drought or famine. Savina Ammassari (2005) conducted a study of 340 Ghanaians and 300 Ivorians who came back from abroad and settled in their respective cities. In line with this investigation, migrants reported that the sums transferred were most frequently used to meet family needs. In particular, 84% of Ivorians and 75% of Ghanaians primarily used them to take care of their families. In fact, several studies in Africa corroborate this result and highlight the critical importance of these resources for migrant households, not only in times of crisis, but also, in ordinary moments.

A Ghanaian migrant to London explained that the 100 pounds he sent each month to his parents were used to take care of them, pay for electricity and water bills, public transport and other daily expenses.

There is some consensus that remittances help reduce poverty. For instance, Adams & Page (2003) estimate on a sample of about one hundred countries, that a 10% increase in remittances per capita is followed by a 3.5% drop in poverty rate. Although these results are questionable, several microeconomic studies using household surveys point in the same direction. In Egypt, the number of poor rural households declined by 10% when remittances were included in their incomes, which account for almost 15% of their total income (Adams, 1991). Remittances could help reduce poverty by 11 percentage points in Lesotho (from 63%

to 52%), 11 points in Uganda, 6 points in Bangladesh and 5 points in Ghana (Adams, 2005). Lachaud (1999) shows that remittances in Burkina Faso contribute in reducing the incidence of rural poverty by 7.2 percentage points, and urban poverty by 3.2.

Transfers can also be a form of insurance against uncertainties. The New Economics of Labour Migration (NELM) takes into account the specificities of the departure zones, essentially rural, as well as the constraints and risks weighing on these populations. Given the virtual absence of insurance or credit markets in most sub-Saharan African rural areas, migration funds provide a form of protection, insurance against uncertainties and precariousness of populations residing in these areas (Daum, 1998). This money can also make it easier for family members and relatives to access essential basic services as health and education. Serving as a safety net and offsetting (in part) the lack of a social protection and insurance system, these funds contribute in reducing poverty and strengthening people's capacities to participate in the developmental process.

There is also a close relationship between money transfers and income distribution. In empirical assessments, most investigations in line with the impact of remittances on income distribution use the Gini index. Studies show that remittances have accentuated the inequalities measured by this index. One of the main reasons for this fact is that wealthy families are more able to pay international migration's costs than others. For instance, data collected in Egypt show that despite poverty reduction (because a great number of poor households actually benefit from money transferred), remittances have increased income inequality (Adams, 1991).

Investment achievements

Remittances can be earmarked for investments, specifically for projects in home countries which may be strictly private (building or acquisition of housing, creation of small businesses, trade, etc.) In this case, migratory incomes stimulate local economic activity and thus growth, and somehow replace loans and other financing modes very often inaccessible to the poor populations and less adapted to their needs. By loosening the particularly strong financial constraint in rural areas, these incomes enable to invest in new activities or techniques favourable to an increase in agricultural productivity. In Botswana, Malawi or Zambia for instance, there is an undeniable link between savings transfer and improvements in rural areas, particularly in irrigation (Daum, 1998).

Migrants from the Kayes region (Mali) are the main actors in local development through village associations. They are being attributed 60% of infrastructures in the region. The Malian community is perfectly structured on the organizing model of villages. The village chief has his representative among the migrants, and each association created in France is copied on the hierarchical structure and the social order of the village (Penent, 2003).

The Economic Initiatives and Migration Programme (EIMP), implemented since 2001 by the NGO pS-Eau, aims at supporting the economic projects of migrants from sub-Saharan Africa and North Africa: resettlement projects in their home countries, remote investment and creation projects in France. This programme runs a network of a dozen support operators (the Business Creation Support Group). The "Remote Investment" scheme allows migrants to use their savings as a guarantee for loans to start an economic activity in their country of origin. For the migrant, it is about securing economic investments in Senegal or Mali (these investments are both an alternative to financial transfers for consumption, and a complement to the social investments of associations). For the Senegalese or Malian promoter relating to the migrant, it is a facilitated access to the financing of an economic activity. For the banking organization, it is a "new product" and a specific service to offer to migrants. This type of investment meets the expectations of migrants living generally with their families in France, and benefiting from a stable family and professional status. It concerns migrants with available savings who wish to invest in an economic activity rather than making recurrent transfers for family consumption.

It should be noted that if, in the right circumstances, a significant percentage of remittances can be allocated to productive companies, one may still wonder why such savings' orientation only occurs in some communities. According to Massey *et al.*, (1993), it is clear that factors behind peoples' migration are also very often those limiting the productive potential of remittances. Thus, the lack of public services or the poor state of infrastructures seriously limit the "productive" potential of remittances. Many migration areas in poor countries are villages far from markets which lack basic infrastructure. Migration is likely to have a greater impact on development where minimum conditions are met thanks to the intervention of local institutions, and when the migrant is not expected to play alone the roles of worker, saver, investor and producer.

Remittances can also have negative effects depending on how they are used. Among these effects, one often quotes the predominance in migrants' families, of the consumption logic on that of accumulation. The satisfaction of new consumption habits usually implies an increase in imported goods (Peoples in developing countries in general and Africa in particular are extremely influenced by Western lifestyles and habits).

Similarly, the review of empirical studies of developing countries by Gubert (2000; 2001) shows that if there is no doubt on the importance of transfers in households' income, their impact is quite different on agricultural production and productivity. In some cases, remittances compensate the loss of labour force resulting from migration by allowing the hiring of agricultural workers and equipment acquisition. In others, transfers are bad for agriculture as they provide families with the opportunity to maintain the same income level while reducing their labour supply. Such a phenomenon, which can be described as annuitant, is followed by a contraction in agricultural production. In the case of the Kayes region in Mali, data shows that despite a better endowment of agricultural equipment, families participating in international migration significantly reach lower production levels than those obtained by families without migrants, and this without the result being attributable to the lack of manpower (Gubert, 2000).

Conclusion

African migrants' behaviours on remittances to their country of origin reflect their commitment in improving the economic and social situation of those left behind. These transfers constitute a very important capital source for African countries. They have been steadily increasing since 1990. However, in contrast to all developing countries, their annual amounts are still lower than those of other types of international funding, especially the Official Development Assistance.

Remittances to home countries are often underestimated, as money can be sent through informal channels. In countries with dysfunctions in the formal financial system like most poor countries, informal channels are often the only way to transfer money. As a result, informal remittances may exceed the volume of officially registered ones. The reduction of transfer costs is likely to increase the amount of money transferred by migrants, and also allow the use of formal channels.

The question we wanted to answer in this study was whether funds transferred have a positive impact on the development and economic growth of migrants' home countries.

Empirical studies suggest that the economic impact of remittances remains ambiguous. In addition to their direct impact on the economies of migrants' home countries (reducing poverty, reducing foreign exchange shortages, productive investment, etc.), transfers also have positive indirect effects. They attenuate capital and risk constraints, facilitate the release of other investment resources and have a multiplier effect on consumer spending.

Nevertheless, remittances are not a panacea and cannot be a substitute the sound economic policies in developing countries. On the other hand, if the economic context pushes for migration, the impact of transfers on the development of the migrant's home regions is lessened. The best way to maximize the positive effects of remittances on growth in African countries will be to apply models of sound economic management and developmental strategies involving all economic actors. These controversies suggest that much empirical research still needs to be conducted to highlight the actual effects of remittances in each particular economic context.

Generally speaking, the main issues currently being addressed are the different measures to be taken to improve the developmental impact of remittances. Four measures are taken into account:

Firstly, migrant associations must be involved in strategic initiatives in the field of remittances and work collaboratively with public authorities and NGOs.

Secondly, the capture of related financial flows by the traditional banking system and microfinance institutions should be encouraged.

Thirdly, host countries must provide undocumented migrants with access to official remittance channels.

Fourthly, it is necessary to increase the managerial efficiency of these funds by orienting them towards the realization of profitable projects rather than devoting them entirely to household consumption.

Notes

Note 1. It should be noted, however, that this ranking changes when assessing migrant remittances as a percentage of the GDP. In this case, Losotho comes first with transfers estimated at 25% of the GDP, followed by Gambia and Cape Verde with 12.5% and 12% respectively.

Note 2. Since 1996, pS-Eau has been providing the secretary in France / support and reflection service of the Local Development Migration Program (LDMP), a public support system for reintegration through the creation of economic activities in Senegal, France, Mali and Mauritania. Partnerships established in the North and South and actions carried out in this framework since 1996 have enable to define the objectives and the content of the Economic Initiatives and

Migration Program, which opened to creation in France and in both areas.

Appendix

Table A.1. *International migrants by region of destination in million, 1960 - 2000*

Year	1960	1970	1980	1990	2000
Region	32.1	38.3	47.7	89.7	110.3
Developed nations	29.1	35.2	44.5	59.3	80.8
Developed countries without the USSR	43.8	43.2	52.1	64.3	64.6
Developing countries	9.0	9,9	14,1	16.2	16,3
Africa	29.3	28.1	32.3	41.8	43.8
Asia	6.0	5.8	6,1	7.0	5.9
Latin America and the Caribbean	12.5	13.0	18.1	27.6	40.8
North America	2.1	3.0	3,8	4.8	5.8
Oceania	14.0	18,7	22.2	23.0	32.8
Europe	2.9	3.1	2. 3	30.3	29.5
Former USSR	75.9	81.5	99.8	154.0	174.9

Source: United Nations Î2Û031

Table A.2. *Net Migration Rates per thousand population: 1975-2000*

	1975-1980	1980-1985	1985-1990	1990-1995	1995-2000
EasternAfrica	-1.09	-0.65	-0.11	-8.60	-13.02
Burundi	-2.83	4.33	-0.11	-8.60	-13.02
Comoros	5.68	-2.14	-1.83	0.00	0.00
Djibouti	56.77	5. 65	38.49	-10.95	6.57
Eritrea	0.00	0.00	0.00	-22.42	-0.23
Ethiopia	11.77	3.21	3.54	3.35	-0.15
Kenya	-0.04	0.04	0.05	1.74	-0.15
Madagascar	-071	-0.17	-0.13	-0.09	-0.04
Malawi	-0.35	-0.31	20.95	-17.13	-093
Mauritius	-4.41	-5.45	-5.77	-1.28	-0.35
Mozambique	1.54	-5.89	-19.46	9.79	1.01
Reunion	-9.54	0.72	-0.62	2.68	2.45
Rwanda	-2.18	-3.96	0.48	-57.56	61.49
Somalia	59.79	-25.37	-16.06	-21.86	1.71
Uganda	-2.70	-1.56	3.11	1.44	-0.60

United Republic of Tanzania	-025	0.36	0.57	4.16	-1.25
Zambia	0.19	1.51	0.85	-0.16	1.74
Zimbabwe	-3.08	3.74	2.71	-3.28	-0.25
Middle Africa	0,20	-0.43	-0.09	3.71	-3.27
Angola	0.58	6.12	-341	2.83	-2.07
Cameroon	1.45	0,46	-1.05	-0.08	0.00
Central AfricanRepublic	-0.09	3.25	-2.94	2.38	0.64
Chad	-5.37	-3.41	1.53	0.63	2.73
Congo	0.00	0.11	0.18	1.05	2.60
DemocraticRepublic Congo	0.77	-2.31	0.43	5.90	-6,40
Equatorial Guinea	-26.85	48.77	0.00	0.00	0.00
Gabon	6.17	5.31	4.53	3.88	2.43
Soa Tome and Principe	-2.53	-10.68	-4.42	-3.24	-2.86
SouthernAfrica	-0.05	0.73	0.39	0.25	-0.26
Botswana	-2.05	-1.66	-1.54	-1.01	-0.86
Lesotho	-3.27	-2.27	-7.28	-7.37	-4.15
Namibia	-9.16	-5.39	11.78	0.46	2.27
South Africa	0.54	1.16	0.25	0.81	-0.16
Swaziland	-2.95	0.33	5.98	-8.37	-1.09
Western Africa	0.40	-0.80	-0.71	-0.71	-0.45
Benin	-4.85	-3.75	-3.23	1.84	-3.20
Burkina Faco	-6.73	-5.98	-3.07	-2.66	-2.30
Cape Verde	-17.37	-11.11	-10.10	-4.65	-2.42
Cote d'Ivoire	11.07	9.11	4.35	2.98	0.80
Gambia	7.29	7.01	10.53	8.78	7.42
Ghana	-10.77	3.40	-0.42	0.49	-1.19
Guinea	1.55	-1.52	2.45	10.41	-7.18
Guinea-Bissau	17.45	-0.04	0.35	3.63	-1.68
Liberia	1.38	0.00	-34.17	-26.51	35.89
Mali	-5.25	-5.81	-5.65	-5.37	-5.10
Mauritania	-1.28	-1.88	-3.15	-1.36	0.80
Niger	-0.71	-0.81	-0.52	0.12	-0.12
Nigeria	2.87	-1.94	-0.23	-0.21	-0.18
Senegal	0.78	0.35	0.00	-1.79	-1.13
Sierra Leane	0.00	0.00	3.29	-18.68	-5.19
Togo	-8.36	3.64	0.06	-6.67	6.06
Sub-SaharanAfrica	-1.35	-2.35	-0.35	-1.53	-0.94

Source: UN population, Division, Dept of Economic and Social Affairs, World population prospects: 2002 Revision.

