Studies of African Economies vol.6

From Past to Future

Siméon Maxime Bikoué

Hassan Tawakol A. Fadol

Editors

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Preface

C h.1) The aim of this chapter 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.

(Ch.2) This chapter addresses in details the basic concept of time series and predicting them with the use of Box – Jenkins Methodology multi-variables. The study aims at using the Methodology of Box – Jenkins in predicting estimating and analyzing the economic variables specifying the rate of exchange in Sudan during the period 1975 – 2019 with entering these variables in the estimated model, the study made use of the descriptive Methodology for analysis and the statistical methodology in realizing its objectives and the (SPSS[25], NCSS[20], MINITAB[16], E_views[10]). The study conclude that the time series is the best

methods for prediction in general, and the methodology of Box – Jenkins of multi- variables in particular, and in stability and (stationary) of the time series is due to the existence of the random orientation and the nature of the random indicatives of macro-economics in their environment. The proper model of the study is (ARIMA 2.1.1) according to Box – Jenkins Methodology (the multi variables one). The study concluded with to the quality and suitability of the models of (ARIMA 2.1.1) the multi-variables in predicting the rate of exchange and the specified variables. The study recommended the followings. To strive to find date base that meets all the needs of ministry of finance and National economics and the research and statistic administration at the central Bank of Sudan, and the necessity to give full care to statistical, econometrics and predictive studies regarding the different economic phenomena. The economic sector at (the Ministry of finance and National economy and the central bank of Sudan should use the model of (ARIMA 2.1.1) in predicting the rate of exchange in future accompanied with specified economic indicatives in the Models.

(Ch.3) This chapter examines whether sub-Saharan Africa's external debt is sustainable. The application of the Simonsen criterion and the conditions of the Harrod-Domar debt and growth model show that this debt is not sustainable. As a possible solution for the sustainability of this debt, the author proposes to transpose the principles of private management to the public sector by strictly respecting financial debt ratios.

(Ch.4) The chapter aimed to measure the impact of monetary policy and financial stability in the exchange rate tools in the study period 1980-2019. The significance of this study is come from the impact of the whole factors essential instrument of monetary and financial policy, and technical factors for the instability of exchange rates and the impact on economic stability in the Sudan. To do this analysis, we develop a class of instrument-based semi parametric system of simultaneous equations estimators for panel data and prove that our estimators are consistent and asymptotically normal. The study found many results the most important results is, that the weakness of monetary and financial policies and ineffective high degree due to the weakness of the monetary

markets, and its narrow scope, the increasing impact of the financial non-banking institutions, making the Central Bank and Ministry of Finance not to directing the activity of these institutions in line with the means of the monetary and financial policies. it was a lack of official data for time series variables standard models estimated negative impact on the appreciation, as the results did not match with the hypotheses to the study period, the existence of macroeconomic policies (monetary and financial) planned center large investments and problems in the completion of projects programmed led to excessive borrowing from abroad in addition to monetary issuance of central bank without charge in production.

(Ch.5) The author of this chapter wants to show that industrialisation by substitution of imports has been a failure in Africa and it has made firms in this part of the world less competitive on the foreign market. As such he suggests 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 is translated amongst others by the appropriation of new technologies, the protection of infant industries, the cloning of manufactured products imported out of Africa, regional integration and the culture of exporting manufactured products.

(Ch.6) Competitiveness of Dar es Salaam city depends on strategic location, local market demand, integration with regional clusters, and human resources. Various companies and programmes have identified and exploited each of these advantages from time to time. Therefore, this paper explores the empirical and theoretical literature reviews on the challenges and constraints of competitiveness of small scale entrepreneurs in Dar es Salaam city. Most important is the efforts of the government Small and Medium Entrepreneurs (SMEs) initiatives for improving the informal sector that employs the majority of the Tanzanians. It is the detriment of the competitiveness, that the actors will lay the foundations

for the attractiveness of a city as a place to live and do business. The competitiveness of a city is also greatly influenced by good governance and the involvement of the private sector. Thus, Dar es Salaam city needs the assessment that will focus on the conditions required for a vibrant local economy that attracts inward investments, as well as on the responsiveness of the Government strategies in the Small Scale Entrepreneurship.

Editors
S.M. Bikoué & H.T.A. Fadol
July 23, 2020

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and Advocacy. Being a member of OSSREA Academic team as Executive Treasurer from 2009 to 2011 responsible for collection of funds from respective members and researchers. She has been coordinating training activities of small enterprises of batiks, food processing, soap making, etc. as Trainer of Trainer in a community group of *Waalimu wa Wajasiriamali* (Teachers of entrepreneurs). As a Associate Consultant with GAD Consult, she has undertaking gender trainings on HIV/AIDs with the Ministry of Health, Community Development, Gender, Elderly and Children in Zanzibar and Tanzania Mainland for two years from 2006 to 2008. As a member of TUDARCo teaching team, she teaches Poverty Reduction Strategies, Gender and Development, Environment, Education, Globalization and Decentralization courses.

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1

How to improve governance in Sub-Saharan Africa?

Siméon Maxime **Bikoué** [†]

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 (Adejumobi, 2002; Pierre & Guy, 2000; Hyden, 1999). An attempt to synthesize these two approaches can be found in Kaufmann *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

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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 (Kaufmann *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).

Determinants 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 & Subramanian, 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 (Jacquemon & 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" (Jacquemon & 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 Ttransparency 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).

Lax judiciary

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 Jacquemot & 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, Eyadema'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 reform 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; Johson, Kaufman & Zoido-Lobaton, 1998; Clague, *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, Treisman (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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Ch.1. How to improve governance in Sub-Saharan Africa?

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Ch.1. How to improve governance in Sub-Saharan Africa?

2

Forecasting of estimation and analysis of affective variables in exchange rate in Sudan using (Box-Jenkins) multi-variables methodology: Timeline from 1975-2019

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Introduction

Economic decisions in most cases have repercussions and effects that take their scope on the ground, and there may remain a period of time until they recede or disappear, and there is usually a time period between a decision or an activity and the possible consequences and consequences of this decision or activity after the expiration of that period. And that these effects do not usually appear in one go, but rather are distributed over periods or time gaps that may be long or short depending on the reality of the phenomenon to be studied and analyzed. The characteristic of uncertainty in determining the kinetics of the behavior of different statistical variables, especially in economic and financial issues, has made modern theories in

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applied statistics in general, time series methodologies in particular, and the Box-Jenkins method (specifically) give a measure of importance starting with using the specific variables of the phenomenon (under study) As dependent variables, she and the variable to be studied are affected by time. This additional characteristic would contribute to improving the predictions resulting from these different models.

Sudan has witnessed during the last four decades a significant deterioration in the value of the national currency and instability in the exchange rate and related policies. This has resulted in the asset value being eroded as a result of the continuous deterioration in the value of the Sudanese currency against the US dollar and other currencies. The exchange rate is considered one of the most important tools of indicators of economic stability because it affects and is affected by other economic indicators. In addition to being affected by internal and external conditions, and as a result of the trade exchange of goods and services between countries, the concept of the exchange rate arose, so monetary authorities give great attention to exchange rate policies, especially countries that suffer from scarcity in their foreign currency resources (Sudan as a model), because the strength of economic stability of any country It is closely related to the exchange rate of the national currency against other currencies.

The process of prediction in time series is directly affected by choosing the appropriate model for time series data (model building), where this step directly affects the accuracy of predictions obtained using classic time series models and modern time series models, and time series data for different sectors are mostly non-data Linear and sometimes suffers from randomness, disturbances and fluctuations, but most forecasting methods used in analyzing this data may not observe these aspects, which may

negatively affect the accuracy of the results obtained from these methods. So building a model for forecasting according to the multi-variable Box-Jenkins methodology, is through a series of stages and employing many statistical tests, ensuring accuracy in drawing plans better, increases rationalization of economic decisions and their effectiveness in the future.

There has been a significant development in the second half of the seventies in the methods of time series analysis for prediction, the most important of which is the Box-Jenkins methodology, which is multivariate. Therefore, the main objective of this study is to forecast and estimate the economic variables affecting the exchange rate in Sudan from By identifying the best statistical and standard methods used in forecasting. The study aims to achieve the following goals: (1) Learn about modern time series models and multivariate Box-Jenkins methodologies. (2) Learn about the concepts and literature of the exchange rate, the specific economic variables and indicators affecting it, and the stages it went through during the study period. (3) Measuring the statistical relationship between the variables affecting the exchange rate in Sudan during the period and determining its direction using the multi-variable Box-Jenkins method. (4) Determining the ideal model of the Box-Jenkins multivariate methodology models in building a base for predicting exchange rate movement according to the determinants of variables and economic indicators in Sudan during the study period.

The two descriptive, analytical and inductive approaches were relied on in relation to the theoretical aspect of the phenomenon, since they correspond to the position of determining the facts, understanding the components of the subject, subjecting it to careful study and analyzing all its dimensions with a form of clarification and interpretation. Likewise, the historical method for listing the development

of the exchange rate and the financial determinants affecting it in Sudan. The descriptive method to describe the case of Sudan. As for the applied (field) aspect of the study, the case study methodology was adopted by employing the steps of the methodology concerned with prediction models using the Box-Jenkins multivariate methodology, in order to drop the study on the practical reality where the Central Bank of Sudan data was used as a model to apply what was covered in Theoretical aspect of the phenomenon. Likewise, the applied standard methodology is standardized methods, a set of tests for time series and the multivariate Box-Jenkins methodology. Statistical packages were used (SPSS[25], NCSS[20], MINITAB[16], E_views[10]).

Theoretical and empirical literature review

The Bank of Sudan has applied the fixed exchange rate system since its rate was set in 1958 after Sudan joined the International Monetary Fund, and the country agreed with the fund to set the Sudanese pound exchange rate at $ 2.87. In August 1971 the pound was pegged to the US dollar. Since the beginning of the seventies, Sudan began using the policy of reducing the exchange rate as a tool for the external budget, in order to deteriorate the position of the balance of payments and the general scarcity of foreign exchange for large spending on development projects, which weakened the country's ability to import basic production inputs, which led to low production and productivity in all Economic sectors. Therefore, the system of multiplication of exchange rates was introduced for the first time in the country, in addition to the official price, there was an encouraging price for some exports, an import tax, and an incentive price for expatriate transfers, so that the actual price of the Sudanese pound became 2.5 dollars (Central Bank of Sudan, 2015).

In Sudan, exchange rate policies were not used as a tool to reform the structural imbalance in the balance of payments and create internal and external balance until the end of the seventies, when the government began to bring about a series of reductions in the Sudanese pound exchange rates in 1978, so that the exchange rate continuously decreased under the supervision of the International Monetary Fund According to his directives, with the aim of redressing structural imbalances in the economy, reducing the balance of payments deficit, and encouraging foreign investment. Therefore, the Fund carried out its first experiment in Sudan using the exchange rate methodology, through its first note based on a study prepared by Karim Nashashibi using the crop competitiveness approach in 1978, to create adjustments in the exchange rate, in which he explained that the Sudanese pound reduction aims to secure the competitiveness of crops, by claiming that The Sudanese pound is denominated in more than it is dictated by the combination of international prices and the combination of local costs (Mohamed, 2004).