Table A.3. *Migrants from Sud-Saharan Africa to the OECD Countries*

Migrant in OECD Stock increase 1990-2000

Migrant in OECD Stock increase 1990-2000					
		Per 1000 Home Population		Per 1000 Home Population	Percent of 1990 stock
Eastern Africa	1,060,496	4.20	285,351	1.28	53.4
Burundi	10,095	1.61	3,654	0.62	110.5
Comoros	17,723	25.14	6,484	10.53	182.2
Djibouti	5,359	8.05	851	1.42	108.0
Eritrea	35,127	9.46			
Ethiopia	113,938	1.74	38,347	0.67	57.0
Kenya	197.445	6.46	47,738	1.76	38.1
Madagascar	75,954	4.76	10,503	0.75	60.6
Malawi	15,024	1.32	4,179	0.40	49.2
Mauritius	86,410	72.86	14,648	13.06	22.5
Mozambique	85,337	4.78	13,862	0.88	29.8
Reunion	14,832	1.92	5,584	0.77	147.7
Rwanda	7,602	96.23	623	8.31	10.5
Seychelles	131,342	15.06	58,285	7.34	142.9
Somalia	82,232	3.50	17,635	0.86	30.34
Uganda	70,006	2.01	13,853	0.45	28.3

U. Rep. of Zambia	34,825	3.34	15,349	1.65	118.0
Zimbabwe	77,345	6.11	33,757	2.92	131.8
Middle Africa	469,787	5.05	110,088	1.34	54.0
Angola	195,675	15,80	31,246	2.88	34.9
Cameroon	57,050	3.77	24,785	1.85	128.5
Central African	9,855	2.65	1,667	0.50	56.0
Republic	5,836	0.74	1,060	0.15	62.7
Chad	100,052	29.03	25,642	8.63	242.2
Congo	66,488	1.37	15,362	0.36	20.5
Dem. Rep. Congo	12,149	26.64	7,964	19.66	4488.6
Equatorial Guinea	10,951	8.71	1,964	1.78	91.9
Gabon	11,732	78.74	396	2.99	14.6
Southern Africa	353,733	7.05	157,848	3.41	133.7
Botswana	4,298	2.49	1,968	1.28	244.8
Lesotho	995	0.56	-283	-0.17	-32.2
Namibia	3,390	1.79	803	0.49	66.7
South Africa	342,947	7.79	154,264	3.82	134.8
Swaziland	2,103	2.01	1,095	1.16	140.1
Western Africa	902,564	3.99	409,687	2.06	111.5
Benin	13,669	2.20	4,069	0.75	80.8
Burkina Faso	6,237	0.52	3,246	0.31	102.9
Cape Verde	83,291	191.03	14,131	36.00	35.8
Cote d'Ivoire	58,843	3.72	22,509	1.59	133.6
Gambia	20,923	15.95	12,070	10.74	206.8
Ghana	150,665	7.69	81,315	4.66	101.0
Guinea	19,684	2.43	7,098	1.00	102.7
Guinea-Bissau	29,449	21.54	7,716	6.48	258.5
Liberia	41,756	14.19	24,818	9.77	229.4
Mali	45,034	3.78	10,891	1.04	44.6
Mauritania	14,813	5.60	6,842	2.93	141.9
Niger	4,948	0.46	535	0.06	34.0
Nigeria	247,497	131,443	2.16	1.31	133.5
Saint Helena	2,460	492.00			
Senegal	104,715	11.15	46,189	5.52	96.6
Sierra Lean	40,556	9.19	25,043	5.91	233.6
Togo	18,024	3.95	11,773	2.94	148.7
Sub-Saharan Africa	2,786,580	4,48	962,974	1.75	78.7

Sources: Dumont & Lemaître 120041; Docquier & Marfonk (2005).

Table A.4. *Number of Highly Skilled Expatriates in Latin and Africa*

Total Number of Highly Skilled Expatriates in Latin America and Africa						
Latin America			Africa			
Country	Total % of Number Highly Expatriates Skillet	Number of highly skilled immigrants	Country	Total Number of Expatriaites	% of Highly skillet	Number of highly skilled immigrants
Jamaica	796 046 24.0	191 051	South Africa	342 947	47.9	164 272
Colombia	682 156 25.7	171 221	Nigeria	247 497	55.1	136 371
Brazil	351 878 31.7	111 545	Kenya	197 445	37.4	73 844
Peru	361 506 30.2	109 175	Ghana	150 665	34.0	51 226
Argentina	266 070 37.8	100 574	Congo	100 052	36.6	36 619
Haiti	466 897 19.8	92 446	Ethiopia	113 838	31.2	35 517
Trinida and	276 934 29.5	81 696	Zimbabwe	77 345	43.3	33 490
Tobago	200 461 40.2	80 585	Uganda	82 232	39.2	32 235
Venezuela	305 544 24.9	76 080	Tanzania	70 006	41.0	28 702
Guyana	490 267 15.4	75 501	Madagascar	75 954	32.0	24 305
Ecuador	200 366 33.0	66 121	Mauritius	86 410	28.0	24 195
Chile	839 511 7.8	65 482	Senegal	104 715	23.1	24 189
El Salvador	140 631 32.6	45 846	Cameroon	57 050	42.3	24 132
Panama	224 531 17.9	40 191	Mozambique	85 337	26.5	22 614
Nicaragua	489 772 8.2	40 161				

Table A.5. *Remittance flows to Developing countries ($Billions)*

	1990	1995	2000	2001	2002	2003	2004	2005	2006	2007	2006-07
World	69	102	129	143	170	206	234	266	303	337	11%
Developing countrie s	31	57	82	92	115	143	163	194	226	251	11%
Lower middle income	18	36	47	51	71	89	95	110	127	140	10%
Upper middle income	6	36	13	17	30	38	48	60	70	78	11%
Lowincome	8	9	22	24	15	17	20	24	29	33	15%
Latin America and the Caribbean	6	13	20	24	28	35	42	48	57	61	6%
South Asia	6	10	16	16	24	30	29	33	40	44	11%
East Asia and the Pacific	3	10	17	20	29	35	39	47	53	59	11%
Middle -East and North Africa	12	13	14	15	15	20	23	24	27	29	8%
Europe and Central Asia	3	8	11	11	14	16	23	32	39	47	22%
Sub- SaharanAfrica	2	3	5	5	5	6	8	10	11	12	7%

Source: Word bank staff Estimates on IMF BoP Yearbook 2004/2008 and country desks

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2 The problems of Africa's industrialization substitution strategy and reformation needs

Introduction

Industrialisation, conceived as the multiplication of industrial activities and as the transformation process of production using machines is at the heart of all economic development. To a developing country, industrialisation signifies not only a means of simply increasing income and the volume of production but of modernising the primitive production structure and transform all the socio-economic traditions associated with it (Onudi, 2004).

At the eve of independence in the 1960s the strategy of industrialisation was at the centre of economic planning of African countries. Its primary objective was to secure national economic autonomy through the creation of an industrial capacity that substitutes imports and transformation for export of agricultural and mining products out of the continent. This strategy progressively showed its limits as from the 1970s leading to its being put into question as from the 1980s. Today the problem of industrialisation of Africa is raised in a very different context of globalisation of economies, rapid technological changes, and the policy of disengagement of the state in economic activity and consequently calls for a redefinition that can be formulated as: How can the competitiveness of African firms be reinforced in a world of fierce international competition?

The objective of this study is to show that the industrialisation strategy of substitution of imports adopted so far by African countries has not been fruitful and the present context that is characterised by the generalisation of market conditions worldwide requires rectification and the redefinition of a new problem of industrialisation of these countries with the objective of raising the level of external competition of the continent.

The second section of the study presents the traditional paradigm of import substitution industrialisation (ISI) and its unfitness for Africa. The third section presents the basis of a new African industrialisation adopted from ambient neoclassic and equally raises the constraints that have to be taken into consideration during its implementation. In the fourth section we draw conclusion.

The traditional paradigm of ISI in Africa and its redefinition

Nowadays the ISI model remains a solution to the problems of industrialisation in Africa. This model proposed by (Prebisch, 1950) in collaboration with C. Furtado of the CEPAL (Economic commission for Latin America, 1948) has influenced the industrialisation policy of all developing countries after the Second World War. The apparently charming idea did not meet up with expectations of African countries. In other ton study the causes of this failure we will first analyse the means used by the ISI model and then show

how this model has given illusions then disillusions to African countries.

The resources of the ISI model

The ISI model is based on the following question. Why not initially give privilege to local industrial activities with an existing internal demand (as indicated by imports)? In order to put in place these activities the ISI uses as major resources (Neme, 1991): factory tariffs, multiple exchange rates and the creation of external activities.

Factories tariffs

The high custom duties on finished products and the low duties on inputs favours the entry of the spare part assembling industry because of the consumption effect and the high level of effective protection. Thus the automobile industry was implanted in Nigeria, Morocco, Egypt and South Africa.

The multiple exchange rates

Multiple exchange rates involves the application of different rates according to the nature of the imports (for example an official high rate to maintain the prices of indispensible imports and a free rate to depreciate, discourage the importation of luxury products) or according to the foreign currencies (a less depreciated rate for country with which imports want to be encouraged and another rate with the rest of the world). Multiple exchange rates have the same effect as a contingency. They bare much easier to implement than custom duties and contingents since they do not require a competent and incorruptible administration which is difficult to find in developing countries.

The creation of external economies of scale

Those who give priority to industrialisation support the game of economies of scale and external economies. Thus (Hirschman, 1964) distinguishestwo types of investment:

- those which concern direct production activities (DPA) which are chosen on the basis of their economic profitability;
- those concerned with economic and social infrastructure

(ESI) that promotes development by creating an appropriate environment for productive investment

The criteria used in choosing between the two types of investments is that of social marginal productivity: the investment funds have to be shared between direct production activities (DPA) and economic and social infrastructure (ESI) so as to maximise usage and value added at the least cost. A sector economic and dynamic reasoning requires that emphasis should be made on their complementary nature. If investment resources are scarce, investments should be focused on projects with strong indicator effects and for pivot industries. That is, young and dynamic entities that distribute high incomes thus inducing complementary exchange activities, financing or incomes having the possibility of selling at competitive prices. If one admits that investments carried out in the order A and B do not have the same effects as investments carried out in the order of B and A. Thus the determination of the sequence of investments will be a major problem. The concentration of investment efforts can equally be spatial around growth poles.

The input-output matrix has potentially powerful vertical inter-sector relations. Initially, we will have sector supplying inputs to order sectors (basic chemicals, petrochemicals, industrial mechanics, non iron metals,). Then later we find sectors supplying goods for final consumption; these goods are generally small in size less capital intensive.

Three types of effects result from the vertical inter sector liaison

- the ex-ant liaison effects which are the results of an additional demand emanating from consumption
- the post-ant liaison effects that emanate from the capacity of the production capacity of inputs and with the advent of an opening. When for example a basic product becomes available (fertiliser for example), then potential users will be incited to buy the goods, this will have as consequence an increase in future production and productivity. The automatic nature of such an effect is less evident than the previous. It is not enough for the basic product to exist nor effectively available at a compatible price and that is its utilisation justified by an increase in final opportunities.
- the boomerang and increase in commodities. If the bottom liaison effects occur that leads to an increase in the demand of sector from bottom to the top (liaison effect towards the top) and vice versa. Thus, a chain or spiral process that plays in an interactive manner.

In virtue of this approach one can say that growth can only take place through a series of successive disequilibrium in the evolution of the different sectors.

In the context of Africa especially, the putting in place of a strategy based on the ISI model has lead to less hope.

The illusions and disillusions of ISI in Africa

History gives an account of the application of ISI in Africa Characterised by the Euphoria of the 1960s and the hopelessness of the 1970s, 1980s and 1990s.

The enchantment: The 1960s

The 1960s was characterised by the permanent intervention of the state in the industrialisation process. Threethemesprevailedthen (Jacquemot, & Raffinot, 1993):

- the delays and the handicaps were such that one could engage in the path of industrialisation only with conscious, massive and directed efforts

- the putting in place of great technological projects as a vector of independence was prioritised
- the concentrations around some geographical poles of growth which are vectors of growth in an open economy constitute a choice of national sovereignty

The instrument of political choice was the nationalisation of strategic units, sector and global planning and the organisation of the banking system to serve industries. In the presence of anaemia of private investments and the need to mobilise production and economise foreign currencies around which the poles of growth (from the top the primary industries: cement, electricity, chemicals; from the bottom industries that valorise of products for exports and the local market). The extension of the public sector was considered as the essential angel of economic policy.

As concerns the growth rate, the African industry behaved well at the beginning progressing from 10% between 1965 and 1973 (World Bank, 1993). The initial industrial base was restricted and the first set of import substitution based on foreign assistance and returns from exports was vigorous.

The disenchantment: the 1970s, 1980s and 1990s

At the beginning of the 1970s, the large inappropriate investments were denounced and the cathedrals in the desert (Judet, 1980). The hope placed in the large industry just as in industrial poles was deceptive. Whether bit was the chemical factories or mechanical assemblies, these achievements did not succeed in proving their capacity to stimulate growth. The inefficiency of the African industry seems to increase with the intensity of the requirements needed to put in place installations. At the same time, it was demonstrated that it is not enough to replace imported goods by locally produced goods so as to guarantee economic independence and technical efficiency. In fact, industries of substitution have remained based on the importation of inputs, spare parts and equipment and this situation has persisted (Prebisch, 1950). The relation with the local economy remained limited to raw material whereas spare parts and intermediary goods, counselling and technical services such as technologies have continued to be imported. When the prices of commodities decreased, economic rents fell and the cost of energy increased, the vulnerability of the strategy was very cruel.

-The 1980s were declared decade of industrial development of Africa by the ONUDI and CEA[21]. The results of the first part of the 1980s remained important for Cameroon (8.5% annual growth between 1980 and 1987). (9.7%), Ivory Coast (8.2%) and Mauritius (10.9%). We can equally add to this list Kenya and Zimbabwe who succeeded in maintaining a positive flow of foreign investments and who have a strongly diversifies industry today (the food, chemical, textile, petroleum industry ….). Dominated by the presence of some large firms, former Rhodesia can presently manufacture about 6000 industrial products at competitive costs.

However, following the dependence on imported inputs because of the small scale of the production units, their inadaptability to technological evolution and the markets and an inconsiderate debt policy, the industrial sector progressed all most everywhere later on. After three decades of attempt of industrialisation, the situation is painful: most production units remain isolated from the international market, they have high costs of return and productivity remains low. The lack of maintenance and spare parts lead to

[1] The United Nations organization for Africa and the United Nations Economic Commission for Africa: a program for the industrial development decade of Africa New York UNO 1983. An evaluation of this program was done during the conference of African ministers of industry at Harare in May 1989 that declared the second industrial development decade of Africa

the degradation of installations in addition to contraction in internal demand, fall in incomes and the stabilisation measures. This led to deindustrialisation in many countries characterised by a fall in the production index. Averagely in sub-Sahara Africa the proportion of industry in the GDP moved from 18% in 1965 to 33% in 1980 and fell back to 28% in 1987 (World Bank, 1993). Among the most affected countries we have Benin, Ghana, Liberia, Madagascar, Mozambique, Tanzania, Togo and Zaire.

In some countries, the capacity of industrial production used fell below 30%[2]. The unfavourable trend of 1980 reveal the vulnerability of the industrial system: there was therefore a deindustrialisation of economies in a context of reduction in protectionism, privatisation, economic liberalisation and fall in demand (Hugom, 1999). This contributed to feed criticisms on the dysfunction of the ISI model in Africa.

In the 1990s, just like in the last two decades the ISI model was a source of structural stagnation related to the absence of competition (oligopolies or monopolies) and a profitability based on rents (and not profits). If one considers the low jobs created, the existence of a low production capacity, the model led to a stagflation caricature (Onudi, 1991).

The industrial dysfunction

At least four factors can explain the dysfunction of industrial policy in Africa (Hugom, 1999): the choices of economic policy, organisational and management problems; macroeconomic factors and the international environment.

[2]The rate of utilization of industrial production is not well known. The institute of enterprise (for a real partnership with Africa balance sheet and perspectives of the African industry, Paris 1989). In a study of 343 industrial complexes in Africa for 20 years reveals that 274 of them were no longer functioning (79 cases) or functioning poorly whereas only about 60 of the production units use their full capacity.

- *the choice of economicpolicy*

The African industry is most often poorly located lowly scaled and use of poor technology. The high effective protection of industries (+50%), the real interest rates that have been positive for a long time, the under evaluation of exchange rates and regional policies are signs of a voluntarism industrialisation that is conceived beyond the criteria of profitability, efficiency and competition. Socio-political rationality dominated the criteria of financial and economic profitability. The poor economic location is explained by the criteria of regional equilibrium. The large scale and the under capitalisation are related to the modalities of financing and the rents received by politicians. The duplication of industrial projects results from the opportunism of states.

- *Organisational and management problem*

The appreciation of the gains dominates the creation of value; there is generally over investment and poor investment, lack of equity capital by enterprises and over indebtedness. Competencies are poorly used and there is not always a relation between salaries and productivity.

The evaluation of the support system to the industry has put into evidence a complexity and a disorder in the mechanisms of subvention and production: contradictory or unstable intervention, negative protection of some sectors, the perverse effect of a step wise protection on the national production of inputs, the absence of coordination in the organisation of a sector. Criticisms have enabled to put into evidence the fact that the affirmed objective in the development plan (especially national or regional integration) gave way to other less explicit but powerful objectives.

As such (Coussy, 1992) estimates that the model of development based on protection, subvention and taxation seemed to be a subject of demystification indicating that the objective of accumulation could hid an objective of creation of enterprises and that the mentioning of the need for protection could cover up inefficiency and a distributive economy. The incoherence of industrial and trade policies that do not only result in instrumental difficulties but also to multiple objectives assigned to it, circumstantial, social, political and categorical objectives.

- *the macroeconomicfactors*

Among the macroeconomic factors, the most important one is the narrow national market (Norro, 1998). This narrowness has been an essential factor of the failure of the ISI policy in Africa. Today it is still a major obstacle to the putting in place of an ambitious industrial project in Africa.

The size of the internal market depends on demand (that is the only solvable needs) and is narrowly related to the volume of GDP. The absolute value of the GDP being particularly low in African countries, they constitute except for rare exceptions insufficient markets for the profitability of industrial activity. It should be added that in some African countries administrative or official measure (illicit trap) and poor infrastructure still contribute to the segmentation of the internal market (Girl, 1986).

Creating an industry only for the local market appears to be suicidal or a very risky game that has very low chances to be won.

But there is more. It is not enough for the internal market to quantitatively absorb the production of the new industry for its functioning to be economically justified. The investments equally have to be profitable for the country and more than any competitive allocation of national resources. If it is not the case, there is wastage of resources. Thus, examples of poor industrial investment are very rampant. The gives an example that gives a caricature illustration, the poor tendencies that are found in several industrial projects in recent years; it is the Morogoro Shoes Company a state firm created in 1980 in Tanzania.

This company had to be one of the large producers of shoes in the world and export more than 80% of its products. But the factory was poorly conceived and constructed. Problem multiplies at the beginning; the capacity utilisation did not reach 4% on average. It did not export even one pair of shoes. The management of the company was not up to the task, the product was poorly conceived and quality control was inexistent. The value added of production is negative with respect to the world price. In the middle of the 1980s, its cost was half a million dollars per year to the economy to maintain the company operational without counting the interest and principal to be repaid out of the 40 million dollars of investment.

- *the international environment*

Today, the African industrial sector is impoverished more than ever before. It is even on a decline for some years now as indicated by the remark made on July 200 by ONUDI in its report on the state and perspectives of industrialisation in Africa; Onudi presents the state of the last twenty years (1980-2000).The measure of the added value of industries which take into account the transformation of local or imported raw materials; between 1980 and 2000, the share of sub-Saharan Africa reduced moving from 1% of the world total to 0.8%. During the same period the other regions of the world increased their share more or less strongly; from 1.5% to 2.4% for north Africa, from 0.8% to 1.8% for south Asia and most especially from 41% to 13.9% for east Asia. These figures take all transformation activities into consideration including those that are related to raw materials. In the whole of Africa the industrial added value represents 200 billion dollars in 2000 as against 95 billion in 1980. During the same time period, East Asia multiplied its contribution by five (from (154 billion to 863 billion dollars).

The international environment that has become very unstable is somehow characterised by the steady increase in new competitor, most often Asians and by the monetisation of relations. In this sense policies of reduction in protectionism and contraband have usually led to the declassification of the industrial apparatus. The exchange adjustments did not take place given the high proportion of factors of production paid in foreign currency and the outcomes from external competition. It is seen for example that despite the devaluation of January 1994, the African countries of the Franc zone have not recovered their external competitiveness. The proportion of external trade of the entire continent in world trade moved from 20% in 1960 to less than 2% today, indicating the moribund and regressive nature of the African economy and the very low international competitiveness of its firms.

It is therefore necessary in the context of fierce international competition, the globalisation of economies to define a new approach to industrialisation that one can consider to be modern. This approach being the rupture with the tradition model of ISI.

The modern approach of industrialization of Africa and its constraints

Drawing lessons from their unfortunate industrial experience, African countries have to go for a modern reorientation of their industrialisation which involves the reinforcement of the competition of their firms in a context of globalisation of economies and fierce international competition. Efforts could be made to increase both the supply and demand of their manufactured products. But these efforts have to consider the constraints related to the markets for these products.

Efforts on the supply and demand of manufactured products

On the supply side the problem is technical which on the demand side the economic aspect dominates.

Supply

The supply conditions refer to five elements: the mastery of technology, the organisation of production, competition, foreign direct investment (FDI) and the protection of infant industries.

- *Technical progress; the importance of new technology*

Is it possible for African countries to know future profitable activities in the present context of evolving world market? Should industrial policy be limited to flexible actions of incubation that give greater role to enterprises in the choice of technological innovation?

New technologies lead to radically new productive combinations and are sources of productive gains. They require an improvement in the quality of labour.

The major technological changes of the last decades concern several domains, for example new materials, new energies, information technologies (computer science, robotics and telecommunications), natural sciences and biotechnologies, the agro-industry and the valorisation of the oceans and space. All these new technologies have common characteristics.

- They have a high dose of research-development;
- They integrate programming, modelling and control processes;
- They associate the language of the computer in the collection and treatment of information;
- They put in place communication mechanisms that enable to transmit information fast and as far as possible.

At the heart of the question of technological appropriation is the notion of scientific potential and national technique (SPNT) (Jacquemot, & Raffinot, 1993). It is defined by its components: number and equipment of research centres, the qualifications of researchers, the aptitude of local firms to put in place the new technologies. A SPNT is qualified as complete or autonomous if it integrates four activities: fundamental and applied research, research and development, production and trading. The African countries except South Africa have at least one 'imitator' SPNT , that is a partial capacity of fundamental and applied research, of research and development, of production and trading and most often from a 'user' SPNT to an 'autonomous' SPNT. This is possible due to the implementation of a strategic industrial policy by the public authorities in the light 0of the new theory protectionist theory of that required the public authorities to finance fundamental and applied research on one hand and on the other hand to subsidise the research and development of local firms enabling them to have low unit costs of production than those of foreign competitors and be competitive on the international market.

- *Organisation: industrialeconomy*

Enterprises are actors of industrialisation. They should be conceived as adaptive units: they find their viability in the face of multiple constraints; they can only be sensitive to information and assistance from the state that will reduce the obstacles encountered in their effort of adaptation.

Industrial economics as a method of analysis gives useful indications on the problems of organisation of the sector. It considers the departure point of the firm to be its internal organisation, its objectives, and its supply and demand constraints to see how it can take advantage of growth opportunities.

Then it positions the state that represents the interest of the community and which can intervene to help as a regulator, General interest requires some performance from the enterprise and greater efficiency at the level of production, on technology, the usage and allocation of national resources. If this ideal of efficiency is not attained it is because there are distortions that have to be localised and supress at the level of behaviour and structures.

- *Competition: the reference on the international market*

Until recently, the quest for competitiveness seemed to concern only countries engaged in the trade war and spare African countries. Meanwhile once the products of local origin are under competition in the internal market or in the foreign market the question of competition is raised. With the opening of the borders, competition has henceforth become an essential element in the evaluation of the production system; Refusing to involve in such a competitive relation will mean closing oneself in an autarcique regressive world.

- *Foreign direct investments (FDI)*

The FDI via multinational companies currently still remain the major vector of propagation of technology. This is done via several channels: the sales of capital goods, the sales pf patent, licensing agreements, the sales of key units in hand, wholly owned subsidiaries or technical assistance. The equation to be solved is that which enables African countries to best capture the national interest of this imported technology. One can for example think of the cloning of foreign manufactured products with the help of this imported technology.

- *The protection of infant industries*

The theory of infant industries is based on the idea that protection is justified when a new industry with strong economies of scale potential has an induction effect on the other sectors. These virtual advantages have to be taken into consideration in the dynamic of the sectors of the national economy. They will be translated later on into a fall in the marginal cost of the industry which is beneficial to everyone. Thus, the initial excessive cost have to be borne by the community in the future, either in the form of subvention or in the form of custom duties until when the unit marginal cost will fall to the level of the social marginal cost. (end of subvention), or the international reference price. The system of industrial incentive by educative protectionism therefore finds their theoretical legitimacy. In fact, the debate concerns the efficiency of custom duties (Kindleberger, & Lindert, 1978). Custom duties lead to distortion in the income distribution. Under the assumption of good usage of gains their justification is based on two elements: protection is transitory, it enables to increase production until it becomes useless. It also gives way for the collection of taxes to be used for development.

Demand

Despite the efforts on supply, it does not change the fact that most internal African markets remain narrow for significant industrialisation. But the existence of sufficient demand is a necessary condition for profitability. Consequently, it is imperative to anticipate alternatives to national demand for new industrial productions today.

Two ways of expanding the market are possible:

- regional economic integration that enables to extend the internal market to the market of neighbouring countries:
- the export of manufactured products to the world market where there is potential demand as long as the products are competitive
- *Regionalintegration*

The economic integration of African countries is one of the major recommendations of the Lagos plan of action (1980). According to African countries, it is within an expected objective of autonomy (self reliance) and it is a necessary condition for its realisation.

However, it appears more like an idea and a program of action. Nothing is really mentioned on the modalities of realisation neither on the ways of preventing previous failures.

It is therefore not surprising that the calendar of liberalisation of exchanges was not respected. In 1985, the African heads of states decided in Addis Ababa to apply what they adopted in 1980. And in 1991 in Abuja (Nigeria), 49 governments signed a new treaty creating an African economic community (AEC) with its realisation scheduled for 2035. What are the chances of realisation?

According to (Norro, 1998) an economic integration is efficient when it possesses a dose of political integration. This signifies: obligatory arbitrage between national interest to the benefit of the interest of the community and central impulsion. As long as each important decision requires the unanimous and irrevocable accords of all participating states, failure is practically unavoidable. In other words, the putting in place of a supranational organ and in parallel reinforcing the myth of a national sovereignty without any limit are preliminaries to a real regional economic integration[3]. But as indicated by (MukokoMbonjo, 2000) on the regional integration of West Africa, the prevalent strategic preoccupation has been to achieve integration than using it to establish and/or reinforce state reconstructions.

But the absence of a real political will is not the only reason that explains the attempted failure of African economic integration. The poor conception of what the process is has also been responsible for the failure. According to the contemporary economic view, African

[3]The AEC recognizing this exigency'' One major reason for the present inadequacy has been the failure of African countries to realize that multinational economic corporation and integration is an absolute imperative, and this has in turn led to a lack of political will to support the creation and sustenance of regional and sub-regional corporation. ECA and Africa's development 1983-2008, pp. 14-15 cited by J. Ravenhill (Ed), Africa in economic crisis, London, Mac Millan 1986. P.100

politician see more of reduction of custom duties in the process.

According to this conception, the logic of integration movements is essentially a negative logic[4]. This involves the elimination of all the artificial obstacles that hinder market forces. And even the rate measures of harmonisation and integration said to be positive have a minor function of promoting common policy than eliminating the disparities that distort competition.

In reality, the problem of economic integration of African countries has to be approached in a different way. They have to seek sufficient demand so as to make the new industrial activities profitable. Consequently what is essential in a regional agreement is that the new products of each country should have access to a vast market when launched.

Integration has to first be conceived as the coordination of development, the liberalisation of movements of goods that come as support. In this perspective, regional integration can at the beginning be limited to some sector (for example the rehabilitation of stream basins and road networks, the coordination of maritime or air transport, refining of petrol, heavy chemical industry, etc). However, the quest for efficiency has to lead to some coordination of macroeconomic policy (African Development Bank, 1993).

It has to imperatively lead to a global equilibrium distribution of the advantages among the participating states.

[4] According to (Norro, 1998), this conception of economic integration is in the light of the classic and the neoclassic theory of international trade. Therefore the specificity of the nation is in the default of mobility (Natural and artificial) of factors of production. This default of mobility leads to the splitting of the punctual market of the general theory and reduces economic efficiency (in a characteristic manner, Bariat said in the 19th century that custom duties was an anti rial way). In this light the policy of free exchange that is aimed at eliminating all artificial trade obstacles will be the royal path to better efficiency.