Systems for determining exchange rates have evolved from the fixed prices that were applied in light of the gold rule until 1971, as the dollar became the pillar of the international monetary system and the disengagement of the dollar to gold, which led to the adoption of flexible and floating exchange rates in many countries that have adopted economic liberalization and restoration policies Structuring (Saleh, 2005). With regard to Sudan, he worked with the system of stabilization since 1957 AD for the equivalent of the currency, as the exchange rate was pegged to the pound sterling until it was pegged to the dollar in 1971, and work continued under the foreign exchange control system until the issuance of the law regulating dealing in foreign exchange in 1979 through the official and parallel markets (Muhammad, 1997). This law is a turning point in the foreign

exchange policy in Sudan and two types of exchange rates can be distinguished: the official market and the parallel market (Hamzah, 2013).

The fluctuations in exchange rates and the associated risks represent one of the most important problems facing financial and economic institutions of all kinds. Sudan has for decades been facing fluctuations in the exchange rate and defining the specific variables of this fluctuation. The problem of this study lies in the fluctuation experienced by the exchange rate during the study period and how to build The formulation of a statistical model using the multi-variable Box-Jenkins methodology helps in estimating, analyzing and forecasting the movement of the exchange rate in Sudan and measuring the variables and economic indicators affecting it during the study period (1975-2019).

The importance of this study stems from the great importance of forecasting methods in analyzing economic time series data, through its use in decision-making processes and drawing future policies for different economic sectors. One of the methods used to analyze economic time series data towards time is that of Box-Jenkins models, due to the high degree of accuracy in its forecasts, and the great importance of these methods in the economic sectors. Building time series models for forecasting and planning for the future to tackle this sector.

Applied importance: It is represented in providing those interested in the economic side of decision-makers, investors and researchers looking to forecast the movement of the exchange rate in Sudan and the consequent development of economic plans to confront any potential economic crises or problems. Statistical significance: It is represented in the use and application of modern methodologies in time series such as the use of the Box-Jenkins multivariate methodology that strengthens the predetermined model and prepares it to

predict the introduction of independent variables into the time series model.

Data, model and methods

Data and empirical modeling

The annual data of the study variables (exchange rate, inflation rate, size of the monetary block and foreign exchange reserves) were collected from the Central Bank of Sudan. Mainly in the reports of the Central Bank of Sudan for the period 1975-2019.

Methodology

Box-Jenkins multivariate methodology

Box - Jenkins Analysis refers to a systematic method of identifying, fitting, checking, and using integrated autoregressive, moving average (ARIMA) time series models. The method is appropriate for time series of medium to long length (at least 50 observations). The idea of time series analysis is simply an estimate of a mathematical model that can roughly simulate the historical hierarchy of this phenomenon so that it can accurately estimate time series values and can be used to predict future values for this phenomenon, and the method of time series analysis is based on the idea of finding a mathematical model appropriate to the nature of the data so that it makes the rest Residuals are minimal and do not have any kind of internal correlation. Time series can be monitored in various types of knowledge and different fields of application in the fields of economics, education, medicine, environment, meteorology, agriculture, chemistry, engineering, and forecasting process is a common issue in many areas of science such as electricity, hydrology and economics etc. This process has been the focus of attention of statisticians for a long period of time (Okasha, 2002).

Box-Jenkins methods were developed by Box & Jenkins (1976) to analyze Stationary time series. The fact that the chain is stable means that its mean and its variance Variance are constant throughout the time of the chain, and that the Covariance variance between two periods depends only on the distance (or so-called Lag) between the two periods and not on the time point at which the correlation is calculated. This means that assuming that the series is divided into a set of time periods, the averages and variations of the chain values for the different periods are equal, and if there is a correlation between the values of the successive series, it is the same in all periods, it does not increase or decrease, for example, with the difference of the time period (Al-Amin, 1995).

Box-Jenkins prediction method (Tenenhaus, 1994) is an important method as it was specifically developed to deal with complex time series, in general in cases where the prototype is not previously proposed, and this is why Box Genghis suggested a process or systematic approach. In order to know or diagnose, estimate, choose models and finally do the prediction process (Michaud, 1989), as this method is very rich and methodologically accurate and it is a generalization of the techniques of La moyenne Mobile as it is (Bayes Ballet) which is what It is said to be random (Aleatorie) (Yusef, 2008).

The principle of this method is based on the idea that most time series can be considered as broad averages (Stochastique), and can be described based on reference models. However, it is assumed in the time series that it occurs with a cross-model (Processus - Stochas) along with the effectiveness of this method and the accuracy of its results, we find it stipulated:

1- A long time series containing at least 50 views.

2- The researcher's experience and skill in the process of revealing the very accurate model.

Auto-correlation function

The autocorrelation function can be used for the following two purposes (Box & Jenkins, 1976).

To detect non-randomness in data.

To identify an appropriate time series model if the data are not random.

Given measurements, Y1, Y2,..., YN at time X1, X2, ..., XN, the lag k autocorrelation function is defined as

$$\rho(k) = \frac{cov(x_t, x_{t+k})}{\sqrt{v(x_t)\sqrt{v(x_{t+k})}}} - 1 \leq \rho(k) \leq 1$$

Where: $\rho(k)$: represents the auto-correlation function, $cov(X_t, X_{t+k})$: represents the variance common between the two variables x_{t+k}, x_t. The graph of the auto-correlation function is called a Correlogram. The series auto-correlation function is tested by comparing the original chain auto-correlation function with that generated by the (estimated) model. If a fundamental difference is observed between them, it is conclusive evidence of the failure of the selection process, and this requires rebuilding and estimating the model again, but if Similarities are the same as in the case when comparing the auto-correlation functions, we move to the study and analysis of the residues of the model, and this process requires calculating and drawing the auto-correlation function for these residues.

Although the time variable, X, is not used in the formula for autocorrelation, the assumption is that the observations are equi-spaced. Autocorrelation is a correlation coefficient. However, instead of correlation between two different variables, the correlation is between two values of the same variable at times Xi and Xi+k.When the autocorrelation is used to detect non-randomness, it is usually only the first (lag 1) autocorrelation that is of interest. When the

autocorrelation is used to identify an appropriate time series model, the autocorrelations are usually plotted for many lags.
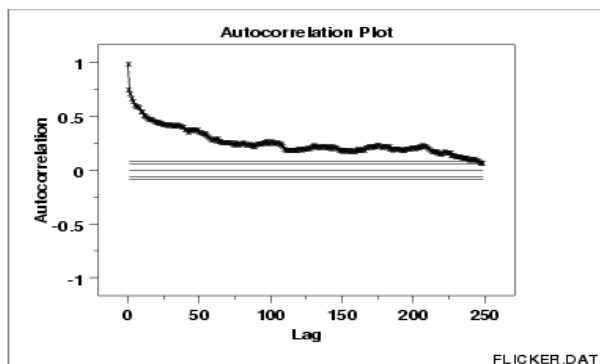
Figure 1. *Autocorrelation plot*

Partial auto-correlation function (PACF)

This function enables the calculation of partial Auto-correlation coefficients between observations in different periods, and also allows for the formation of Auto-correlation models, and is mathematically defined as follows:

$$r(h) = \frac{cov(x_t - \hat{x}_t)(x_{t+h} - \hat{x}_{t+h})}{\sqrt{(x_t - \hat{x}_t)\sqrt{(x_{t+h} - \hat{x}_{t+h})}}}$$

Where: $\hat{x}_{t+h}, \hat{x}_i$ are the slopes of each, respectively.

The graphical representation of a partial Auto-correlation function is called a Partial Correlogram.

Stages of multivariate time series analysis

The Box-Jenkins methodology is a five-step process for identifying, selecting, and assessing conditional mean models (for discrete, univariate time series data). Multivariate time series go through four stages: the

(Identification) stage, the (Estimation) stage, the examination and (Diagnostic, Checking) stage, and finally the (Forecasting) phase (Jenkins, 1994).

Establish the stationarity of your time series. If your series is not stationary, successively difference your series to attain stationarity. The sample autocorrelation function (ACF) and partial autocorrelation function (PACF) of a stationary series decay exponentially (or cut off completely after a few lags).

Identify a (stationary) conditional mean model for your data. The sample ACF and PACF functions can help with this selection. For an autoregressive (AR) process, the sample ACF decays gradually, but the sample PACF cuts off after a few lags. Conversely, for a moving average (MA) process, the sample ACF cuts off after a few lags, but the sample PACF decays gradually. If both the ACF and PACF decay gradually, consider an ARMA model.

Specify the model, and estimate the model parameters. When fitting nonstationary models in Econometrics Toolbox™, it is not necessary to manually difference your data and fit a stationary model. Instead, use your data on the original scale, and create an arima model object with the desired degree of nonseasonal and seasonal differencing. Fitting an ARIMA model directly is advantageous for forecasting: forecasts are returned on the original scale (not differenced).

Conduct goodness-of-fit checks to ensure the model describes your data adequately. Residuals should be uncorrelated, homoscedastic, and normally distributed with constant mean and variance. If the residuals are not normally distributed, you can change your innovation distribution to a Student's t.

After choosing a model—and checking its fit and forecasting ability—you can use the model to forecast or generate Monte Carlo simulations over a future time horizon.

Model Identification

Assuming for the moment that there is no seasonal variation, the objective of the model identification step is to select values of d and then p and q in the ARIMA(p,d,q) model. When the series exhibits a trend, we may either fit and remove a deterministic trend or difference the series. Box-Jenkins seem to prefer differencing, while several other authors prefer the deterministic trend removal (Box, Hunter, & Hunter, 1978). The identification steps involve fitting the autoregressive component (variable "p"), the moving average component of the ARIMA model (variable "q"), as well any required differing to make the time series stationary or to remove seasonal effects (variable "d"). Together, these user-specified parameters are called the order of ARIMA. The formal specification of the model will be ARIMA (p,d,q) when the model is reported. The first step in model identification is to ensure the process is stationary. Stationarity can be checked with a Dickey-Fuller Test. Any non-significant value under model assumptions suggests the process is non-stationary. The process must be converted to a stationary process to proceed, and this is accomplished by the differencing the time series using a lag in the variable as well as removing any seasonality effects. The lagged values used to difference the time series will constitute the "d" order (Box, 1949).

Once the process is stationary, we fit the autoregressive and moving average components. To fit the model we use the Autocorrelation Function (ACF) and the Partial Autocorrelation Function (PACF) in addition to various model fitting tools provided by software. There are various sets of rules to guide p and q fitting in lower order processes, but generally we let the statistical software fit up to 12-14 orders for AR and MA, and suggest combinations that minimize an AIC or BIC criterion. This part is as much as an art form as it is a structured process. The goal during this

phase is to minimize the AIC/BIC criterion (Box, & Jenkins, 1976).

Value of p: The value of p is determined from the partial autocorrelations of the appropriately differenced series. If the partial autocorrelations cut off after a few lags, the last lag with a large value would be the estimated value of p. If the partial autocorrelations do not cut off, you either have a moving average model (p=0) or an ARIMA model with positive p and q.