However, it will succeed only if industrial development is competitive and cannot be a means of escaping from the constraints of the world market.

- *the export industry*

The exchange structure of developing countries was modified significantly and this modification is a major economic event for the world market where funds are redistributed as well as for countries which can get important benefits.

But in this movement of funds, African countries have remained behind (Harrold, 1995) estimate that manufactured products (especially chemical products, machines and transport equipment) are about 50% of exports of developing countries in general whereas their share in African trade is less than 20%. In many countries, it is not up to 10% and Ile Maurice is the only African country that has more than the average of developing countries with 68.1%.

Why this difference in evolution? Will it be better for African countries to redeploy their efforts? If yes then how can this are done?

One of the advantages to African countries for exporting their manufactured products is because the world market offers a pre-existing demand. Thus, these countries find mutatis mutandis for new industrial products. A situation that is similar to what they experienced before for their primary products and escape from the constraints of a narrow internal market.

To have access to the world market, producers have to be competitive with respect to existing suppliers in the logic of the market economy. To African countries it is necessary to gain from the specific advantages in conformity to the traditional theory scheme: available natural resources, but also and especially man hours.

Nevertheless, the real world is not that of theory and access to the world market has a lot of barriers related to the structure of industrial production, the organisation of markets, to pressure groups which are the present producers of importing countries (professional associations and trade unions), The example of the new industrialised countries always shows that these obstacles are not insurmountable.

Moreover this access to the world market enables the new industry to attain a scale that is similar to break even. If as we have seen, the low internal demand is one of the major factors that slow the progress of new industrial activities, openness to the world market appears as a means to escape from this constraint.

The constraints related to the efforts of modernisation of the African industry

The constraints of the industrial development of Africa will also focus on the foreign supply and demand of African manufactured products.

The constraints related to supply

It has been highlighted that the present techniques elaborated for developing countries could be inadequate for African countries. Under these conditions, it is expected that these countries to put in more efforts so as to better use local factors and consider the most urgent needs.

But we should be careful with slogans and hasty conclusions and recall that the cost of an adaptation is not negligible. In other words, the advantages that African countries will get from adaptation will be compared to the costs of their implementation. Moreover, as indicated by (Arghiri, 1992), we should avoid to ''adjusting technology to the parameters of under development instead of modifying the parameters according to the existing technological possibilities' if not they may find themselves with under developed technology.

However, it would be very dangerous under the pretext of arrive late in the industrial universe for African countries to be content to copy old technology that is out-dated. Africa has to rapidly become part of the contemporary technological evolution and especially in the development of new and emerging technologies (information technology, micro-electronics, biotechnology).

The absence of Africa in this technological evolution will lead to its marginalisation and dangerous consequences for the future. Thus, giving up its competitive advantage to the benefit of more dynamic competitors.

The constraints related to demand

There are at least three of them. First regional economic integration and the export of manufactured products have often been presented as antinomy, the first being analysed as a decouple policy that correspond to an auto centred type of development, in disconnection with the world market whereas the second consist of a new modulation of traditional subjugation of economies to this market.

Then in the traces of integration African countries wanted to start with what was considered as the beginning that is say the liberalisation of exchanges. But, what can we expect fro the liberalisation of exchanges when it is done between countries that trade essentially not among them but with the rest of the world?

Finally stimulating the export industry does not mean the complete absence of protectionist measures. It signifies the moderation of these measures. But a protectionist measure has two faces. If it favours some sectors, then it does so unavoidably to the detriment of others. Among the later we have unprotected or less protected sectors that rely on the internal market: the protectionist measures reduce the real income of consumers and at the same time the demand for product and increase the prices of their inputs and consequently their production cost.

Conclusion

The objective of this study was to show that the ISI strategy that is still applied in Africa nowadays is nor beneficial and the industrialisation of the continent has to be redefined so as to adopt it to the present world context of liberalisation. In fact, towards the end of the 1980s, the theoretical design of the ISI that formed the basis of assurance of development in Africa collapsed. ISI was criticised for the following disadvantages: it has neither reduced the importations of Africa but has only modified the structure nor made the production of the continent competitive, nor created a real industrial base; it has instead exacerbated the social tensions and has lead to a vast movement of deindustrialisation.

Today, Africa needs a modern industrialisation policy that should reflect at least five fundamental elements; an appropriation of technology, (SPNT autonomy), the protection of infant industries, an external competition of prices and products, a rational organisation of production, the cloning of imported manufactured products.

But this new industrialisation of Africa has to take national (size of the market, number of factories) and international (constant evolution of technology) environmental constraints into consideration.

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3 What strategies for the sustainable management of public debts in Sub-Saharan Africa?

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 (Avramovic, 1964).

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 (World Bank, 2004): 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 (Crozet, & Alli, 2001).

In a context of low valorization of raw materials and high interest rates, most countries in sub-Saharan Africa have become insolvent debtors (Hugon, 1999). 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[1]. 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), (Hugon, 1999). 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.

The theoretical approach to sustainable public debt

In their studies on the indicators of vulnerabilities, the economists (Harrod, 1939; Domar, 1944; Sato, 1964; Sato, 1964b; Tuna, 1998; Daseking, 2002 and Northover, 2003) try to find out the level of indebtedness that is sustainable for an economy and at what level it becomes excessive. External borrowings can help countries accelerate their growth by funding productive investments. But if a government

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

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.

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 (Garnier, 1990; Jacquemot & Raffinot, 1993):

$$B_t = D_t + B_{t-1} \tag{1}$$
$$D_t = DP_t + rB_{t-1} \tag{2}$$
Since $DP_t = T_t - G_t < 0$ then
$$D_t = T_t - G_t + rB_{t-1} \tag{3}$$

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

$\mathrm{T_t}$ = Taxesfor 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 choses 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:

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

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. (Domar, 1946) 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 (Domar, 1946), 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 (Raffinot, 1992) 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 (van Ewijk, 1991).

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 centeredon 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.

$$Y = (¥A(t)/b,\alpha) - 1 \quad (6)$$

Dittus (1989) 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 Buchanan (1958) and Barro (1984) 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 (Weber, 1997).

(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 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) Bucanan (1958) 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 Barro (1984). 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.

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 (Raffinot, 1992). 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.

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, and on the other hand the conditions of economic solvency of the economy (Avramovic, *et al.*, 1964).

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 (Laffargue, 1987). 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[2]: the debt can remain sustainable as long as the debtor rate of interest is less than the exports growth rate.

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 (Cohen, 1986), tried to study the question by considering two periods. The first period is for the debt and the second for reimbursement.

[2] Former BrazilianMinister of Finance

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.

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 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 (Melceky, 2010; Miller, 1997, Afsin & Goktug, 2014; Henning, 2010). Krugman & Obstfeld (2003) 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.

The specific nature of the external dept 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 World Bank (2004) 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.

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.

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.

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%.

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.

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 (Zacharie & Avermaete, 2002). 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 Britishrates. 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 (Zacharie & Avermaete, 2002).

Macroeconomic determinants

The relation between the degree of indebtedness and some economic variables has been an interesting subject of economic research. Thus, Ojo (1989) 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:

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

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.

Administrative deficiencies

One of the reasons for the appetite for indebtedness contracted in the 1970s and 1980sin sub-Sahara Africa is internal (Raffinot, 1992). 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.

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.

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%).

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.

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.

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 (World Bank, 2002; 2004; 2000; 1995) 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 (Daseking, 2002), 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.

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.

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.

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 (Weber, 1997) 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.

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 Northover (2003), 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 Northover (2003), 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.

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 (Raffinot, 1992). 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).

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4 How to improve governance in Sub-Saharan Africa?

Introduction

Although it is difficult to specify, the concept of governance is used according to two approaches. The first one which is considered as technical and static refers primarily to the administration of State structures and institutions (World Bank, 1989, 1994, 2000). The second approach involves actors other than the State. Governance is seen as the conduct of the State and society towards the achievement of societal objectives (Adejumodi, 2002; Pierre & Guy, 2000; Hyden, 1999). An attempt to synthesize these two approaches can be found in Kaufman *et al.,* (2000), Kaufmann (2003) where governance refers to the traditions and institutions through which authority is exercised in a country. This would include: the process by which rulers are chosen, made accountable, controlled and replaced; the ability of governments to manage resources effectively and to formulate and enforce sound policies and regulations; respect for the institutions governing the economic and social interactions between citizens and the State.

There are three main actors in the governance arena: the State, the civil society, and the private sector. The notion of governance is underpinned by a philosophical conception of a social pact between the State and society through which they interactively define national objectives and negotiate the process to achieve them by working collectively, although there may be some tensions and contradictions in the achievement of these objectives (Adejumobi, 2006). The problem, according to Adejumobi (2006) is that of how the national capacity is improved in a free and democratic environment in the best interest of society.

All over the world, countries are working to develop their economies and thereby improve the living standards of their populations. This task is particularly hard in Sub-Saharan Africa (SSA) which has experienced economic decline, growing unemployment, deterioration of basic infrastructure, worsening social inequalities and growing poverty in recent decades. Indeed, 44% of the population of SSA, i.e. approximately 300 million people, lived on less than one US dollar per day in 2002 (UNSG, 2006); the national income per capita is 746 USD in SSA as compared to 37 600 USD in the United Kingdom for example (World Development Indicators (WDI, 2007); life expectancy at birth is 47 years in SSA compared to 79 years in the United Kingdom (WDI, 2007); one fifth of children (20%) die before the age of five compared to 0.6% in the UK (World Bank, 2005); 56% of the population has access to drinking water compared to 100% in the UK (WDI, 2007).

This situation is mainly due to what is often called bad or rather failing governance: no real rule of law, inadequate protection of property rights, rampant corruption and biased decision-making serving vested interests.

Starting from the commonly accepted assumption that there is a strong correlation between good governance and development objectives (Kaufman *et al.*, 2000, Bourguignon & Sundberg, 2007), the purpose of the paper is on the one hand, to explain the failure of governance in SSA, and on the other hand, to explore ways to improve this governance. The rest of the paper is organized according to the following sequence. First, we shall try to identify and examine the determinants of governance failure in SSA (II). Next, we shall discuss the governance reforms necessary to achieve the development objectives in SSA (III) and then we shall point out some limitations of these reforms as well as the factors blocking them (IV). Finally, we shall conclude (V).

Determinant of governance failure in Sub-Saharan Africa

Good governance consists in allocating and managing resources to respond to collective problems; it is characterized by the principles of participation, transparency, accountability, rule of law, efficiency, equity and strategic vision.

In the field, these principles can be experienced through tangible facts such as free and fair elections at regular intervals, a MPs who actually propose, enact laws and exercise control; and an independent judiciary that interprets laws. These principles are also reflected in the respect of human rights, the rule of law as well as the guarantee of transparent and accountable institutions. "Good" or "democratic" governance also exists where government authorities rely on the will of the people and are accountable to them. It exists where transparent and democratic institutions allow full participation in political affairs and where the protection of human rights guarantees free expression, association and contestation. Finally, it exists where the government and its institutions defend the poor and the weakest and promote the human development of all citizens. The present and past realities of SSA show that apart from a few rare exceptions (for example Botswana, Mauritius, Namibia, South Africa), these principles are far from being respected. Indeed, in this part of the world described by the World Bank (2000, 2003) as the poorest among the poor, we can note the following here and there: non-respect for property rights and basic democratic rules, systemic corruption, arbitrary practices, the wasting and plundering of scarce national financial resources for private interests.

Three essential factors seem to explain the failure of governance in SSA: dysfunctional institutions, corruption, and the absence of a real democracy.

Dysfunctional institutions

The term institution is defined in different ways. North (1990) makes it a very broad concept designating the formal and informal rules that govern human interactions. Narrow definitions focus on specific organizations, procedures or regulations. At an intermediate level, institutions are defined with reference to the protection of property rights, the fair application of laws and regulations, and corruption. This meaning is narrower than that of North (1990) which includes as mentioned above all the standards governing human interactions. In general, relatively recent research on the determinants of development uses this intermediate definition (Acemoglu, 2003; Acemoglu *et al.,* 2001; Rodrik & Subramaniani 2003; Rodrik *et al.,* 2002; Easterly & Evine, 2002; Edison, 2003).

Good institutions have three characteristics (Acemoglu, 2003): by guaranteeing the respect of property rights to a large part of the population, they encourage in a wide range of individuals to invest and participate in economic life; by limiting the action of elites, politicians and other powerful groups, they prevent them from appropriating the income or investments of others or from distorting the rules of the game; and by promoting equal opportunities for large sections of society, they encourage investment, especially in human capital, and participation in economic production. Past and present experience shows in many countries, especially in SSA that these conditions are far from being respected, in particular a patrimonial and neo-patrimonial management of the State (the very embodiment of institutions), and a "weak" State prevails there.

Patrimonial state

Traditional power in Africa is fundamentally patriarchal in nature; it is based on kinship and is exercised by the elder over his immediate group, the lineage. The patrimonial State corresponds to an extension of this power beyond the family sphere (Weber, 1971). Political patrimonial power is different from other forms of traditional power. It is a power organized around a chief, who exercises his power through the family channel, but also through that of the loyal ones, the servants and the customers who constitute to a certain extent his "administrative general staff". This system is based on the accepted obligation and loyalty of members to chiefs, and not on the quality of the public service they render. The leader's duty is to generously reward those who follow and serve him and to severely punish those who do not show themselves to be sufficiently "cooperative". This "personal government" is characterized by a set of relationships that leaders maintain not with their citizens, but with parents, clients, supporters and rivals and who together form the patrimonial system (Jackson & Rosberg, 1982). The State is therefore managed as a "father" does: there is thus a confusion between personal affairs on the one hand and political, administrative and judicial affairs on the other hand. There is no separation between the private and the public domain.

With colonization, and then independence, we kind of went from patrimonial management to neo-patrimonial management of the State affairs.

Neo-patrimonial state

In this type of state there is a particular connection between modern bureaucratic norms and patrimonial norms with as a result the existence of specific institutions such as "single political parties", centralized administrations, and the masses often consolidated by an ethnic base (Jacqumot & Raffinot, 1993). Ethnicity is pervasive throughout Africa in the political system. Thus, van den Berghe (1971) notes that: *"In the struggle for posts in the administration, the army, schools and universities, State institutions, private bureaucracies, the surest weapon is ethnic claim, the assurance of political support on an ethnic basis".* National allegiance is replaced by regional, tribal, clan or family ties. This situation creates in some countries (Cameroon, Niger, Togo, Nigeria, Rwanda…) an opposition between ethnic groups oriented towards trade and industry, kept away from power and placed under surveillance, and those who hold and occupy all the administration and the army; plainly, those who exercise political power.