Value of q: The value of q is found from the autocorrelations of the appropriately differenced series. If the autocorrelations cut off after a few lags, the last lag with a large value would be the estimated value of q. If the autocorrelations do not cut off, you either have an autoregressive model (q=0) or an ARIMA model with a positive p and q.

Model estimation

The estimation procedure involves using the model with p, d and q orders to fit the actual time series. We allow the software to fit the historical time series, while the user checks that there is no significant signal from the errors using an ACF for the error residuals, and that estimated parameters for the autoregressive or moving average components are significant (Box, 1954a).

Maximum Likelihood Estimation: Once you have guestimated values of p, d, and q, you are ready to estimate the phis and thetas. This program follows the maximum likelihood estimation process outlined in Box-Jenkins (1976). The maximum likelihood equation is solved by nonlinear function maximization. Back casting is used to obtain estimates of the initial residuals. The estimation process is calculation intensive and iterative, so it often takes a few seconds to obtain a solution (Box & Cox, 1964).

Diagnostic Checking

Once a model has been fit, the final step is the diagnostic checking of the model. The checking is carried out by studying the autocorrelation plots of the residuals to see if further structure (large correlation values) can be found. If all the autocorrelations and partial autocorrelations are small, the model is considered adequate and forecasts are generated. If some of the autocorrelations are large, the values of p and/or q are adjusted and the model is re-estimated. This process of checking the residuals and adjusting the values of p and q continues until the resulting residuals contain no additional structure. Once a suitable model is selected, the program may be used to generate forecasts and associated probability limits (Box, 1954b).

Forecasting

After a model is assured to be stationary, and fitted such that there is no information in the residuals, we can proceed to forecasting. Forecasting assesses the performance of the model against real data. There is an option to split the time series into two parts, using the first part to fit the model and the second half to check model performance. Usually the utility of a specific model or the utility of several classes of models to fit actual data can be assessed by minimizing a value such as root mean square.

Empirical results and discussion

In this section of the study, the learner reviewed the results of the applied aspect of the study, through a detailed pre-presentation of the steps of statistical analysis of the data of time series multivariate, which is represented in the exchange rate rates, inflation rates, the size of the monetary mass, and the reserve of foreign exchange during the time period 1975-2019 AD where The chapter started by presenting a simplified statistical description of time series data through statistical measures and diagrams in order to

give a general idea of the nature of time series data that will be modeled using the multi-variable Box and Genesis method models using the programming languages of statistical analysis (SPSS[25], NCSS[20], MINITAB[16], E_views[10]) . Then the learner worked on applying the prediction stages of the Box and Genghis methodology, which are multivariate according to its four stages.

Descriptive statistics

The study included long-term time series consisting of (45) views during the years 1975 to 2019, and it is acceptable according to the literature of statistical analysis of multivariate time series, and these chains are economic variables for the Sudanese economy and are exchange rates (ER) and inflation rates (INF) , The size of the monetary block (M2), and foreign exchange reserves (R) were obtained from the Central Bank of Sudan and compared to some sources such as the Central Bureau of Statistics and the Ministry of Finance and National Economy.

Table 1. *The statistical characteristics of the study data during the period from 1975-2019*

	ER	INF	M2	R
Mean	1.534290	44.81429	15083.00	13.82281
Median	0.823200	21.55000	2170.200	14.00000
Maximum	6.182000	307.0000	112475.3	30.00000
Minimum	0.005000	-1.000000	31.00000	0.367000
Std. Dev.	1.785339	59.19397	26859.20	8.627480
Skewness	1.077407	2.634253	2.152840	-0.060657
Kurtosis	3.459059	10.86407	6.861809	2.191011
Jarque-Bera	8.494430	156.8014	58.54179	1.171067
Sum Sq. Dev.	130.6848	143661.0	2.967410	3051.770
Probability	0.014304	0.000000	0.000000	0.556809
Observations	45	45	45	45

Time series stationary study

Identify the Stationary of the time series under study through the statistical readings of the ACF and partial Auto-correlation (PACF) functions of the time series of the macroeconomic variables (ER, INF, M2, R) during the period, as well as the three-unit shear tests of Dicky - Fuller Extended(ADF) and Philips Byron Test (PP) and KPSS Test.

Table 2. *Auto-correlation coefficients (AFC) for the time series in question and the value of the statistical significance*

Lag	ACF (ER)		ACF (INF)		ACF (M2)		ACF (R)	
	sig	ACF	sig	ACF	sig	ACF	sig	ACF
1	.000	.951	.000	.718	.000	.889	.000	.884
2	.000	.893	.000	.599	.000	.790	.000	.770
3	.000	.832	.000	.488	.000	.696	.000	.664
4	.000	.768	.000	.407	.000	.610	.000	.505
5	.000	.683	.000	.304	.000	.532	.000	.350
6	.000	.603	.000	.163	.000	.459	.000	.204
7	.000	.527	.000	.064	.000	.387	.000	.127
8	.000	.453	.000	-.098	.000	.325	.000	.048
9	.000	.383	.000	-.084	.000	.264	.000	-.041
10	.000	.315	.000	-.142	.000	.204	.000	-.069
11	.000	.244	.000	-.200	.000	.153	.000	-.107
12	.000	.167	.000	-.233	.000	.107	.000	-.137
13	.000	.089	.000	-.292	.000	.070	.000	-.147
14	.000	.015	.000	-.323	.000	.043	.000	-.169
15	.000	-.061	.000	-.351	.000	.027	.000	-.184
16	.000	-.137	.000	-.358	.000	.019	.000	-.202

Table 3. *Results of Unit-Root Test (ADF) for all variables*

Variables	ADF-Test				PP-Test			
	Level		1ST Difference		Level		1ST Difference	
	Statistical test	Prob	Statistical test	Prob	Statistical test	Prob	Statistical test	Prob
(ER)	-0.5747	0.8650	-2.1268	0.0337	1.20283	0.9977	-2.2845	0.0233
(INF)	-4.1128	0.0025	---	---	-4.0980	0.0026	---	---
(MS)	-13.5344	0.9581	-6.5096	0.0000	41.8023	0.9999	-1.1570	0.0000
(R)	-1.7437	0.4024	-6.6040	0.0000	-1.7973	0.3766	6.6054	0.0000

As it is clear from the previous table that the results of the Dicky-Fuller Extended Test (ADF) indicate that the time series are not static at the level at the significance level 0.05 where the calculated statistical significance levels are greater than the specified significance level 0.05, but the test results indicate that the time series have reached a stage Stillness after conducting the first differences for it, as the levels of the statistical significance of the test are less than the specified significance level 0.05, except for the variable of inflation rates that settled in the level, and the results of the (PP) test indicate the same results according to the literature and concepts of stillness and stability of time series.
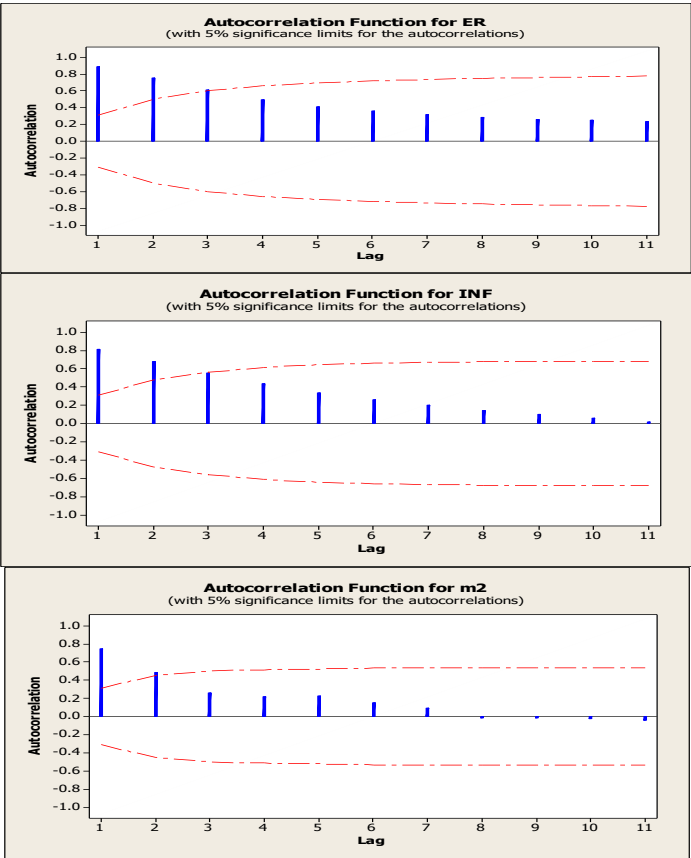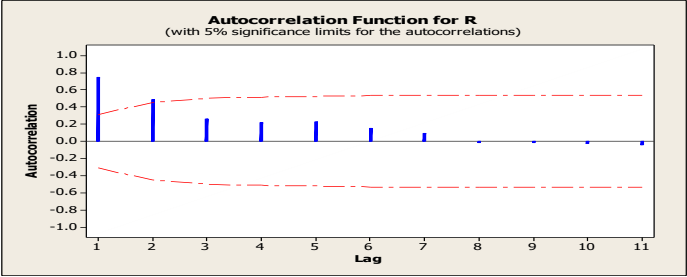
Figure 2. *Autocorrelation of the study variables*
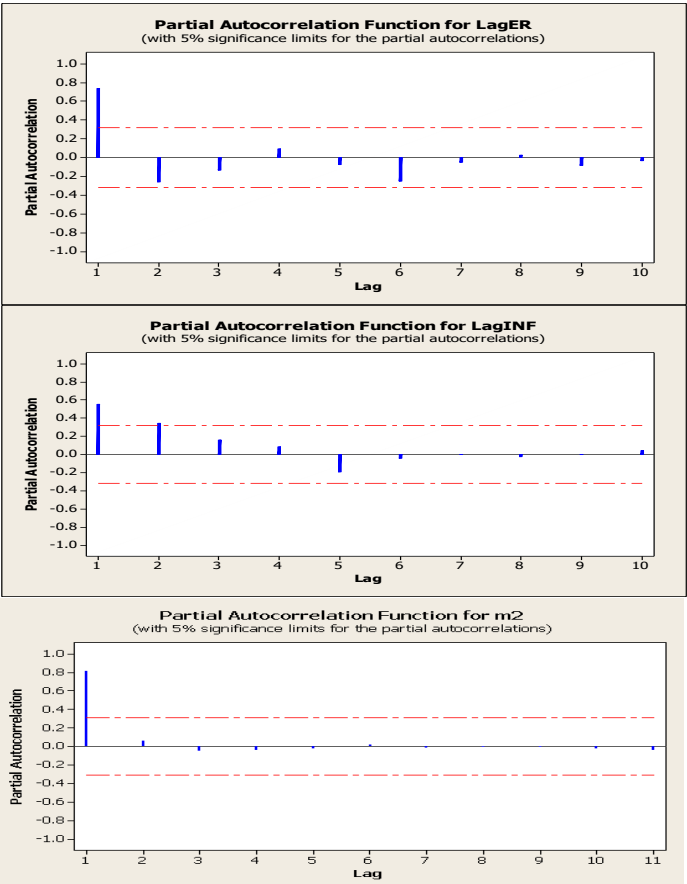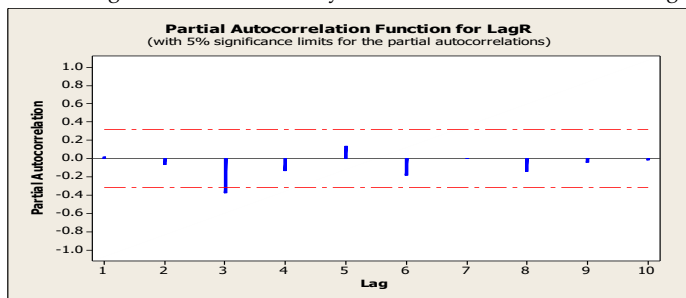
Figures 3. *Partial autocorrelation of the study variables*

Application of forecasting stages according to the Box Jenkins methodology (multivariate)
Identification stage

It is the most important stage in building models for the Box-Jenkins multivariate methodology based on the data series. This stage aims to identify a model or a set of models from ARIMA models to study the exchange rate phenomenon and the specific economic indicators affecting it in Sudan during the period from 1975 -2019 AD, and the first steps of this stage are to determine the extent of the stillness of the time series used in the study or not, and to find out that the graphic signature of the time series (ER, INF, M2, R) was examined in terms of the stability of the variance and the mean.

Identification of the model means determining the levels of the self-regression model (p), the level of the moving averages model (q) and the difference of the difference (d), which were determined according to the time series stability tests for the study variables, where they came stable in the first difference, and upon observing the form of the modified self-correlation equation with the differences from The first order (D "ER", D "INF", D "M2", D "R") shows that the first difference is the order of differences (d = 1).

Estimation stage

The proposed ARIMA models were estimated based on the self-correlation functions and the partial self-correlation functions of the static time series that are studied, and by experimenting with different alternatives to the Arima models for each data series in order to obtain the best model, the results of the best model include for each data series, where these models were compatible with Expected patterns, and all estimated transactions were statistically significant at the level of 5% as the value of (T-ststistic) was greater than (1,96) for all transactions.

Table 4. *Estimate the parameters of the proposed ARIMA models (2,1,1)*

Models	RMSE	MAPE	MAE	R2	AIC	BIC	Ljung-Box		
							Statistics	DF	Sig
EX	.195	96.682	.112	.989	1036.12	-2.746	13.992	15	.526
M2	3166.73	280.386	1551.91	.988	1010.02	16.487	5.903	15	.981
R	3.481	50.029	2.302	.848	1053.43	2.923	17.501	15	.290
INF	61.548	129.353	32.262	.047	1031.33	8.581	8.828	15	.886

From the SPSS[25] outputs of the proposed models, it is clear that the ARIMA (2,1,1) model is the best model for predicting the estimation and analysis of economic variables set for the exchange rate in Sudan during the period from 1975-2019 AD, through the lowest value of all model quality criteria and the largest A value for the determination parameter (R^2) using the Bucks Jenkins multivariate methodology where the value of the criteria (AIC, BIC, RMSE, MAPE, Ljung-Box) was the lowest value in all the proposed models.

Diagnosis and checking stage

By examining the estimates of the self-regression parameters obtained at the estimation stage to ensure that they achieve the sleep condition, as follows:

$\theta_1 + \theta_2 < 1$

$\theta_2 - \theta_1 < 1$

$|\theta_2| < 1$

ARIMA 2,1,1 – (ER)

$\theta_1 + \theta_2 = 0.4518 + 0.3566 < 1$

$\theta_2 - \theta_1 < 1 = 0.4518 - 0.3566 < 1$

$|\theta_2| < 1 = |0.4518|$

ARIMA 2,1,1 – (INF)

$\theta_1 + \theta_2 = 0.6587 + 0.1547 < 1$

$\theta_2 - \theta_1 < 1 = 0.6587 - 0.1547 < 1$

$|\theta_2| < 1 = |0.6587|$

ARIMA 2,1,1 – (M2)

$\theta_1 + \theta_2 = 0.4368 + 0.3116 < 1$

$\theta_2 - \theta_1 < 1 = 0.4518 - 0.3566 < 1$

$|\theta_2| < 1 = |0.4368|$

ARIMA 2,1,1 – (R)

$\theta_1 + \theta_2 = 0.3318 + 0.3177 < 1$

$\theta_2 - \theta_1 < 1 = 0.4518 - 0.3566 < 1$

$|\theta_2| < 1 = |0.3318|$

In order to ascertain whether the model (ARIMA 2,1,1) represents the reality of the process that generated the data, this model must pass a number of tests and diagnostic tests, including residual drawing and self-correlation function testing, and Box-Ljung rate test (Box-Ljung).The rest of the tests were examined to determine the extent to which the observations matched the values calculated from the candidate model and the validity of the model hypotheses. If the nominated model passes these tests, we will certify it as it is the final model used to generate future forecasts. Otherwise (i.e. in case not passed), we return to the first step to assigning a new model.
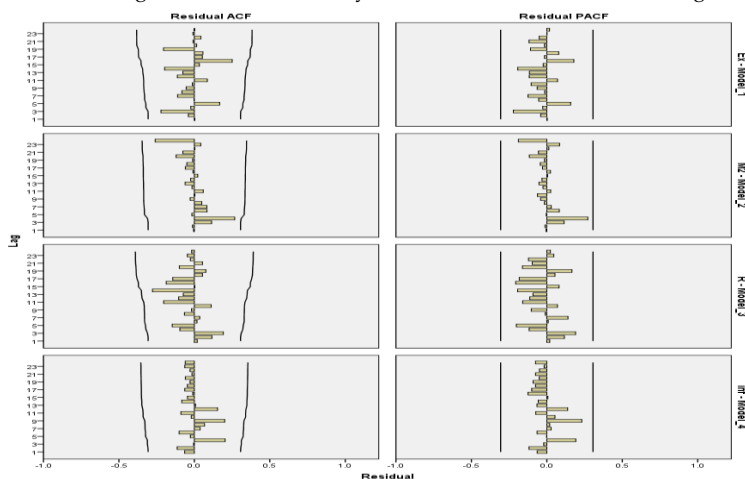
Figure 4. *Standard residual graph, the residual Autocorrelation function, and the ARIMA (2,1,1) model test indication*

Figure shows the results of the diagnosis of the estimated ARIMA models for time series, by plotting the propagation form of the standard residues for each model, drawing the self-correlation function (ACF) and the partial self-correlation function (PACF) for the remaining, as well as calculating the statistical significance of the Ljung-Box test (All graphs indicate that the standard residues randomly propagate around the zero line, as well as the self-correlation function because all the self-correlation coefficients do not differ from zero where all the coefficients fall within the critical lines, and finally it becomes clear through the forms that the calculated significance levels of the Ljung- test Box) are all greater than 0.05 as points spread away from the critical line of significance, and these results confirm the quality and relevance of the estimated ARIMA models for time series data.

We note from the drawing of the Autocorrelation and partial self-correlation of residuals of the model used that most of the values fall within the confidence limits and this indicates the randomness of the residuals and therefore the

model used (ARIMA 2,1,1) is an acceptable model that can be relied upon in analyzing and calculating future predictive values of the phenomenon according to Box-Jenkins multivariate methodology.

Forecasting stage

To know the pattern and behavior of the chain by substituting the current and past values of the dependent variable (Y_t) and the remaining (e_t) as estimated values of the error limit in order to obtain the first predicted value (Y_{t+1}) which is called prediction for one period and the future value (Y_{t+2}) can be obtained) By substituting the first future value (Y_{t+1}) in the prediction equation with the assumption that the error limit outside the sample of the function is zero, and so on until we reach the required period and there are some measures to test the prediction accuracy, including the Mean Absolute Error scale and the lower the scale value, the more accurate the prediction. The range of confidence to predict the multi-variable Box Jenkins methodology is based on consistent time variation. When using the estimated models (ARIMA2,1,1) in prediction, we obtain the predicted values shown in the table below.

Table 5. *Forecasted values for the exchange rate variable and the confidence intervals limits*

years	Confidence intervals for forecasting		Forecasted values
	Upper 95% Limit	Lower 95% Limit	
2019	7.1	3.9	5.5
2020	7.1	3.2	5.1
2021	7.0	2.8	4.9
2022	7.0	2.5	4.8
2023	7.1	2.5	4.8
2024	7.2	2.6	4.9
2025	7.5	2.9	5.2
2026	7.8	3.2	5.5
2027	8.2	3.5	5.9
2028	8.5	3.8	6.2
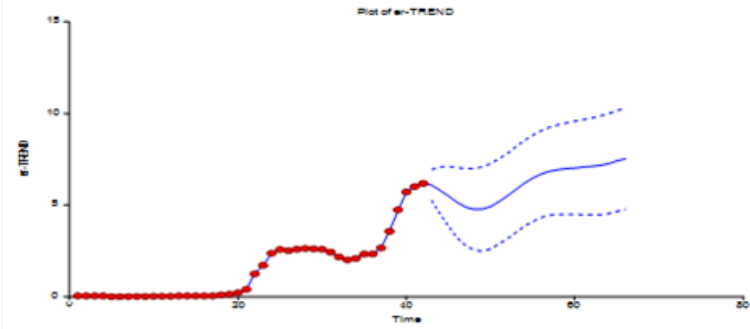
Figure 5. *Prediction pattern within the time series of the exchange rate variable*

Table 6. *Forecasted values for the Inflation rate variable and the confidence intervals limits*

years	Confidence intervals for forecasting		Forecasted
	Upper 95% Limit	Lower 95% Limit	values
2019	144.9	-94.8	25.0
2020	144.7	-95.7	24.5
2021	144.0	-96.6	23.7
2022	143.2	-97.6	22.8
2023	142.2	-98.7	21.8
2024	141.2	-99.8	20.7
2025	140.2	-100.9	19.6
2026	139.1	-102.0	18.6
2027	138.1	-103.1	17.5
2028	137.0	-104.2	16.4
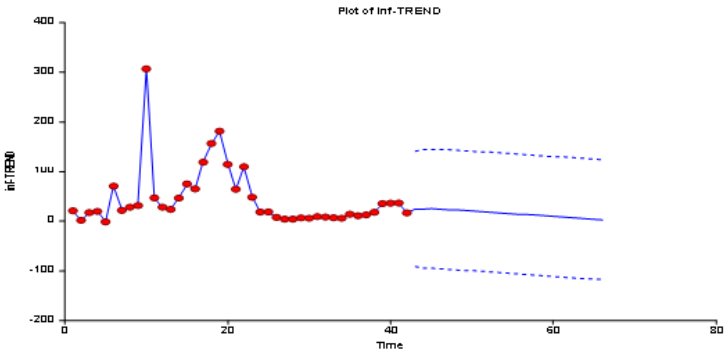
Figure 6. *Prediction pattern within the time series of the Inflation rate variable*