This situation largely accounts for the development of emergency economic legislation. The State is no longer seen as the common good of all citizens, but as a "sesame", a "cash cow" that different groups can use for the social advancement and enrichment of some people. The political struggle is nothing but the struggle for "food", like Bayart (1989) so well described it. The State appears in fact as the main provider of wealth and the logic is circular (Medard, 1991): *"To seek power is also to seek wealth, and to seek wealth is to seek power, since one leads to the other and vice-versa".*

"Weak" state

The notion of "weak" state, borrowed from Myrdal (1969) characterizes a situation of "functional anarchy" (Jacquemot & Raffinot, 1993): lack of respect for the directives issued by the authority (this is often the case in Niger, Cameroon, Nigeria, DRC, Laurent Gbagbo's Côte d'Ivoire, Taylor's Liberia), collusions between this Authority and pressure groups whose acts should be controlled by the Authority, and the general tendency to evade all forms of administrative control. Corruption is central to this system.

Corruption

Although it is quite difficult to define corruption precisely, just like governance itself, there is a consensus that it refers to acts where the power of a public office is used for personal gain by contravening the rules of the game (Jain, 2001). Certain illegal acts such as fraud, drug trafficking, money laundering, black markets do not in themselves constitute corruption because they do not resort to the use of public power to satisfy a personal economic interest.

Defined in this way we can identify in SSA three types of corruptions: the noble, the bureaucratic and the legislative ones.

Noble corruption ("grand corruption") refers to the acts in which the political elite exploits its positions of power to shape economic policies. Public spending is directed towards the sectors where the gains from corruption are highest, little or no attention is paid to the real needs of the community (Porta & Vannucci, 1997). Although bribes are paid here and there, this type of corruption is difficult to identify when the debate on public policy is in the name of the public interest. "Grand" corruption can have worse consequences on society. The extreme situation of this form of corruption arises when a dictator is at the head of a country and makes no distinction between his personal wealth and that of the country or makes political decisions only to serve his own interests. All things considered, we can say that the regimes of Bokassa (CAR), Sani Abacha (Nigeria), Haile Selassie (Ethiopia), Idi Amin Dada (Uganda), Mobutu (former Zaire) probably corresponded to this extreme situation of noble corruption.

Bureaucratic corruption or "petty corruption" refers to acts of corruption between appointed bureaucrats and their hierarchy (the political elite) or with the public. In its most common form, public users have to bribe bureaucrats either to obtain a service or to speed up administrative procedures (Rose-Ackerman, 1998). Thus, the police, justice, health, education, customs, taxes are sectors often pointed out by the NGO Transparency in a certain number of SSA countries (Nigeria, Chad, CAR, Angola…).

Legislative corruption refers to the way and extent to which the voting behaviour of legislators can be influenced. They may receive bribes from the lobbies of business people (usually Western expatriates) or other pressure groups to enact laws favourable to their activities and to block laws harmful to these same activities. This is particularly observed in mining and / or oil-producing countries (DRC, Congo, Sudan, Angola, Chad, Sudan, Cameroon, Nigeria, Niger, Equatorial Guinea).

Whether noble, bureaucratic or legislative, corruption requires the co-existence of three elements (Bliss & di Tella, 1997; Rose-Ackerman, 1998; Jain, 2001): a discretionary power, an economic rent associated with this power, a lax judicial system

Agents' discretionary powers

Above anything else, corruption requires that an individual should have discretion (the authority to set and administer rules) over the allocation of resources. The discretionary powers of the three types of agents - the political elite, administrators, and legislators - differ in terms of the sources of these powers and in terms of their ability to control their "subjects". The elite is chosen by the people to make a defined economic and social policy. This elite acquires extensive powers by the implementation of this policy and it is very difficult to know whether it is made of good politics or not. Besides simple situations leading to nepotism, fraud, tribalism or regionalism it is also difficult to observe corruption on its part. The administrators are appointed by the political elites and delegate their power to them to administer the policies which they have previously defined. The precision of the rules and the cost of monitoring these administrators will determine their leeway in terms of corruption. Just as they choose the political elite, the people also choose lawmakers and observe their voting behaviour. Their discretion lies in the fact that they are drafting legislation that will apply to the other two agents (the political elite and the administrators). The degree of corruption of legislators is solely controlled by the people who have the capacity not to re-elect corrupt legislators.

The three agents thus have incentives to satisfy their own interests at the expense of their principals (behaviour which is fairly illustrative of the principal agent model). The greater the discretion, the stronger the incentives for agents to succumb to the temptation of corruption *ceteris paribus* (Bliss & di Tella, 1997). Note, however, that not all uses of power by politicians, legislators, or bureaucrats constitute corruption (Grossman & Helpman, 1994). The term "discretion", like corruption itself, is difficult to measure (Johnson, Kaufman, & Shleifer, 1997). In general, discretionary powers are associated with regulations (Rose-Ackerman, 1978).

Economic rent

The economic rents associated with discretionary powers constitute the second determinants of corruption. The higher the annuities, the greater the incentives for annuitants to try to evade regulations and the higher the bribes they can offer to agents with discretionary power (Braguinsky, 1996). By definition, this could exclude discretionary powers that do not affect the income of identifiable groups. For example, the power of bureaucrats to change regulations that apply to certain aspects of civic behaviour should not lead to corruption. Lack of democracy and poor bureaucracy enable rent seeking to continue (Khan, 2003). Why? First, the absence of democracy increases the likelihood for a small group to continue seeking socially damaging rent (Olson, 2000; 1997; North, 1990). Second, low wages for the bureaucracy, a back-up political bureaucracy, and a poor judiciary can each reduce the anticipated cost of accepting the bribe by the corrupt agents, making rent-seeking more likely (World Bank, 1997).

Empirical tests relating to the magnitude of rent excesses are difficult to perform in SSA because it is difficult to estimate the size of such rents. Some authors have nevertheless estimated proxy values of rents in the case of United States (Goel & Nelson, 1998; Jain, & Tirtoglu, 2000).

Laxjudiciary

The third determinant of corruption concerns the functioning of the justice system. Corruption occurs when the justice system offers a sufficiently low probability of detection and / or penalty for the offender, or worse, when the judiciary is itself corrupt.

Lack of real democracy

Modern democracy (understood as the establishment of a State endowed with institutional mechanisms making it possible to avoid the arbitrariness of power and mediating confrontations) according to Jacqoemot & Raffinot (1993) is an attempt to overcome neo-patrimonialism as it can only be based on an ever-greater degree of institutionalization of power.

Since the 1990s, social movements have been active in the field of democracy all over the African continent, particularly in SSA. These movements stand out compared to previous movements in reference to the ideology of human rights and by a challenge to the method of sharing both national wealth and international aid. The expression of the protest is first of all urban and, when it is voiced by civil servants, private sector employees and students, its main target is the structural adjustment measures imposed by the IMF and the World Bank which "undermine" their economic and social basis. The protest also quite often concerns the organization of the electoral process and the proclamation of presidential, legislative and municipal elections results (Wade's Senegal, Conté's Guinea Conakry, Obasanjo's Nigeria, Deby's Chad, Eyameda's Togo, Guei's Côte d'Ivoire, Kabila's DRC…). These movements testify to a new maturity of the urban classes which benefit from a higher education and a wider access to information than forty years ago. Moreover, they are based on relatively solid intermediate social groups, and therefore on what deserves to be called "public opinion".

Nothing however guarantees a priori the totally progressive character of these movements, sometimes quickly labelled as democratic. When the most demanding categories are made up of civil servants and students, the complaints are about maintaining the privileges of the welfare State, namely scholarships, the guarantee of outlets, the maintenance of jobs… – so many ingredients typical of an inefficient and expensive civil service – and do not concern the improvement of the living standards of the peasant or the urban underclass. Despite his active participation in demonstrations, the urban underclass remains incapable of formulating a credible demand (Jacquemot & Raffinot, 1993).

Democracy intends to redistribute differently, but it cannot develop without resources to distribute. The democratic claim in SSA is based on an ambiguity: it protests against the shortage of political and financial resources, but it may not be able to put an end to it in the short term. The difficulty it encounters is that the stake of the competition is not only political, but economic and political, since access to State functions always directly conditions access to wealth. Under such conditions, democratization will only be able to take root and avoid a return to dictatorships if there is effective social control of the circulation of wealth, if it is a means of limiting prebends by forcing the holders of power "to eat less quickly and less alone”.

Governance reforms in SSA

The classic perception of the State as a "service provider" shows that the role of the State is to ensure law and order, stable property rights, basic public goods, and redistribution to favour well-being. Faced with the inability to provide these elements, State failures imply poorer performance in terms of growth and poverty. This type of State failure has to be associated with a constellation of interrelated governance failures, including corruption and rent-seeking, market distortions and the absence of democracy. From this point of view, governance reforms in SSA can be both political and institutional.

Political reforms

Political reforms are understood as a movement towards true democracy and sometimes decentralization, together with encouraging the participation of civil society with a view to limiting the freedom to create arbitrary rents. Democratic governance seems to be the best context for ensuring citizens’ participation in decision-making because this participation is necessary in the choice of political leaders and increasing their accountability. This provides local governance and civil society with mechanisms through which citizens can voice their concerns, make decisions at the local level, and inform elected representatives on urgent matters. By providing local government with structures that allow the distribution of resources in a fair, transparent and accountable manner, democratic governance increases citizens' access to services. When decentralization is democratic, it creates a central authority. This makes governance more efficient and more responsive to local needs. The design and implementation of decentralized programmes improve access to basic services such as health care, education and low-cost housing.

Institutional reforms

Institutional reforms include moves to reshape the State to the right size by focusing on the services delivered, reducing the institutional capacity of the State to generate rents, increasing administration salaries by improving recruitment and by increasing the independence of the judiciary.

Fighting against corruption is consistent with all of these reforms and it ensures that incentives to create rents are reduced. The argument is that correcting the failure of the State requires evolving at all of these levels simultaneously. These are the conditions necessary to specifically improve the State's ability to provide public goods and stabilize property rights (World Bank, 1997; Asian Development Bank, 2000). Corruption in SSA, as anywhere else in developing countries often results from the diversion of resources from the needy and discourages national and international investments (UNDP, 2000). This has a negative impact on economic growth, income levels and employment. Democratic governance must provide an institutional framework for press freedom, an active role for civil society and a system of checks and balances between executive, legislative and judicial powers - all of which are crucial in the fight against corruption, and in strengthening transparency and accountability in governance.

Limits and obstacles to governance reforms in SSA

The limits of the reforms can arise from the facts observed and interpreted. The obstacles to the effectiveness of these reforms are socio-cultural, political, legal, institutional and geopolitical factors.

Observation and interpretation of facts

A triple argumentation can be carried out.

First, econometric studies conducted in SSA as elsewhere have found that governance variables such as corruption, the stability of property rights or even democracy are correlated with development objectives such as per capita income, per capita income growth, the investment rate and direct measures of poverty such as the child mortality rate (see for example, Hall & Jones, 1999; Kaufman, Kraay & Zoido-Lobaton, 1999; Johnson, Kaufmani & Zoido-Lobaton, 1998; Clagur *et al.*, 1997; World Bank, 1997; Knack & Keefer, 1997; 1995; Barro, 1996; Mauro, 1995). However, Khan (2003) wonders whether the rush to establish that all good things go together has not influenced the measurement and interpretation of facts? Most of the studies conducted on these studies present their results with caution, which ultimately suggests that extra care should be taken when interpreting the results. It should be noted that not all econometric work adheres to the thesis of the link between governance and development. In particular, Teaisman (2000) shows that the effects of democracy and decentralization on corruption are very weak. Burkhart & Beck (1994) show that it is the increase in per capita income that precedes the emergence of democracy and not the other way around.

Next, Khan (2003) argues that indicators for measuring the quality of governance are subjective by their nature in such a way that corruption, democracy, stability of property rights and even the degree of 'distortion' induced by politics are measures of indicators based on perception, judgment, of "competent" observers. By constructing a composite governance indicator, previous expectations can introduce a bias in the choice of evidence and weights. In addition, the general lack of time series data makes it difficult to carry out causality tests between governance variables and development objectives.

Finally, while admitting that corruption has a cost, Khan (2002b) really raises the question of the level from which sustained reductions in corruption or from which improvements in democracy can be attained before economic prosperity in the broad sense is achieved, and more importantly, whether these governance reforms are likely to accelerate economic growth enough to have an impact on poverty.

Society and culture

Some anthropological and sociological theses commonly mentioned maintain (though without scientific foundations) that the behaviours and attitudes of individuals in sub-Saharan African societies are characterized by the following traits: magico-religious or prelogical or even pre-Newtonian mentalities, old value systems, fatalism, tribalism or regionalism, blind obedience to the leader, conservatism, immobility and pusillanimity. These characteristics are opposed, according to the proponents of these theses, to the principles of democratic governance and therefore to the economic development of Africa. The values and behaviour of individuals would be incompatible with the introduction of democratic principles, of rational and transparent management of resources. Their behaviour would therefore be anti-democratic and anti-economic.

Law and politics

The absence of a rational legal order and security in trade, and the non-respect of contracts are likely to set back governance. For example, robbery in the south of Madagascar has led to a fall in agricultural production. The guerrillas and rebellions in Ethiopia, Angola, Mozambique, Sierra Leone, Sudan, Somalia and Côte d'Ivoire have pushed these countries decades back.

Institutions and geopolitics

A country torn into rival ethnicities (Rwanda, Sudan, Nigeria, DRC, Côte d'Ivoire), an insufficiently strong and respected State, lack of efficient, honest and competent public service will be bottlenecks in the democratic governance and development policies. Geopolitical factors can also influence the management of public affairs in SSA. Therefore, is it possible to carry out reforms of this management without addressing the geopolitical aims of South Africa and Angola, not to mention the ambitions of the Nigerian pole and the fears they provoke on the neighbouring countries, or on the future of the countries of East Africa, not to mention the conflict between the USA and Sudan which suddenly increases the geopolitical interest of Angola?