Table 7. *Forecasted values for the Money supply variable and the confidence intervals limits*

years	Confidence intervals for forecasting		Forecasted values
	Upper 95% Limit	Lower 95% Limit	
2019	192770.4	151210.6	171990.5
2020	223350.5	167967.1	195658.8
2021	256358.6	185295.4	220827.0
2022	292227.4	203511.5	247869.4
2023	331047.1	222625.1	276836.1
2024	373056.6	242760.3	307908.4
2025	418466.8	264004.4	341235.6
2026	467525.1	286464.6	376994.9
2027	520493.5	310248.7	415371.1
2028	577658.1	335473.2	456565.6
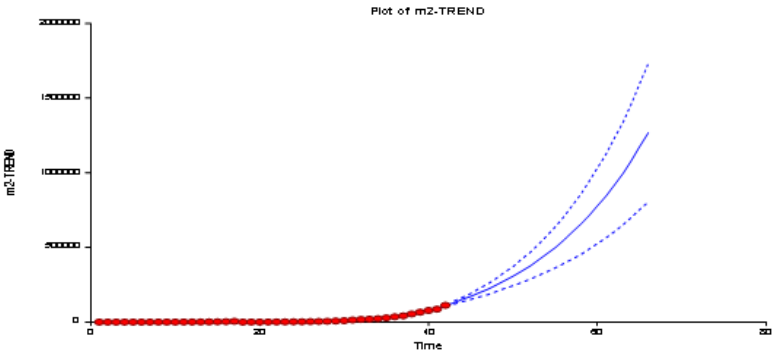
Figure 7. *Prediction pattern within the time series of the Money supply variable*

Table 8. *Forecasted values for the Foreign exchange reserves variable and the confidence intervals limits*

years	Confidence intervals for forecasting		Forecasted
	Upper 95% Limit	Lower 95% Limit	values
2019	33.1	5.1	19.1
2020	35.3	3.5	19.4
2021	37.4	2.1	19.7
2022	39.4	0.7	20.0
2023	41.2	-0.5	20.4
2024	43.0	-1.7	20.7
2025	44.6	-2.7	21.0
2026	46.2	-3.7	21.2
2027	47.8	-4.7	21.5
2028	49.3	-5.6	21.8
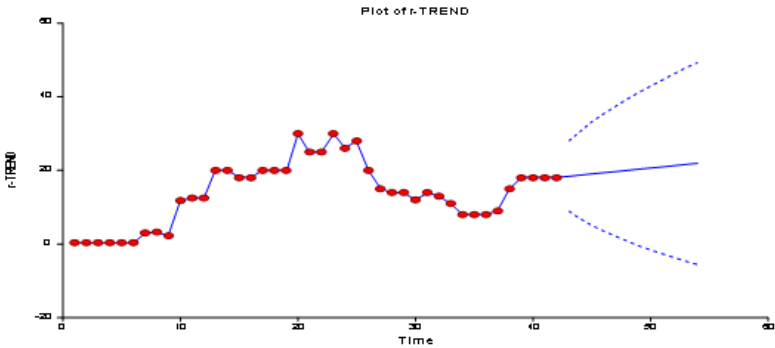
Figure 8. *Prediction pattern within the time series of the Foreign exchange reserves variable*

Conclusion

The fluctuations in exchange rates and the risks associated with them represent one of the most important problems facing financial and economic institutions of all kinds. Sudan has been facing decades of fluctuation in the exchange rate and defining the specific variables of this fluctuation. Using the multivariate Box-Jenkins methodology helps in estimating, analyzing and forecasting the movement of the exchange rate in Sudan and measuring the variables and economic indicators affecting it during the study period

(1975-2019). The Box-Jenkins methodology is a very important method for predicting the movement of economic variables by accompanying their determinants, with the need for a comprehensive statistical information system to apply quantitative models for prediction, while ensuring that frameworks are established in this field and the exploitation of scientific studies. The instability (and stillness) of time series of study variables is due to the presence of the random general trend and the nature of variables of macroeconomic indicators in their environment. There is a statistically significant (significant) relationship between the economic indicators used in forecasting (inflation rate, money supply and foreign exchange reserves) and the exchange rate variable according to the values of significant parameters of the parameters included in the complete model of the multi-variable Box-Jenkins method. The optimal study model is (ARIMA 2,1,1) according to the multi-variable Box-Jenkins methodology. The results of the prediction accuracy test showed the quality of the model for the selected prediction (ARIMA 2,1,1).

The study recommends working to find a database that meets the needs of all sections of the Ministry of Finance and National Economy and the research and statistics departments of the Central Bank of Sudan, as this base is the first nucleus for the prediction process. And the use of the Ministry of Finance and the Central Bank of Sudan scientific methods in the prediction process to obtain accurate scientific results close to the economic reality. And the need to give sufficient importance to statistical, standard and predictive studies in relation to the various economic and other phenomena, by establishing special units and departments, and taking their results very seriously, so that these studies do not only keep ink on paper. The economy sector (the Ministry of Finance and the Central Bank of Sudan) should use the ARIMA 2,1,1 model to predict the

future exchange rate while accompanying the economic indicators specified in the model.

Proposals and future studies

Through our study of this topic, we hope that we have been somewhat successful in its accomplishment, despite the difficulties that I encountered, but it may be just an attempt that may be right that needs to be added, or it is wrong that needs to be modified, and despite these difficulties this matter will open the door wide to me And for others to delve deeper into this type in future studies, which will be a starting point for new research and studies, among them we mention:

Using multivariate Box-Jenkins methodology models in predicting fluctuations in exchange rates in Sudan by entering two or more time series as fictitious (binary) dependent variables.

Compare other predictive methods with the multivariate Box-Jenkins model, such as ARIMAX models.

Comparison of prediction between multivariate Box-Jenkins methodology models and other models such as ARIMAX models and ARCH and GARCH models.

Compared to the prediction of quantitative methods in bringing about the reality of the Sudanese economy Rashid (time series hybrid chains and non-linear time).

Acknowledgement

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For Cited this Chapter:

3

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

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Collins **Chi Penn** [b]

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 continues to accumulate faster than the borrower's capacity to service it (Daseking, 2002).

In the 1980s Sub-Saharan Africa was caught in the trap of permanent borrowing (Raffinot, 1992). In fact, this part of the world has financing needs that are more than the internal saving capacity. The internal deficit financed by external funding is about 6%. That is historically a very high level

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(Jacquemot & Raffinot, 1993). Around the 1830s the United States of America received funding of about 1.6% of GNP and about 3% in the years 1866-1873 (Solomon, 1985). During the period of the Marshall plan, the contribution of the USA to Europe represented about 4% of the GNP (Gross National Product) of Europe as a whole (McKinnon, 1979).

Resorting to foreign capital can be beneficial if the income raised by the investments enable to cover the annual repayment of the capital and interests. However, in sub-Saharan Africa in most cases the borrowings are used for less or 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 than the returns from exports. This state of things explains at least partially 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 mostly chosen among countries which accumulate the highest amount of debts (World Bank, 1990): Mexico, Argentina, Brazil, Bolivia, etc. The arguments developed are seldom pertinent for sub-Saharan Africa with 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 favourable 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 organisations with a sharp increase in the proportion from multinational organisations 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 OCDE excluding commercial credit. This is contrary to the situation of Latin America where during the same period banks had 52% of current debts commercial 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 & Alii, 2001).

In a context of low valorisation of raw materials and high interest rates, most countries of sub-Saharan Africa have become insolvent debtors (Hugon, 1999). Rescheduling of credits and new credits so as to pay interests has lead 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 that most if not all the debt ratios were close or practically more than the critical level[2]. Countries most affected by this increase in debt were middle income countries because of the fall the prices of raw materials (Ivory Coast, Cameroon, Congo, Gabon) as well as heavily indebted poor countries (Senegal, Madagascar, 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 favour 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

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

capacity without any major economic and social sacrifice? In other to answer this question we are going to organise this study as follows. The first section will be based on the presentation of the theoretical approach of 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 the manner in which 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-Domar (1964) Tuna Mama (1998), Daseking (2002), 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 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 make the link between debt and future generations on 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 charges 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 dangers since debt can become uncontrollable. Especially when the repayment expenses increase public deficit which

in return could be funded by a new debt if 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):

$$B_t = D_t + B_{t-1} \qquad\qquad (1)$$
$$D_t = DP_t + rB_{t-1} \qquad\qquad (2)$$
$$D_t = G_t - T_t + rB_{t-1} \qquad\qquad (3)$$

Where
B_t = nominal current debt at the end of the peroid
D_t = total budget deficit for peroid t
DP_t = primary deficit (before payment of interest on public debt)
G_t = government expenditure
T_t = Taxes
R=interest rate on debt (r=INT/B_{t-1}, where INT represents the total interest paid for the period considered.

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 to 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 summarised 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 one hand the element due to primary deficit and one the other hand debts due to 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 (1994) demonstrated 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. In fact, if δ is the proportion chosen for D/Y, then β turns towards δ $(1 + y)/y$. As can be noticed the tendency does not depend on interest rate neither on the initial rate of indebtedness. This however difficult to put into practise 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 (that can be accompanied by a relative compression of expenses either by an increase in fiscal pressure) can be unrealistic. That is why despites the mathematical elegance of the demonstration of Domar (1944), other economists has proposed less dangerous behavioural 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

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

In case of the contrary, the debt/GDP ratio explodes only if a positive primary balance is realised at a break even point sp^* such that:

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

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

Within the restricted framework of the model that has just been used there are not other possibilities. However, if we extend the model Jacquemot & Raffinot (1993) 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 favour the stability of the debt ratio for two reasons: on 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 realised from primary expenditures (excluding the interest of the debt) to propose a version de of this model centred on the relation between repayment and fiscal pressure of the debt (by considering the repayment of capital). If one wants:

-maintain a constant relation between debt servicing and budgetary income (that is α), as well as the taxation pressure defined as the ratio of taxes to GDP that is (b);

-and borrow a fraction $¥\ of\ the\ GDP$ during the base year of the year in question by simple combination we obtain an evaluation of the growth rate necessary to repay the loan by leaving the parameters mentioned constant. This condition is written as (by noting A (t) the repayment annuity for a franc borrowed.

$$Y=(¥\,A(t)/b,\alpha)-1 \tag{6}$$

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 relief the burden of expenses on the future generation. This topic is not recent since it dates back from Smith (1776) and Ricardo (1818), but the theses of Buchanan (1958) and Barro (1984) re-launch 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 summarised 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 issue of transfer of the burden to the future generation is in the case where the loan is used to fund additional public expenditure for consumption.

(2) At the financial level, and as long as the debt is internal, the Keynesians and Lerner (1948) in particular refutes any additional burden on the future generation. At maturity, the repayment of the debt (or its conversion) simply implies a monetary transfer of citizens who do not have state obligations in favour 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) Buchanan (1958) on his part, rejects this traditional approach and explain the burden of 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 term, 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 consumer 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 leads 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 (Jacquemot & Raffinot, 1993). First, because it is no longer necessary for the state to have enough budgetary resources to ensure the servicing of external debts. It requires that the amount of servicing in national currency be converted into foreign currency and this no longer depends only on the state but on the functioning of the economy as a whole. Secondly, because 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 one hand the effects of foreign capital on the growth of an economy (Grinols & Bhagwati, 1976), and on the other hand the conditions of economic solvency of the economy (Abramovic, 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[3]: the debt can remain sustainable as long as the debtor rate of interest is less than the rate of growth of exports.

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

[3] Former Brazilian Minister of Finance

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 tend 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. A first period for the debt and the second for reimbursement. Cohen considers that the sanction for repayment default is a fraction of the wealth of the country in the second period (this sanction is as much as the wealth of the country). He than 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 honour 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 translated 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.

The specific nature of the external debt of Sub-Saharan Africa

The debt of sub-saharan Africa concerns only countries which have a weak repayment potential. That is why in comparison to the rest of the developed world the burden of the debt is more important. In 2002, according to the 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 favourable 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 favourable conditions. In 1980 more than half of the long-term debt was contacted from international financial organisations. 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 organisations with the increasing share of multinational organisations such as the World Bank whose loans can not be rescheduled.

On the contrary, commercial banks had only a small portion of the total external debt. Averagely 17% in the 1990s and according to OCDE. This is in contrary to 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 Ivory Coast, it was about 20%. But generally external debts of sub-Saharan Africa are usually contracted under favourable conditions.

The conditions of favourable 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 organisation of corporation and economic development (OCDE) 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 African borrowing sub of the Sahara 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 favourable character of these loans OCDE 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 favouring economic development, improvement in standard of living with favourable 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 Briton

woods system and the petroleum shock; macroeconomic determinants and the internal administrative deficiencies

The collapse of the Briton woods system and the first petroleum shock

When in the 1970s the crisis of the Briton woods system and the first petroleum shock lead 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 lead to the reinforcement of bank loans to third world countries which were often led 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 counselling. 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 countries 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 English rate. The mechanical increase in the service of the debt produced the financial asphyxia of the countries of the south. 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. She was rapidly followed by other countries of the third world (Zacharie & Varmaete, 2002).

Macroeconomic determinants

The relation between the degree of indebtedness and some economic variables has been an object of economic findings. 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:

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

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

Administrative deficiencies

One of the reasons for the appetite for indebtedness contracted in the 1970s and 1980s in sub-Sahara Africa is internal (Jacquemot & Raffinot, 1993). 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 centralisation of lending conventions is not assured. This type of disorganisation that was frequent during euphoria period on raw materials nevertheless ended due to pressure from international organisations or due to rigorous internal efforts. However, it was very costly for countries such as Congo Brazzaville who had to pay high charges for the survey of their external debts by foreign organisations.

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 bite by bite 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 the servicing 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 1980 to 2.5% in 1978 (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 highly resorted to internal debt. For example, Rwanda and the Democratic Republic of Congo (former Zaire). 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 afore mentioned policies were high discredit on the solvency of Sub-Saharan African economies. This state of affaires may make financial organisations 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 that 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 1995, 2000, 2002, 2004) 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 relaunched. 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, some strategies that reduce the constraints of indebtedness of Sub-Saharan African countries. The objective is to minimise 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 relative to regulatory and institutional norms, those relative 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 of 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 one hand and tax returns on the other. A coefficient that is equal to or greater than 1 characterises 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 tend to stabilise at level that is lower than the growth rate. On the contrary a slow economic growth is translated 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 (organisation 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 strategies of reduction of poverty 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 analysed with a lot of care, especially at the angel of their short- and long-term incidence on the budget of the state and on the balance of payment (Jacquemot & Raffinot, 1993). 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 necessitates the determination of the ex-ante capacity of international reimbursement. A pragmatic approach of 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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The effect of monetary and fiscal policy in achieving stability in the exchange rate in Sudan 1980-2019: Using the system of (Simultaneous equations)

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Introduction

Economics is a social science, related to man and nature on the one hand, and between human beings and human groups on the other hand, and therefore it is a science that is difficult to measure its phenomena precisely due to its intertwining, interdependence and change with each other, so each phenomenon may be a cause and may be a result at the same time, which is what made a difference The views of economic and standard schools on their interpretation over time. We are not surprised to hear in the future about new schools and economic and standard theories that come in line with the economic changes taking place in the world or the revival of old school ideas. Here, the resilience of the economy and its adaptation to events are

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highlighted .And economic stability occupies in general as the most important goal that the macro economy seeks to achieve, and stability in exchange rates in particular is of great importance in economic schools because of its impact on economic activity, and this importance has increased after the major economic crisis of 1929-1933 AD that ravaged the capitalist system and with which Muslim women fell Classical as the impossibility of permanent unemployment, the invisible hand-act mechanism, the neutral role of the state, and the rule of Say's Low in the market. These conditions led to the emergence of the Keynesian School to extract capitalism from this crisis, so that it would be popular with economists.

The reaction function of monetary and fiscal authorities is derived from the utility function of both authorities and the integration of the two policies in which contains their preferences on macroeconomic variables in particular, the stability of the exchange rate. However, the theoretical framework is not specific enough to serve as an econometric model. To develop econometric model, it is necessary to choose the relevant target variables for monetary and fiscal policy. Since monetary and fiscal policies are stabilization policy, we assume that Achieving Stability In The Exchange Rate are relevant targets of monetary and fiscal policies. Achieving economic stability, as a goal for every country in the developed and developing world alike, requires integration between the measures taken using the various tools of each of these three economic, financial and monetary policies. This integration forms among them a system whose parts harmonize and its components interact. Each tool affects and is influenced by other tools in a harmonious and balanced way in order to achieve the goal that society always seeks, which is economic stability. Within the framework of this study, systemic thought can be seen as a framework for analysis, measurement and planning that enables us to

progress towards the goals to be achieved and clarify the importance of complementarity, coordination and balanced interaction of the system of these various policies in order to achieve or support economic stability through the use of standard models.

The stability of the currency exchange rate is one of the priorities of monetary and financial policy in various countries, because this stability is a basis for providing the appropriate environment for investment, attracting savings and maintaining price stability, so most governments seek to adopt policies aimed at ensuring the stability of the exchange rate of their currency to spare their countries sharp fluctuations that Currency passes from one period to another, and this role grows in developing countries because most of these countries suffer from the openness of their economies significantly and a greater deficit in their balance of payments, which makes them more affected by international economic fluctuations, and more vulnerable to crises and external problems, which reflects negatively on the degree of stability Local where. Sudan has witnessed during the last four decades a significant deterioration in the value of the national currency and instability in the exchange rate and related policies. This has resulted in the asset value being eroded as a result of the continuous deterioration in the value of the Sudanese currency against the US dollar. The exchange rate is considered one of the most important tools of monetary policy because it affects and is affected by other economic indicators. In addition to being affected by the internal and external conditions, and as a result of the trade exchange of goods and services between countries, the concept of the exchange rate arose, so monetary authorities give great attention to exchange rate policies, especially countries that suffer from scarcity in their foreign currency resources, because the strength of economic stability of any

country is closely linked to the price of Exchange is the national currency against other currencies.

The monetary and financial policy is taking shape according to the economic interests and the goals that countries seek to achieve, and each country has used intermediate goals according to the type of shocks to which they are exposed. Sudanese, which is necessary to provide the appropriate environment for investment, in addition to reflecting the impact of that stability on mobilizing national savings and maintaining price and exchange rate stability. The objective of this paper is to Measurement The Effect Of Monetary And fiscal Policy In Achieving Stability In The Exchange Rate In Sudan 1980-2019: Using The System of (Simultaneous Equations). Furthermore, we want to study how we employ a Simultaneous Equations model to disentangle the effects of Monetary And fiscal Policy In Achieving Stability In The Exchange Rate In Sudan to measuring the interrelationships between study variables.

Literature review

The principal aim of (Economic policies) and fiscal and monetary policy is to reduce cyclical fluctuations in the economic cycle. Fiscal policy involves changing government spending and taxation. It involves a shift in the governments budget position. e.g. Expansionary fiscal policy involves tax cuts, higher government spending and a bigger budget deficit. Government spending is a component of AD. Monetary policy involves influencing the demand and supply of money, primarily through the use of interest rates. Monetary policy can also involve unorthodox policies such as open market operations and quantitative easing. Monetary policy is usually carried out by an independent Central Bank.

The continuous developments witnessed by Sudan in the past thirty years, especially when it comes to the emergence

of financial and economic crises and the exacerbation of some economic problems such as inflation and unemployment, the increasing volume of foreign debt, public debt service, the budget deficit, the imbalance of the balance of payments status and the fluctuation of the exchange rate. All of these imbalances affected the macroeconomic indicators and led to differing ideas. This resulted in the emergence of a new aspect of monetary and financial policy. This appearance has had a great impact on highlighting the increasing importance of the ability of monetary and financial authorities to influence the achievement of stability in the exchange rate, and here a major question arises. On the role and impact of monetary and financial policy tools applied during the period under study in achieving stability at the exchange rate in Sudan, has the monetary and financial authority managed, through its management of monetary and financial policy, to achieve optimum and acceptable levels in terms of achieving exchange rate stability, achieving economic stability and controlling structural imbalances A general economic balance?

The Bank of Sudan has applied the fixed exchange rate system since its rate was set in 1958 after Sudan joined the International Monetary Fund, and the country agreed with the fund to set the Sudanese pound exchange rate at $ 2.87. In August 1971 the pound was pegged to the US dollar. Since the beginning of the seventies, Sudan started using the policy of reducing the exchange rate as a tool for the external budget, in order to deteriorate the position of the balance of payments and the general scarcity of foreign exchange for large spending on development projects, which weakened the country's ability to import basic production inputs, which led to low production and productivity in all Economic sectors. Therefore, the system of multiplication of exchange rates was introduced for the first time in the

country. In addition to the official price, there was an encouraging price for some exports, an import tax, and an encouraging price for expatriate transfers, so that the actual price of the Sudanese pound became 2.5 dollars.

In light of Sudan's adoption of economic correction programs since 1992 AD, the Sudanese economy is witnessing important shifts in economic, monetary and financial policies, most of which were the abandonment of economic management by protection policies, and the promotion of openness to the outside by encouraging exports and the shift towards an open market economy directly, and these transformations have led To a series of effects. The significance of this study is summarized in the topic of the combined effect of basic factors of monetary and financial policy tools, technical factors are implied volatility, the moving average of exchange rates and the effect of this on economic stability and the stability of the Sudanese pound exchange rate.