Conclusion

The purpose of this paper was to try to explain on the one hand the failings of governance in SSA and, on the other hand, to identify the reforms likely to remedy them. It appears that these failures are mainly due to dysfunctional institutions, corruption among governance actors, and the absence of a true democracy. The dysfunction of the institutions is the consequence of a patrimonial and neo-patrimonial management of the State. Corruption appears as the manifestation of the discretionary power of certain agents and takes three main forms: noble, bureaucratic and legislative. The electoral process in general still remains marred by many irregularities at least in its practical functioning, reflecting undemocratic behaviour.

Possible governance reforms can be both political and institutional. Political reforms should promote and strengthen democratic practices. The institutions must guarantee the rule of law and respect for the property rights of agents, limit the political and economic power of the elites, promote equal opportunities for individuals, encourage access to education and the participation of a large segment of the population in economic production.

The limits to these reforms lie in the observed and interpreted facts (causal relationships not established between governance variables and development objectives). The sources of blockages to reforms would arise from socio-cultural factors (conservatism, magical and religious mentalities, cult of the leader, pusillanimity), political and legal (ethnic conflicts, weak state, non-respect of contracts, insecurity of trade), institutional (refusal of formal or non-formal) and geopolitical (hegemonic ambitions of certain States: Nigeria, South Africa).

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5 The allocation of time in public administrations subject to bribery in developing countries: The basic model of labour supply revisited

Introduction

In the allocation of time between work and leisure, it is assumed that goods purchased on the market are, like leisure, a direct source of utility. The consumption of a combination of goods and leisure under budgetary constraints enables the individual to achieve optimal utility. Criticism of this allocation of time has always focused on the time allocated to leisure. In this perspective, Mincer (1962) states that the distribution of time is not limited to a simple choice between work and leisure. The latter includes time spent on household production, particularly in the case of women. Household chores should therefore be distinguished from leisure. However, this distinction disappears in the more general formulation by Becker (Gronau, 1997) who, starting from the idea that leisure time does not in itself produce utility, thinks that goods are combined with leisure for the purpose of obtaining household goods.

Goods bought at the market are no longer a direct source of utility as in the work / leisure dichotomy, but rather, a factor of household production (Gronau, 1986). Concerning the household, Bourguignon (1984), Leuthold (1968) and Chiappori (1992) take into account the fact that each individual is immersed in a social context which affects his preferences and his modalities in decision making.

In this regard, the work / leisure dichotomy pattern is enriched when we take into account the influence of family preferences. The choice analysis in the household is based on two approaches: the first assumes that individual preferences are transcended by those of the family (Gronau, 1977; Graham & Green, 1984). The satisfaction derived from the consumption of goods depends only on its total amount and not on the way in which it is distributed between individuals.

The second approach assumes that individuals have different preferences and make their decisions, either in isolation or through negotiation (Chiappori, 1988 and 1992). In any case, it appears that even when the neoclassical theory of labour supply takes into account the possibilities of domestic production and collective modalities, it turns out to be less satisfactory because it neglects the working time allocated to corruption in the public administrations of developing countries[1]. On the one hand, we can define corrupt working time as the time during which an employee uses part of his contractual working time on his own account; and on the other hand the contractual (or legal) working time is understood as the working time stated in the contract which binds the employee to his employer, namely

[1] Corruption is rampant in most public administrations in developing countries. See on this subject Cartier-Bresson (1992, 1998, 2000). Corruption does not plague the public administrations of these countries alone. However, the occurrence of this scourge is relatively high in comparison with the so-called developed countries.

the State, in this case. From the above, it emerges that in the neoclassical theory of time allocation, the consumption of leisure – even if this term also includes household production –is the only alternative to wage contract work; there is no room for corrupt work.

The dual problem raised here is the following: how does an individual allocate his limited time between corrupt work, contract work and leisure? And, on the other hand, to what extent can this allocation of timeenable him to remain in balance when a change in contractual salary occurs?

This study seems relevant insofar as it deepens the analysis of time allocation by offering a new light on the behaviour of the individual employee. It differs from previous work (Mincer, 1962; Becker, 1965) by the fact that it takes bribery into account in the allocation of time. The basic hypothesis is that corrupt labour can be partially or totally substituted for contract labour.

We will find that at equilibrium the marginal rate of substitution of leisure consumption is equal to the sum of the real contractual wage rate and the real bribery rate. Therefore, the decrease in the actual contractual salary can be offset by the increase in the bribery rate, thereby making it possible for the employee to remain in balance. In section 2, we will introduce the model. Section 3 discusses the limitations of the model and Section 4 concludes.

The model

The presentation of this model is based on hypotheses and the resolution of the worker's programme.

The hypotheses of the model

Five hypotheses (H_1, H_2, H_3, H_4, H_5) underlie the model:

H1: Contractual or legal labour (h_ℓ) and corrupt labour (h_c) are substitutes and/or complements

The hypothesis is likely if the official has some discretionary power which enables him, when in a monopoly position, to reduce the supply of public services. He does this either by refusing to serve users normally, or by making them wait for a long time, thereby lengthening the duration of users in the queue. The user, bribe-giver, will shorten his time in the queue (Lui, 1985). In this way, the civil servant will compensate for a reduction in his legal working time by an increase in his corrupt working time and vice versa.

H2: The public sector labour market is transparent, and corruption is observable

This hypothesis is valid in a situation where an atomistic labour supply faces numerous bribe-givers so that the market for corruption becomes very competitive (Cartier-Bresson, 1998). The hypothesis also holds in a world where it is difficult to distinguish between bribe and tax as it was the case in the Philippines of Marcos or Zaire of Mobutu (Schleifer & Vishny, 1993).

However, given the illegal and reprehensible nature of corruption, it is generally kept secret (Schleifer & Vishny, 1993).

H3: Unions of civil-service workers depend on political power

The mode of expression widely used by unionists in order to establish the equality of relationships they have always fought for with employers is their capacity to go on strike, and therefore to disrupt work. This mode of expression is all the more virulent since the reason for the strike is the fall in nominal or real wages.

However, we assume that in nations where corruption is rampant, trade unions are subservient to the ruling party. So, the independence of these unions is artificial and even illusory. It would therefore not be surprising to see that these unions do not go on strike when there is a drastic drop in wages, a decrease which is to be offset by "bribing" public services.

H4: Legal work (h_ℓ) and corrupt work (h_c) are homogeneous. Therefore, the legal (W_ℓ) and corrupt (W_c) wage rates are unique.

This hypothesis reflects the fact that on each respective legal or corrupt labour market, civil servants sell perfectly identical job qualifications. Therefore, the consideration is also the same. There is no difference between the qualifications sold; so, the buyers (the State for legal work, and individual users for corrupt labour) are completely indifferent as concerns the seller's identity.

The hypothesis is nevertheless reductive in reality, the work of a medical doctor cannot be identified with that of the nurse, just as the work of a university professor cannot be compared to the work of a primary school teacher, etc. The observable reality rather accounts for the heterogeneity of work. However, the hypothesis holds because it enables to simplify the complexity of the labour market reality.

H5: The civil-servant maximizes his objective-function under the constraint of his budget

The hypothesis expresses the rationality of the civil servant considered as a worker-consumer. As a result, his equilibrium as a consumer becomes his equilibrium as a provider of producer services. Its budgetary constraint equalizes the value (PC)[2] of the products he buys and that of the services he sells to his employer (contractual work) and to users (corrupt work), and its objective-function integrates, alongside the utility (C) of the former, "disutility" ($h = h_\ell + h_c$)[3] of the latter.

[2] P denotes the general price level and C a product representative of a set of products

[3] The disutility of work t implies an effort and a sacrifice of leisure time

The worker's programme

The consumption / leisure dichotomy is represented using a utility function specific to each individual, namely *U (C, L)*, where C and L respectively denote the consumption of goods and that of leisure. Assuming that an individual has a total endowed time L_0, the working time, expressed in hours for example, is then given by $h = L_0 - L$. This working time h can be broken down into legal and contractual working time (h_ℓ) and corrupt working time (h_c), i.e. $h = h_\ell + h_c$.

It is generally assumed that an individual wishes to consume as much goods and leisure as possible, so his utility function increases with his two arguments, namely C and L. Moreover, this individual is likely to reach the same level of satisfaction with a lot of leisure and few goods, or little leisure and a lot of goods.

- Choices

If we denote by $w$the real hourly wage (the price of consumer goods C is normalized to 1), wage income amounts to $w.h$.

These real hourly wages$w$can be broken down into real legal and contractual hourly wages (w_e) and real corruption hourly wages (w_c), i.e.$w = w_\ell + w_c$.Consequently, salary income will correspond to $w_\ell.h_\ell+w_c.h_c$.

The single wagesR represents all non-wage resources expressed in real terms.

The agent's budgetary constraint is expressed as follows:

$$C \leq wh + R \tag{1}$$

This constraint can also be written as follows:

$$C + wL \ \leq R_0 \equiv wL_0 + R \tag{2}$$

It is as if the agent has a potential income R_0obtained by devoting all of his endowedtime to work, and that he purchases leisure and consumer goods using this income. The consumption programme consists in choosing a couple *(C, L)*, respecting the budget constraint and maximizing its utility *U(C, L)*, i.e.:

$$\text{Max } U\ (C, L) \tag{3}$$
$$\text{SC: } C + wL\ \le R_{\ 0} \equiv wL_0 + R$$

The optimal solution (represented on figure 1) known as "interior", i.e. such as $0 < L < L_0$ et $C > 0$, is located at the point of tangency E between the budget line AB, of slope w, i.e. $w_\ell + w_c$, and an indifference curve (set of couples *(C, L)* for which the consumer obtains the same level of utility $\bar{u}$, such that $U\ (C, L) = \bar{u}$).

Thus, the optimal interior solution (C^*, L^*) is completely defined by the two equalities:

$$\frac{U_L(C^*,\ L^*)}{U_c(C^*, L^*)} = w = w_\ell + w_c \text{ and } C^* + wL^* = R_0 \tag{4}$$

This optimal solution specifies that the marginal rate of substitution between consumption and leisure, $\frac{U_L}{U_c}$ is equal to the real hourly wages, that is to say the sum of the real hourly legal and contractual wages (w_ℓ) and the real hourly corruption wages (w_c).

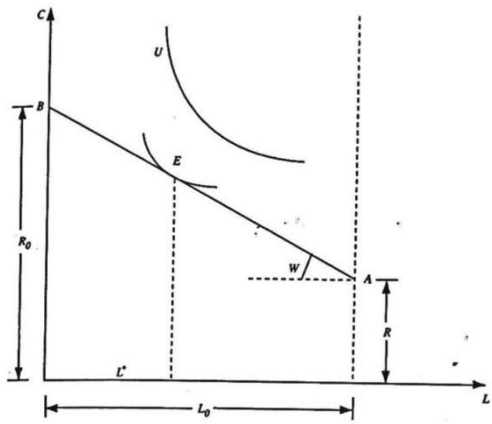

Figure 1. *The consumption – leisure arbitrage*

- The Reserve wage

For relation (A) to effectively describe the optimal solution to the consumer problem, point E must be located to the left of point A, otherwise the labour supply is zero ($L = L_0$). However, the convexity of the indifference curves implies that the marginal rate of substitution between consumption and leisure, i.e. $\frac{U_L}{U_c}$, decreases when we move to the right on an indifference curve. As this marginal rate of substitution also represents the slope of the tangent to an indifference curve, an agent offers a strictly positive number of hours if the marginal rate of substitution at point A is less than the current legal contractual wage w_ℓ. However, the employee does not only earn w_ℓ.he also receives w_c. As a result, the employee actually earns two wages, one is contractual w_ℓ and the other is from corruption w_c.

The marginal rate of substitution at point A is called the reserve wage (minimum value of the hourly wage), it is therefore defined by:

$$w_A = \frac{U_L(R,L_0)}{U_c(R,L_0)} \tag{5}$$

According to the basic model of labour supply, assuming that the endowed time L_0 denotes an invariable physical quantity, the salary depends only on the shape of the function U at point A of the non-wage income value R. The reserve wages w_A determines the conditions for participating in the labour market. If the legal current wages w_ℓ are lower, the agent does not offer working hours, it is said that he does not participate in the labour market. We can show that if leisure is a normal good (i.e. a good whose consumption increases with income), an increase in non-wage income R increases the reserve wages and therefore has a disincentive effect on entry into the labour market.

The basic model only takes bribery into account on the labour market. In such a context, the wages w_A will no longer determine the conditions for participating in the labour market, because even this salary may be lower than the legal current wages w_ℓ and the agent will nevertheless participate in the labour market thanks to bribery on this market where besides winning w_ℓ, he will also win w_c, wages from bribery, i.e. finally $w_\ell + w_c$.

If leisure is a normal good, an increase in non-wage income r increases the reserve salary without disincentive effect on the labour market because of the expected gains w_c. The occurrence of corruption in the labour market therefore calls into question the labour market and the basic model of labour supply. Reserve wages are no longer an essential determinant of market participation conditions. We can therefore summarize the conditions for participating in the labour market as follows:

$$w_A = \frac{U_L(R_1 L_0)}{U_c(R_1 L_0)} < w_\ell \qquad (6)$$

the agent participates in the labour market (basic model of labour supply)

$$w_A > w_\ell \tag{7}$$

the agent participates in the labour market (basic model of labour supply revised with hope of gaining from bribery in the labour markets).

$$w_A = w_\ell \tag{8}$$

the agent is indifferent whether or not to participate in the labour market. He may also not be indifferent and participate if there are expected wages from bribery

$$w_A = w_\ell + w_\ell \tag{9}$$

the agent is indifferent to participate or not in the labour market

$$w_A < w_\ell + w_c \tag{10}$$

the agent participates in the labour market (basic model revised with certain gains from bribery on the labour market)

$$w_A > w_\ell + w_c \tag{11}$$

non-participation in the labour market despite the assurance of wages from bribery in this market.