Some studies present evidence of a weak nexus between the effect of monetary and fiscal policy in achieving stability in the exchange rate. For instance, (Ćorić, 2015), In this article we use a structural vector autoregression (VAR) model to analyse the possibilities of monetary and fiscal policy in achieving main economic policy goals, namely price stability and economic growth, in Croatia from 2004 to 2012. Our main results indicate that expansionary monetary and fiscal policies both have positive effects on economic activity. On the other hand, fiscal expansion leads to nominal exchange rate appreciation while monetary expansion has depreciation effects on nominal exchange rate. Thus the main conclusion of the article is that coordinated measures of monetary and fiscal policies could achieve both goals, i.e. that fiscal and monetary authorities can stimulate economic growth without endangering price stability. (Dodzi, 2014), The aims of this study were to examine the relative

importance of monetary policy and fiscal policy on economic growth in Ghana and then determine which of these two policies is more powerful in promoting economic growth in Ghana. The study period was from 1980 to 2012. The method of Ordinary Least Squares estimation technique was used in this study. The results obtained from the three multiple regressions were spurious free. The study revealed that monetary policy impacts on the Ghanaian economy positively. Also, the study found that fiscal policy affected the Ghanaian economy positively. Finally, the study revealed that monetary policy is more powerful in promoting economic growth in Ghana. The study recommends that monetary policies implemented by the Bank of Ghana should promote favorable investment atmosphere through appropriate stabilization of interest rates, lending rates, inflationary rates, and exchange rates to promote and ensure economic growth, economic stability, economic sustainability and economic development in Ghana. Cabrala (2015), Motivated by the recent experience of Greece and other relatively small European Monetary Union members, this paper examines the appeal of taking part in a large monetary union from the perspective of small open economies. We show that in the absence of fiscal policy considerations, taking part in a large monetary union is counterproductive for a small economy. Nevertheless, once the role of fiscal policy is properly incorporated, taking part in the monetary union becomes desirable from a social perspective. Following these results, we explore the prospects of engaging both economies in fiscal coordination and on how different schemes of policy synchronization can provide the grounds to make cooperation beneficial for the members of a monetary union. We find that when monetary and fiscal authorities cooperate and attempt to exploit externalities for their own benefit, a Pareto efficient outcome can be achieved if fiscal policy in the monetary union is

coordinated by a central authority and such authority acts as a the Stackelberg leader vis-à-vis the central bank. Our analysis suggests that this regime is superior to (i) a monetary union in which fiscal authorities conduct their policy in an independent or (ii) coordinated fashion, (iii) a regime where both authorities internalize the effects of their own externalities by allowing the central bank to act as Stackelberg leader and (iv) a regime in which the small open economy decides to stay out of the monetary union. Leith, (2017), We extend the fiscal theory of the price level (FTPL) by developing a two-country open economy model under flexible exchange rates, where overlapping generations of consumers supply labour to imperfectly competitive firms which change their prices infrequently. We show that the fiscal response required to support an active inflation-targeting monetary policy is greater when consumers have finite lives. Additionally, one monetary authority can abandon its active targeting of inflation to stabilise the debt of a fiscal authority, even if the policy makers operate in different countries. Finally, through simulations, we consider the impact of fiscal shocks on key macroeconomic variables (Mundell, 1968). This chapter deals with the problem of achieving internal stability and balance-of-payments equilibrium in a country that considers it inadvisable to alter the exchange rate or to impose trade controls. It is assumed that monetary and fiscal policy can be used as independent instruments to attain the two objectives if capital flows are responsive to interest-rate differentials, but it is concluded that it is a matter of extreme importance how the policies are paired with the objectives. Specifically, it is argued that monetary policy ought to be aimed at external objectives and fiscal policy at internal objectives, and that failure to follow this prescription can make the disequilibrium situation worse than before the policy changes were introduced. The practical implication of the

theory, when stabilization measures are limited to monetary policy and fiscal policy, is that a surplus country experiencing inflationary pressure should ease monetary conditions and raise taxes (or reduce government spending), and that a deficit country suffering from unemployment should tighten interest rates and lower taxes (or increase government spending).

Stabilization

To what extent are cyclical fluctuations "acceptable"? What is a "feasible" degree of stabilization? And what are "effective" stabilization tools?. These questions have long been debated by economists and – without surprise – the answers provided have changed considerably over time. Back in the 1960's, the heydays of Keynesian economics, economists spoke optimistically of an end to the business cycle. A book written in 1969 and titled 'Is the Business Cycle Obsolete?'(Bronfenbrenner, 1969) quotes Hyman P. Minsky, at the time a leading authority on monetary theory and financial institutions, saying: 'It was felt that if the policy prescription of the New Economics were applied, business cycles as they had been known would be a thing of the past' (p.vi). the question of whether reliance on self-stabilizing forces alone generates economic fluctuations of politically and economically acceptable magnitudes remains open. From a purely economic viewpoint, the optimal degree of stabilization depends on whether observed macroeconomic fluctuations constitute efficient responses of the economy to shocks or whether these fluctuations are partly due to economic frictions, to be addressed with the tools of stabilisation policy (Gramlich, 1971). In short, by maintaining a stable macroeconomic environment, economic policy (Monetary and fiscal for example) can thus contribute to economic growth and Achieving Stability In The Exchange Rate.

Economic policy effects with fixed exchange rates

Government policies work differently under a system of fixed exchange rates rather than floating rates. Monetary policy can lose its effectiveness whereas fiscal policy can become super effective. In addition, fixed exchange rates offer another policy option, namely, exchange rate policy. Even though a fixed exchange rate should mean the country keeps the rate fixed, sometimes countries periodically change their fixed rate. The economic policies used in Sudan to achieve stability in the exchange rate during the study period (1980-2019) were similar in terms of procedures and with a view to knowing the effectiveness of macroeconomic policies in narrowing the gap in the instability of the exchange rate in the Sudanese during the study period, we must address the economic monetary policies And Finance "and the exchange rate policies that were taken during the period to know the total economic policies followed during the study period (1980-2019), and to determine the effectiveness of these economic policies in dealing with volatility and instability of the exchange rate in Sudan (Saleh, 2005).

Monetary policy, fiscal policy: Overview

Monetary policy refers to central bank activities that are directed toward influencing the quantity of money and credit in an economy. By contrast, fiscal policy refers to the government's decisions about taxation and spending. Both monetary and fiscal policies are used to regulate economic activity over time. They can be used to accelerate growth when an economy starts to slow or to moderate growth and activity when an economy starts to overheat. In addition, fiscal policy can be used to redistribute income and wealth. The overarching goal of both monetary and fiscal policy is

normally the creation of an economic environment where growth is stable and positive and inflation is stable and low. Crucially, the aim is therefore to steer the underlying economy so that it does not experience economic booms that may be followed by extended periods of low or negative growth and high levels of unemployment. In such a stable economic environment, householders can feel secure in their consumption and saving decisions, while corporations can concentrate on their investment decisions, on making their regular coupon payments to their bond holders and on making profits for their shareholders. The challenges to achieving this overarching goal are many. Not only are economies frequently buffeted by shocks, but some economists believe that natural cycles in the economy also exist. Moreover, there are plenty of examples from history where government policies—either monetary, fiscal, or both—have exacerbated an economic expansion that eventually led to damaging consequences for the real economy, for financial markets, and for investors (Mundell, 2016).

Data, model and method

Data and empirical modeling

Data were collected the annual for study variables from central bank of sudan.

Methodology

A Simultaneous Equation Model (SEM) is a model in the form of a set of linear simultaneous equations. Where introductory regression analysis introduces models with a single equation (e.g. simple linear regression), SEM models have two or more equations. In a single-equation model, changes in the response variable (Y) happen because of changes in the explanatory variable (X); in an SEM model,

other Y variables are among the explanatory variables in each SEM equation. The system is jointly determined by the equations in the system; In other words, the system exhibits some type of simultaneity or "back and forth" causation between the X and Y variables (Arne, 2015).

Like this form:

$$EX = C_1 + C_2INF + C_3MS + C_4DOP + C_5F + C_6R + C_7X + C_8M + U_1$$

$$X = C_9 + C_{10}EX + C_{11}INF + C_{12}DOP + C_{13}XT + U_2$$

$$M = C_{14} + C_{15}EX + C_{16}MT + C_{17}GDP + C_{18}INF + C_{19}DOP + C_{20}LAGM + U_3$$

$$INF = C_{21} + C_{22}EX + C_{23}RGDP + C_{24}RMS + U_4$$

$$MS = + C_{25} + C_{26}EX + C_{27}INF + C_{28}GDP + U_5$$

$$R = C_{29} + C_{30}X + C_{31}F + C_{32}LAGR + U_6$$

Symbols indicate
EX= exchange rate
INF Inflation rate
F= Foreign capital flows
R= Foreign exchange reserve
X= exports
M= Imports
TX= Export tax
TM= Import Tax
DOP= Degree of openness
LAGX= Volume of exports in the previous year
LAGM= Volume of Imports in the previous year
LAGR= The volume of foreign exchange reserves in the previous year
GDP= growth rate
MS= money supply growth rate
MS= Money Supply
U_1 , U_2 , U_3 , U_4, U_6, U_5= Random variables

EX
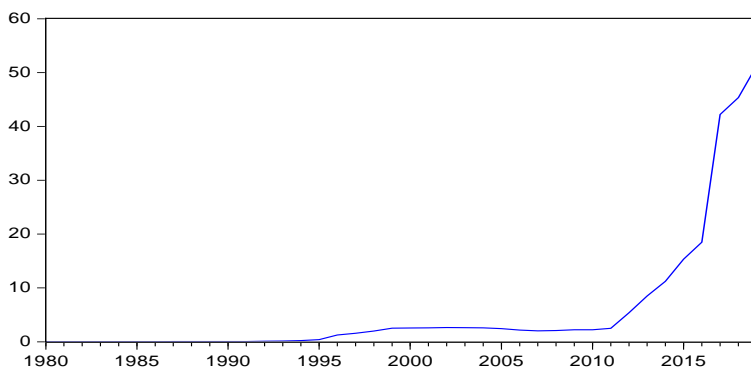
Figure 1. *Export*

Emipirical results and discussion

Unit root and co-integration tests

Before I proceed with the ARDL bounds test, I tested for the stationarity status of all variables to determine their order of integration. This is to ensure that the variables are not I(2) stationary so as to avoid spurious results. According to Ouattara (2004) in the presence of I(2) variables the computed F-statistics provided by Pesaran et al. (2001) are not valid because bounds test is based on the assumption that the variables are I(0) or I(1). Therefore, the implementation of unit root tests in the ARDL procedure might still be necessary in order to ensure that none of the variable is integrated of order 2 or beyond. I employed ADF dickey-fuller test to obtain the order of integration of each variable as results shown in Table (2).

Relying on the results of the conducted unit root tests, we conclude that the studied time series are of Same order of integration. According to the results of the ADF test, we have variables (GDP, FDI and Non-Oil Exports) stationary in the first difference I(0).

Table 1. *Results of Unit-Root Test (ADF) for all variables*

Variables	Type of test	Stationary of Variable	Statistical test	Significant Level 5%
ER	ADF	2ST Difference	-4.958428	-2.9705
INF	ADF	1ST Difference	-3.925437	-2.9665
GDP	ADF	1ST Difference	-4.004320	-2.9665
R	ADF	Level	-3.303830	-2.9627
F	ADF	1ST Difference	-3.527693	-2.9850
X	ADF	2ST Difference	-3.883549	-2.9705
M	ADF	1ST Difference	-3.363466	-2.9665
XT	ADF	Level	-3.036008	-2.9627
MT	ADF	1ST Difference	-4.293912	-2.9665
DOP	ADF	1ST Difference	-4.645840	-2.9665
M$_{-1}$	ADF	2ST Difference	-5.820281	-2.9750
X$_{-1}$	ADF	Level	3.440937	-2.9665
R$_{-1}$	ADF	Level	-3.508214	-2.9665
Ms	ADF	1ST Difference	-5.429115	-2.9665
RMS	ADF	1ST Difference	-6.662341	-2.9665
RGDP	PP	2ST Difference	-3.029412	-3.0114

Results of ADF, PP unit root tests shown in Table 1, indicate that the hypothesis that the time series al variables, are stationary in the level, first difference can be accepted. Relying on the results of the conducted unit root tests, we conclude that the studied time series are of same order of integration. According to the results of the ADF, PP tests, we have all variables (Non-Oil Exports, GDp and FDI) stationary in the first difference I(0). Has the order of integration I(1) based on the results of the ADF tests.