From theory to estimation

The relation (4) shows that the labour supply $h^* = L_0 - L^*$ depends on the wages $w^{(4)} = w_\ell + w_c$, non-wage income R and

[4] Empirical models assume that $w = w_\ell$. Here we consider that $w = w_\ell + w_c$.

preferences specific to the individual considered. This link is the basic equation for estimating the empirical model. Many studies have been devoted to this problem (see Blundell & MaCurdy, 1999). A characteristic form of this basic equation is written as follows:

$$\log h = \propto_w \log w + \propto_R \log R + x.\theta + \varepsilon$$

In this expression, *log* represents the natural logarithm; h denotes the hours worked that we break down into h_ℓ contractual and legal working hours and $h_c$working hours devoted to corruption, in other words $h = h_\ell + h_c$; $w$the net hourly wages which we also break down into w_ℓ the legal contractual hourly wages and w_c the salary of corruption, in other words $w = w_\ell + w_c$; R is a measure of income other than current wages; x is a vector describing the individual characteristics or the control variables chosen. The coefficients $\theta, \propto_w$ (avec $\propto_w = \propto_{w\ell} + \propto_{wc}$), et $\propto_R$ are parameters to be estimated, while que h, w, R and $x$are observed. Finally,ε denotes a random term reflecting the individual heterogeneity not observed.

The use of logarithms makes it possible to interpret the coefficients $\propto_w$ and $\propto_{wR}$ as the wage elasticity and the income elasticity of labour supply.

Reserve salary and activity rate

A particularly important case is when, given our preferences, our earning potential in the labour market and the magnitude of our non-wage income, we decide to offer no hours of work. In this case, the labour supply is zero. We then enter the category of inactive population and say that we do not participate in the labour market. Conversely, if we decide to offer a positive quantity of work, we participate in the labour market and we are qualified as active. The basic model of labour supply assumes that a person is less motivated to participate in the labour market when his non-wage income is important and that the wage which he can claim is low. According to this model, for any salary proposal lower than our reserve salary, we prefer to allocate all of our available time to leisure rather than working even an hour. There is a limit to the basic model here. Indeed, as mentioned above, a proposal for a salary lower than the reserve salary gives rise to participation in the labour market when bribery affects this market. The worker participates in the labour market even if the salary proposal is lower than his reserve salary because he hopes (or rather is certain) to obtain substantial additional income at his workplace due to corruption which most often are higher than his initial salary proposal.

For a given working-age population, the proportion of those who participate in the labour market is called the activity rate (relating to the population considered). As a rule, the reserve salary increases with non-salary income. Consequently, any measure aimed at reducing these incomes and / or increasing net wages without taxes has a positive effect on the desire to participate in the labour market and must increase the participation rate. This principle and its consequence must be qualified.

Indeed, the desire to participate in the market can be independent of variations in non-wage income (and therefore the reserve salary) and in net wages without taxes. This desire to participate in the market will depend more on the corruption opportunities in this market. This means that regardless of the reserve wage level, an individual can participate in the market, as long as he hopes (or rather is certain) to have bribes at his workplace.

Substitution effect and income effect

Having decided to participate in the job market, how many hours will we work? According to the basic model, it depends on the difference between the hourly wage offered (legal contractual hourly wage) and our reserve salary. As an illustration, suppose that the proposed salary begins by being equal to the reserve salary and then increases indefinitely from this value. By definition when the proposed salary increases from this level of the reserve salary, the labour supply goes from a zero value to a positive value. There is a substitution effect which makes us replace a little leisure with an equal amount of work.

There is at least a limit of the basic model in the demonstration of this substitution effect.

Indeed, having decided to participate in the labour market, the number of working hours will not depend only on the difference between the hourly wage offered (w_ℓ) and our reserve salary (w_A). In a labour market that is largely open to corruption, this difference will depend on the sum of the legal salary (w_ℓ plus the salary for corrupt practices (w_c) and the reserve salary (w_A). Thus, by definition of the reserve salary, the proposed salary (w_ℓ) may not increase at this level, the labour supply will go from a zero value to a positive value due to taking into account the salary for hours of corruption (w_c). There is a substitution effect which makes us replace a little leisure with an amount equal to the sum of the contractual legal labour (h_ℓ) and the corrupt labour (h_c).

But, whatever the volume of working hours (h_ℓ and/or h_c), any increase in wages (w_ℓ *and/or* w_c) for this same volume increases our income. If leisure is a "normal" good – which means that its consumption increases with wealth (empirical studies tend to prove that this is the case for the vast majority of individuals) – this increase in income is accompanied by a desire to take more leisure time and, therefore, a desire to work less.

This phenomenon is called the income effect, and obviously it opposes the substitution effect.

According to the basic model, as long as the proposed wage (w_ℓ) is not too large compared to the reserve wage (w_A), the substitution effect dominates the income effect and the supply of labour increases with the hourly wage (w_ℓ). But it is possible that from a certain value of the latter, the income effect dominates the substitution effect. The labour supply then decreases with the proposed hourly wage (w_ℓ).

One can also note here one of the limits of the prediction of the basic model. Indeed, the proposed salary (w_ℓ) may be lower than the reserve salary (w_A) but so far the substitution effect will dominate the income effect due to the salary for hours of corruption (w_c) and labour supply will increase with the sum of legal (w_ℓ) and corrupt (w_c) wages. But it is also likely that from a certain value on this sum of wages ($w_\ell + w_c$), the income effect dominates the substitution effect.

The labour supply will no longer decrease only with the proposed hourly wage (w_l) but rather with the sum of the contractual (w_l) and corrupt (w_c) wages.

Limits of the model

The presence of independent unions can prevent the compensation / complementarity between w_c and w_ℓ

It is acknowledged that one of themajor concerns of a trade union that is independent (of political power) is to obtain wages if not satisfactory, at least as high as possible. Unions can thus try to obtain direct wage increases by negotiating with employers, under the real or latent threatof strike.

The idea of a nominal or real wage cut is therefore not admissible for a union which can independently use legal means, notably the right to strike, to oppose this cut.

The famous controversy between Dunlop & Ross of (1944 and 1948) concerns the objectives and ultimately the nature of the union seen from a standpoint where wages are privileged. To the thesis developed by Dunlop (1944) in his work: Wage Determination under Trade Unions, The Mac Millan Company 1944, responded with the thesis defended by Ross (1948) on: Trade Union Wage policies, University of California Press, 1948.

The position of Dunlop (1944) is simple; the union, which cares about the interests of its members, seeks not to obtain the maximum salary, which could be to the detriment of the number of people hired among its members, but the total income that all of them can achieve. Consequently, unions' actions in favor of high wages cannot be separated from positions taken in favor of employment, and more generally the wage policy of a union depends on the link between wages and a set of variables which affect production and employment: costs, product prices, profits perceived by employers. In this conception, the union is conceived as an economic agent.

Ross's (1948) position is opposite. In a famous formula, this author affirms that *"the union is a political agency operating in an economic environment"*, whose leaders have as primary objective its survival and growth. We cannot therefore specify in advance the union's choices in terms of wages, it is first necessary to establish the decision-making process internal to the organization, which results from a quadruple confrontation of the leaders with the base, the employers, the government and other union leaders.

For Ross (1944), the maximization of an income cannot constitute the aim of the union, firstly because its purpose is political, secondly because the orientation of the wage policy will prove to be unstable, and in any case less sensitive to employment calculations.

However, a compromise has been found between these two conceptions, by authors such as Lester, Myers & Reynolds (1980). It consists in agreeing with Ross (1944) for the beginning and the general framework of the argument, and with Dunlop (1948) for the end. The tension between an economic logic and a political logic in the narrow sense does not disappear, it is seen as internal to the union.

In reality, the job market is heterogeneous. Consequently, there are several wage rates (w_ℓ) and bribes (w_c).

The heterogeneity of the work makes one think of the multiplicity of wage rates (high, low, average, etc.) and not of the uniqueness of these rates.

Starting from the idea that wage cuts are not the same when moving from one group of employees to another. For example, consider two salary groups, one well paid, and the other poorly paid. If the latter endures a drop of 20% while the former faces acut of 5%, the expected reactions of the 2 groups as concerns bribes in order to compensate for the drop in wages will be different.

To preserve their purchasing power, the poorly paid group will tend to receive more bribes than the other group. In general, it can be noticed that the drop in salaries in the public service hardly affects (or does not affect at all)some professions, namely the army, the police and the gendarmerie who ensure social security or help maintain the ruling party in office.

However, in the countries where the laws are flouted, the sanctions absent, even these professions are engaged in bribery although their wages are relatively high. At this level there are grounds for thinking that individuals accept bribes not in order to compensate for lower wages, but simply out of financial greed. Tanzi (2000) will speak of corruption for necessity in the first and corruption for greed in the second.

The corruption market is opaque and corruption in particular is hardly visible

The compensation between w_C and w_L may not work when corruption is unobservable. We can then imagine an electronic detection system placed in each service (like the practices prevailing in modern supermarkets) allowing a central control to identify acts of corruption in the workplace. One can also control bribery by teaming up corrupt supervisors with honest officials.

However, these forms of control would only be justified if the marginal costs of eliminating corruption do not exceed the marginal benefits expected from the phenomenon (Becker, 1968; Becker & Stigler, 1974; Banfield, 1975). From another point of view, control can prove to be ineffective if civil servants develop survival strategies in the event of a drastic w_L decline, which in reality results in the perception of bribes (Ackerman, 1998).

Furthermore, despite the unobservable nature of corruption, control can prove to be ineffective if the controllers are themselves corruptible with, as a corollary, the establishment of forms of collusion between controllers - officials - hierarchy. In general, if the attitude of the disciplinary or justice council is characterized by corruption, four scenarios are possible:

1st case: The disciplinary council or the justice system ransoms the user and not the corrupt official. The latter is punished (fine, imprisonment, etc.).

2nd case: The disciplinary or justice council ransoms the corrupt official and not the user. There is no sanction.

3rd case: The disciplinary council or the justice system ransoms both the corrupt official and the user. The counselor asks them to agree to an amicable settlement. There is no sanction.

4th case: The corrupt official gives a very large ransom to justice. Justice asks the user not to continue the trial although he is obviously right. In return, the justice system can take part of the ransom obtained from the corrupt official and bribe the user for him to drop the trial.

Conclusion

Taking bribery into account changes the job supplier's programme of the basic model. Indeed, at the optimum, the marginal rate of substitution between consumption and leisure is no longer equal to the only legal hourly real wage (w_ℓ) but rather to the latter increased by the corrupt hourly real wage (w_c). In addition, the reserve wage (w_A) no longer appears to be the only determinant of participation in the labour market, corruption plays an equally important role.

The substitution effect no longer replaces a bit of leisure only with a quantity of legal work (h_ℓ) but also with a quantity of corrupt work (h_c). The desire to take more leisure time and, consequently, the desire to work less – the income effect –can no longer be ascribed to the mere increase in the statutory salary but also to an increase in bribery.

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6 External shocks and cocoa exports in developing countries: The lessons from Cameroonian experience

Introduction

An unstable global environment can affect developing countries through international goods markets or capital markets. Within these categories, shocks affecting goods markets can take the form of declines in export demand which result in falling export prices and, in some cases, constraints on the volume of exports. Alternatively, large drops in the global supply of goods, especially oil, can raise the prices of some imported goods in developing countries. Some shocks can thus be seen either as export shocks or as import shocks. For example, the increase in the value of the dollar from 1980 to 1985 was an export shock if we measure prices in other currencies and an import shock if we measure prices in dollars (Krugman, 1987). In any case, the net effect of external shocks on both exports and imports can be summarized by considering the terms of foreign trade.

If we pay a particular attention to the export shocks that result from goods markets, we can say that the growth rate of industrialized countries affects the exports of developing countries through two channels. The first channel is that of agricultural commodity prices. When the economies of industrialized countries grow rapidly, their demand for raw materials also increases andusually leads to the increase in the prices of these commodities as compared to the prices of manufactured goods. Conversely, recessions that occur in industrialized countries generally reduce the prices of agricultural commodities. Despite the growth in exports of manufactures from some nations, most developing countries continue to be net importers of manufactured goods; the negative effect of recessions in industrialized countries on agricultural commodity prices is, therefore, an external export shock (Krugman, 1982).

For the majority of developing countries, the oil shocks caused deep disparities in the balance of payments during the 1970s. Since then, studies of external shocks - disruptive events that originate in the rest of the world (Krugman, 1987) - concerning these countries have often focused on the balance of payments in order to measure the magnitude of these shocks and to propose economic policy measures to deal with them. The interaction between disturbances of external origin and responsive economic policy measures has been described in several articles by Balassa (1981, 1981a, 1981b), with regard to the trade balance, through the use of ananalytical framework applied to a large number of developing economies. Starting from the accounting similarity between the variation in the trade balance and that of its financing, the author proceeds by successive decompositions to reveal the constituent elements of a shock, in particular the effect of the terms of trade and the slowdown in global demand.But also, how political authorities react. He identifies them either by structural adjustment headings (export promotion, import substitution), or by macroeconomic stabilization, the effects of which he identifies through the decline in domestic activity (Montalieu & Plane, 1994).

However, when external shocks produce favourable effects on the balance of payments, exports of some products which are part of the very balance sometimes suffer the negative effects for which government officials should propose appropriate solutions. The favourable effect of external shocks on the balance of payments thus overshadows the negative impact that these shocks can have on specific categories of exports; hence the need for an analysis of external shocks in connection withthe export of some products. In Cameroon, cocoa exports constitute one of these categories.

The purpose of this work is to estimate the impact of external shocks on cocoa exports in Cameroon and the country's reactionin terms of export promotion efforts. This work shall be carried out using the Balassa method revised by Carthy, Neary & Zanalda (1994). To achieve this, we shall first present the revised Balassa method and its contributions before applying it to the case of Cameroon.

Revised methodology

More frequently, estimates of these shocks have been undertaken with reference to short periods. The impact of the external shock is after all virtually, immediately registered, on the national economy. The economic policy response must take place in the short term. Among the critical analytical questions are those relating to the length of time appropriate for the required adjustment, the adequacy of the external financing that make the adjustment possible, and the medium or long-term implications in an inappropriate or inadequate short-term adjustment. These problems are debated for both the industrialized world and developing countries (Calmfors, 1983).

Several empirical analyses of external shocks and the economic policyresponses to these shocks are currently available. Their methodologies are largely similar (Helleiner, 1986). Basically, all of these methods seek to break down both shocks and economic policy responses into their main constituent parts (Balassa, 1980; World Bank, 1983, 1984; Naya, Kim & James, 1984). The impact of external shocks is typically estimated by comparing current events with those that could occur in the absence of the shocks.

This is obviously an accounting procedure that gives a little idea of the complexity of the interrelationships in an economy. To begin to establish the full effects of external shocks, it is necessary to have a comprehensive model of the whole economy in which all relevant interrelationships are fully taken into account. Some empirical investigations have proceeded in this way and have generated interesting preliminary results from simple macroeconomic models (Mitra, 1983, 1984).

However, when the assessment of the impact of external shocks relates to a single export product, it may be unnecessary to rely on such a comprehensive model. But the methodology proposed by Carthy, Neary & Zanaida (1994) seems to lend itself to a study of external shocks on a single product.

These authors consider export receipts (Xt) and their financing (R_t) are identical.

$$R_t = Xt \tag{1}$$

It is possible to specify the factors that make up these receipts in such a way as to reveal sources of economically analysable variation.

$$Rt=Xt=p_t.q_t \qquad (2)$$

The value of exports (Xt) of goods is decomposed into price (pt) and quantity (qt) (Carthy, Neary, & Zanalda, 1994). The latter is no longer disaggregated into market share and volume of world exports (Balassa 1981a, 1981b).

By reasoning on variations (noted "d") at current prices between a reference period considered as normal and the study year, the following relation (2) is obtained[1].

$$dR_t = q_t.\ dq_t + p_t.\ dq_t \qquad (3)$$

The change in export financing (dR_t) is here equivalent to the total effect of external shocks made up of the price effect ($q_t.\ dp_t$) and the quantity effect ($p_t.\ dq_t$) which should be assessed.

Effect of variation in prices (Ep_t)

The estimate of the price effect is made under the assumption that the nation in question is a small country. Consequently, this country is a price taker on the international markets. It is also assumed that the quantities do not vary when the prices vary. We can therefore isolate the price effect (Ep_t).

$$Ep_t = q_t\, d_t = q_t\, (p_t - p_{t-t}) \qquad t = (1975, ..., 1990)$$

$q_t = EVAL_t\ /\ p_t$ = volume of cocoa exports at a period t.

$EVAL_t$ cocoa exports in value of the country at a period t (FOB, in CFA francs).

P_t =price of cocoa exports at a period t.

[1] We only present the first order differentiators. A detailed discussion is provided by Moritalieu (1990) when the method of estimating the different sources of variation incorporates the double and triple products of partial derivatives.

If Ep_t> 0, we conclude that the country experiences a loss of export earnings at a period t. This loss is due to an unfavourable variation in prices from t-1 to t. This effect is accompanied by the volume effect.

Effect of variation in quantities (*Eq_t*)

Cocoa exports are dependent on changes in the world demand for cocoa. This demand is represented by the difference between the expected growth rate of the volume of world exports and the current growth rate of the volume of world exports. The quantity effect (Eqt) is therefore equal to:

Eqt = EVALt-l (TCEMatt - TEMact) t (1975, ..., 1997)

EVALt-l = exports in value of cocoa of the selected country at a period t-1.

EM_t world cocoa exports in volume at a period t.

Eqt is the quantity effect due to the change in world demand at a period t, assuming that there is no change in price from t-l to t.

If Eqt> 0, we conclude that the country experiences a loss of cocoa export earnings at a period t due to an unfavourable change in the world cocoa demand.

TCEMatt = expected growth rate of the world cocoa exports at a period t, based on the previous 10 years. The estimate of this rate is obtained through:

Log EMi a + bti b = TCE Matt i = t-11, ..., t-1

Log EMt = Log of world cocoa exports in volume at a period t.

TCEMact = (EM_t – Em_{t-1}) / Em_{t-1} current growth rate of the volume of world cocoa exports from t-1 to t. Faced with the price and quantity effects, the country can act by reducing or increasing its exports.

Evaluation of export promotion efforts

The export promotion effort (EFPt) is measured by the product of the value of exports and the difference between the growth rate of the country's exports and the growth rate of world exports.

$$EFP_t = V_{t-1} (TCEact - TCEMatt)$$

TCEact = current growth rate of cocoa exports in volume of the selected country from t-1 to t = $Eq_t - Eq_{t-1}$

Eqt = cocoa exports in volume from the country at a period t.

TCEMatt = expected growth rate of world cocoa exports in volume from t-l to t.

If $EFP_t > 0$, the country increases its export share in international trade. It is the difference between the growth rate of the selected country'sexports and the growth rate of expected world exports that is used to calibrate the export promotion effort. After presenting the estimation of the price effect, the quantity effect and the export promotion effort, let's highlight the advantages of the method.

Contributions of the method

The method of Carthy, Neary & Zanalda (1994) is advantageous at three levels with regard to the particularity of the export product considered, the relevance of the measurement of the export promotion effort and, finally, the choice of the reference period.

An analysis framework reduced to the export of a single product

A country's exports are made up of the exports of several products. When external shocks negatively affect the exports of one of these commodities, other shocks may positively affect the exports of another of these commodities. Therefore, the favourable effect of external shocks on total exports does not isolate the unfavourable impact of shocks that affect each of these products. In order to propose economic policies appropriate to the external shocks that affect a particular product, it is useful to highlight the effects of external shocks on that single product.

Corrected measure of the promotion of exports

Balassa associates all the gains in market share with the export policy. However, the modification of these shares can also result from a contraction of the supply of a competitor or from climatic hazards (Plane & Montalieu, 1994). Carthy, Neary & Zanalda (1994) rather believe that the export promotion effort is measured by the product of the exports value of the selected country multiplied by the difference between the growth rate of the country's exports and the rate of growth in world exports. This approach is limited because the fall in the expected growth rate of world exports in volume from t-1 to t can make the export promotion effort positive and suggest that the effort made by the selected country is increasing, where as this is not the case. Indeed, at a time when the export promotion effort is greater than zero, the growth rate of the country's export volume may remain constant or decrease less than proportionally compared to the growth rate of the world's export volume. To ensure that it is the export promotion effort that increases a country's market share gains, world exports must in additiongrow at a constant or increasing rate as the export volume growth rate of this country which is growing at a higher rate than that of world exports.

Choice of reference period

The choice of a fixed period is the option chosen by Balassa. This choice is relevant when the period before the shock is that of equilibrium and irrelevant when trade is unbalanced; this is the case in most developing countries (Carthy & Dhareshwar, 1992). Moreover, even if the base period is that of equilibrium, as the observation period lengthens, this fixed reference becomes insignificant (Plane & Montalieu, 1994). It is therefore preferable to understand the behaviour of exports over time without a priori on periods of shock. The logic adopted here is that of a sliding period from one year to the next, which gives a dynamic character to the analysis of the external shocks effects (Carthy, Neary & Zanalda, 1994). Once the contributions of the method have been noted, it should be applied to the case of Cameroon.

Illustration by the case of Cameroon (1975-1997)

Cameroon experienced a weak economic growth from 1975 to 1997. The average annual GDP growth was only 2.4% while the population grew at a steady rate of 2.9% per year. The consequence of this poor performance is that Cameroon, formerly a middle-income country, was reclassified by the World Bank among the countries with low per capita income in 1995, then among the heavily indebted poor countries in 2000. Located above the equator, the Cameroonian economy is dominated by agriculture focused both on the production of food crops for domestic consumption and on the production of cash crops such as coffee, cotton and cocoa for export. Neither the export of oil from the end of the 1970s nor that of timber has so far made it possible to profoundly modify the production system. The methodology discussed above enabled to obtain the results detailed in the following three paragraphsfrom data on Cameroon in terms of price effect, quantity effect and export promotion effort.

Slignt degradation of the current balance due to a context of price unstability of cocoa exports

From 1975 to 1983, the price effect was very unstable with each time an unfavourable or a favourable impact for one or two years. During this period, the public authorities exercised strong control over the cocoa sector by guaranteeing a minimum price to the producer. The guaranteed minimum price policy cancels out the unfavourable effect due to price instability during 1976, 1977, 1980, 1981, 1982 and 1983. The price stabilization fund enables the State to accumulate the surpluses generated. during good economic times, making it possible to compensate for the deficits resulting from harsh times.

During the 1983-1990 sub-period, the unfavourable price effect is such that the price stabilization system of the previous period will be shattered. Because of the unfavourable price effect, secondary banks refuse to finance cocoa buying operations. Approved exporters who previously benefited from financing from these banks were therefore unable to purchase cocoa. In addition, the surpluses on which the hopes of compensating deficits were based had disappeared. In fact, during periods of abundance, these surpluses constituted the sources of financing for non-productive sectorsactivities incapable of helping the cocoa sector in distress. To temporarily absorb the negative impact of the shock, the state decides to buy cocoa stocks from farmers.

As for the 1990-1997 sub-period, we are once again witnessing a sawtooth trend in international prices. The adjustment through external financing will be carried out through the intervention of the Stabex fund of the European

Community. To settle the arrears owed to cocoa farmers, the Minister of Industrial and Commercial Development travelled to various villages across the country to restore farmers' rights. The payment of arrearsowed to farmers did not reinvigorate the cocoa sector and the neglect of farms continued until the CFA franc was devalued. Unfortunately, the devaluation was accompanied by an unfavourable effect of the variation in world prices.

Rigid structures incapable of reacting positively to the favourable effects of global demand

From 1975 to 1983, the fall in world demand (from 1980 to 1983) was more persistent than the increase (from 1977 to 1979). However, the negative effects of this fall did not affect the farmers who benefited from the price stabilization policy.

As for the 1983 - 1990 sub-period, world demand for cocoa increased from 1984 to 1988 when the cocoa sector experienced the most acute crisis in its history. This means either that this favourable effect has not been properly exploited due to structural rigidity, or that the unfavourable effect due to the instability of international prices has not been offset by the volume effect.

Finally, during the sub-period 1990 - 1997, the world demand for cocoa is characterized by a sawtooth evolution, evidence that the devaluation did not cause an exponential increase in this demand.

Export promotional effort

In the sub-period 1975 - 1985, the effect of export promotion is characterized by a sawtooth trend (increase and decrease for one year each) which reflects the absence of an aggressive commercial policy on the part of the government authoritiestowards the world market. Indeed, there is an almost total control of the State over the cocoa sector and in particular the marketing process. The slightest export promotion effort created by this control will decrease with the abolition of the commercial function of the stabilization funds held by the Commodity Marketing Office (ONCPB).

Conversely, from 1986 to 1997, there are 3 sub-periods. The first 1986 - 1989 resulted in a favourable and sustained export promotion effort. The second, 1990 - 1993, the effort is unfavourable contrary to the previous one. The last, 1994 - 1996, is similar to the first.

With regard to the first sub-period, the favourable trend in the export promotion effort appears paradoxical in view of the acute crisis situation facing the industry. Indeed, exporters are supporting their export promotion efforts in order to respond positively to an ever-positive global demand. Unfortunately, these efforts could not be sustained after 1989 because of the persistence of the crisis marked by the fact that the State bought cocoa from the farmers on credit and postponed the payment of invoices. Indeed, it was not until the 1990-1991 cocoa season that government authorities began to pay these bills, thanks in part to the Stabex Fund.

Regarding the second sub-period, despite the payment of their old bills, discouragement had already won over the cocoa farmers. This resulted in the neglect of cocoa plantations by some farmers. This led to a reorientation of agricultural activities towards other types of produces such as food crops.

As for the last sub-period, the devaluation of the CFA franc which occurred in January 1994 stimulated cocoa exports and consequently the revival of cocoa plantations. In addition, a policy of fiscal relaxation has acted in the same direction by decreasing the tax on the export of cocoa from 25% of the FOB value to 15%, and then 5%.

Conclusion

At the end of the analysis which made it possible to estimate the impact of variations in world prices, that of fluctuations in world demand on cocoa exports and, finally, that of the effort to promote exports from Balassa's method revised by Carthy, Neary and Zanalda, we can retain that the unfavourable effect of prices was mainly unfavourable from 1983 to 1990, which contributed to the deterioration of the stabilization system put in place before 1975. The negative price effect has often been accompanied by a favourable effect due to global demand. Unfortunately, the rigidity of the cocoa supply structures did not allow the export promotion effort which was positive in the second half of the 1980s to be sustained after 1990. The devaluation of the CFA franc in January 1994 was a stimulus to the cocoa promotion effort. It is possible that cocoa exports increase at the beginning of the third millennium if the fiscal easing policy on the cocoa sector is maintained and if the favourable effects of external shocks are wisely exploited by all the actors in the sector.

Appendix

Economic policy measures relating to the cocoa sector

1955: The Caisse de Stabilization des Prix de Cacao is created in Cameroon. Its role is to ensure the regularization of the purchase price of cocoa from the producer and to apply measures likely to improve the quality and sale of the product (setting the price, choosing purchasing centres and fixing the opening date of the campaign)

1974: The Cocoa Development Company (SODECAO) is created. Its purpose is to supervise cocoa farmers. To achieve this, SODECAOmaintains and creates the cocoa fields on the one hand, buys and distributes phytosanitary products to planters on the other hand.

1987 – 1988: The secondary banks refuse to finance the purchase of cocoa from farmers. The State, through the ONCPB, takes the place of cocoa buyers. The Statebuys cocoa from farmers on credit.

1989: The ONCPB goes into liquidation. At the same time, a new company is created. This is the ONCC.

1990-1991: The Minister of Industrial Development pays the arrears owed to farmers. This operation is being carried out thanks in part to the Stabex Funds that the European Community has made available to the Cameroonian Government.

1991 – 1992: The World Bank and the French Development Cooperation Fund set up a project to rehabilitate cocoa farming in Cameroon. Despite the funding offered by these institutions, this project fails due in part to the drop in the price per kg of cocoa on the world market.

1994 January 1994: the CFA franc is devalued by 50% against the Franc Français. This results in a mechanical increase in the price per kg of cocoa.

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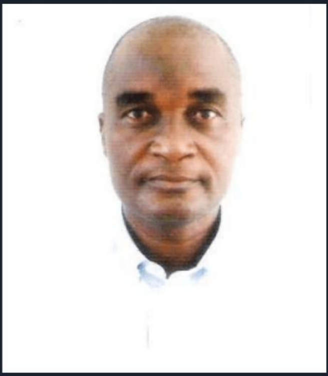

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