Table 2. *Johansen Cointegration Test for Unrestricted Cointegration Rank Test (Maximum Eigenvalue)*

Hypothesized	Critical Value (LR)	Statistic	Prob **
None **	124.24	307.3700	0.000
At most 1 **	94.15	175.2482	0.004
At most 2 **	68.52	87.66617	0.003
At most 3	47.21	39.28313	0.214
At most 4	29.68	10.31496	0.081
At most 5	15.41	1.679037	0.482
At most 6	3.76	0.568325	0.521

Notes: Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level; * denotes rejection of the hypothesis at the 0.05 level; **MacKinnon-Haug-Michelis (1999) p-values.

Table 2 shows the results of the Johansen's cointegration test. The results show that there is two cointegrating equation at 5% level of significance. Since there is two cointegrating equation as depicted in table 4, we have to determine this co-integrating relationship by computing the long run coefficients.

$$LEX_t = 2.751 - 0.0015\,LINF_t - 0.00842\,LR_t + 0.0147\,GDP_t - 0.2541\,LF_t$$

Summarises the estimated long run beta oefficients, t-statistics and p values for the long run relationship between LEXt, LINFt and LRt. A one unit increase in LXt will decrease LEXt by 0.000793 units, ceteris paribus. This can be rewritten as a 1% increase in Ft will decrease EXt by 0.000793%.

Estimation of simultaneous equations model system

The system of simultaneous equations represents the existence of the causal relationship in two directions from the independent variable to the dependent variable as well as from the dependent variable to the independent variable and this mutual effect makes the assumption that relates to the independence of the random variable from the independent variable is incorrect and thus the capabilities of the usual small squares are biased and inconsistent and therefore the presence of an effect Two-way in the function means in itself the necessity of having two equations or a set of equations to describe the relationship between two variables as the dependent variable in the first equation may exist within the group of independent variables in the second equation and on that it performs a dual role as it is the effect in the first equation and the influence in the second

equation and from Here the importance of the research highlights the estimation and clarification of the causal relationship between the economic variables of the Sudanese economy and the knowledge of the relationship between them through building and estimating a system of simultaneous equations for the exchange rate where the two-stage least squares method and the three-stage least squares method were used in the estimate and the Econometrics Program (E- Views[10]) to get results.

Table 3. *Estimation of simultaneous equations model system for study variables through the three-stage least squares method(3sls)*

Model		
Log(EX) = -7.76- 0.43*log(INF)+0.10*log(MS)+0.07*log(DOP)+0.64*log(F)- 0.43*log®-0.24*log(X)-0.08*log(M)		exchange rate
Std.Error = (0.68) (0.102) (0.06) (0.12) (0.13) (0.05) (005) (0.05)		
T-Test = (-11.41)** (-3.32)** (1.65)** (0.61)** (4.63)** (-7.99)* (-4.55)** (-1.45)*		
R² = 0.94 R⁻² = 0.93 D.W = 1.74		
Log(X) = 10.37 + 1.18*log(EX) +0.012*log(INF) + 0.58*log(DOP) +0.020*log(XT)		Volume of exports
Std.Error = (0.0366) (0.196) (2.43) (7.51) (0.003)		
T-Test = (0.606)* (0.124)** (0.162)** (0.070)** (0.090)**		
R² = 0.82 R⁻² = 0.80		
D.W = 1.89		
Log(M) = -1.01 – 0.04* log(EX)+0.01* log(MT) + 1.008* log(GDP)+0.0901+ log(INF)+1.01*log(DOP)		Volume of imports
Std.Error = (0.391) (0.040) (0.022) (0.037) (0.030) (0.021)		
T-Test = (-2.59)* (-1.22)** (0.877) (27.24)** (3.023)** (48.23)**		
R² = 0.91 R⁻² = 0.90		
D.W = 1.92		
Log(INF) = -0.24 – 0.08*log(EX) + 1.06*log(RGDP) +10.37*log(RMS)		Inflation rates
Std.Error = (0.052) (0.059) (0.146) (0.606)		

T-Test = (-4.55)**	(-1.45)**	(7.25)**	(17.11)**
R² = 0.67			R⁻² = 0.64
D.W = 1.70			

Log(MS) = − 0.69 −0.022*log(EX) −0.001*log(INF) + 0.92*log(GDP)				Money
Std.Error = (1.40) (0.17) (0.23) (0.104)				supply
T-Test = (-0.49)* (-0.13)** (-0.015)* (8.83)**				
R² = 0.96			R⁻² = 0.96	
D.W = 1.84				

Log(R) = −1.59 + 0.44*log(X) +0.29*log(F)			Foreign
Std.Error = (0.74) (0.17) (0.11)			exchange
T-Test = (-2.15)** (2.51)* (2.45)*			reserves
R² = 0.80		R⁻² = 0.77	
D.W = 2.08			

Notes: *,** Denotes rejection at 5% and 1% levels, respectively.

At this stage, the use of the (Log-Log function) but in a way 3sls and the results were close and were not identical with (semi Log function). The estimate was made for the purpose of comparison and the results were as follows, The results of the analysis of this stage showed a significant improvement in the model coefficients, a change in some of the feature signals, and the quality of the model in terms of determination coefficients (R^2) and modified determination coefficients (R^{-2}).

In the exchange rate equation for the cash flows of foreign capital, it has an effect on achieving stability at the exchange rate, and this result supports the objectives of the study related to the effect of monetary policy tools on achieving stability in exchange rates in Sudan. The degree of openness to the outside world affects the exchange rate and this effect supports the objectives of the study in the impact of monetary policy tools in achieving stability in exchange rates in Sudan. In the money supply equation it was found that the exchange rate had a clear effect on the money supply, and this result supports the objectives of the study, which is the mutual effect of monetary policy tools, the most

important of which is the amount of money offered by the banking system.

Evaluation of the parameters of the exchange rate equation

i.   The indication of the subjective capacity of the exchange rate is negative, meaning that the subjective capacity of the Sudanese pound exchange rate against the US dollar is negative, and this is a result of the continuous and accumulated deficit in the trade balance of Sudan.

ii.   The inflation rate coefficient signal in the exchange rate equation is negative, indicating the inverse relationship between the inflation rate and the exchange rate, and this is related to the reality of the situation in Sudan.

iii.   The capital flows coefficient indication in the exchange rate equation is positive for the direct relationship between capital flows and the exchange rate, and this is consistent with the operative theory of economic theory.

iv.   The reference to the coefficient of the volume of exports in the exchange rate equation is positive for the direct relationship between the coefficient of the volume of exports and the exchange rate, and this is consistent with the operative of economic theory.

v.   The reference to the volume of imports factor in the exchange rate equation is positive for the direct relationship between the volume factor of imports and the exchange rate, and this is consistent with the operative of economic theory.

vi.   The reference of the degree of openness to the outside world in the exchange rate equation is negative for the inverse relationship between the degree of openness in the outside world and the exchange rate, and this is consistent with the operative of economic theory.

Evaluating the parameters of the inflation rate equation

i.   The reference of the exchange rate coefficient in the inflation equation is negative, due to the policies followed by the Bank of Sudan and the Ministry of Finance, "The policy of curbing inflation".

ii.   The real GDP factor in the inflation rate equation is negative, indicating the inverse relationship between real GDP and inflation rates, and this is not consistent with the theory of inflation.

iii.   The real money supply signal in the inflation equation is positive, indicating the direct relationship between the real money supply and the rate of inflation, and this is consistent with the theory of inflation.

Evaluating the parameters of the export equation parameters

i.   The indication of the self-power factor of the volume of exports is positive, and this results from the non-diversification of exports and their restriction to primary exports.

ii.   The reference of the exchange rate factor in the volume of exports equation is positive for the direct relationship between the exchange rate and the volume of exports, and this corresponds to the reality of the situation in Sudan.

iii.   The reference of the inflation rates factor in the volume of exports equation is positive for the direct relationship between inflation rates and the volume of exports, and this is consistent with foreign trade theory.

iv.   A sign of the degree of openness to the outside world is positive in the equation of the volume of exports, and this is consistent with the operative theory of exports and foreign trade.

v.   The reference of the export tax price factor in the export volume equation is positive for the direct relationship between the export tax price and the volume of exports, and this is consistent with foreign trade theory.

Evaluating the signs of the import equation

i.   The coefficient of the constant parameter is negative and contradicts economic theory, and the amount represents the intrinsic power of the volume of imports.

ii.   The reference to the exchange rate coefficient is negative and it agrees with economic theory, which states that there is an inverse relationship between the exchange rate and the volume of imports.

iii.   The import tax index is positive, and it can be consistent with economic theory if goods are necessary.

iv.   The coefficient of the gross domestic product is positive, which is consistent with the economic theory, which states that there is a direct relationship between the gross domestic product and the volume of imports.

v.   The coefficient of inflation is positive, and it contradicts the economic theory, which states that there is an inverse relationship between inflation and the volume of imports.

vi.   The coefficient of the degree of openness to the outside world is positive, and it agrees with economic theory, which states that there is a direct relationship between the degree of openness to the outside world and the volume of imports.

Evaluating the parameters of the money supply equation

i.   The constant coefficient signal is the subjective ability to display money negative and less than the correct one.

ii.   The reference of the exchange rate factor in the money supply equation is negative for the inverse relationship between the exchange rate and money supply, and this is consistent with economic theory.

iii.   The inflation rate coefficient signal in the money supply equation is negative for the inverse relationship between inflation rates and money supply, and this is consistent with economic theory.

iv.   The coefficient of the gross domestic product is positive, and this is consistent with the logic of the economic theory, which states the relationship between GDP.

Evaluating the signal parameters of the reserve equation

i.   The signal of the auto capacity of the cash reserve is positive and greater than zero, and this supports the adoption of the result economically.

ii.   The foreign exchange reserve factor signal in the previous period has a positive indication because the foreign exchange reserve in Sudan is a commitment to pay interest of loans and foreign capital transfers, which supports the result economically.

iii.   The reference of the foreign capital flows coefficient in the reserve equation is positive, indicating the direct relationship between foreign capital flows and the reserve rate, and this supports the economic adoption of the result.

iv.   It was clear from the previous tables regarding the evaluation of the exchange rate model in Sudan during the study period in accordance with the economic standard "the standard of economic theory" that all information in place of the estimated values is consistent with the economic theory in terms of landmarks indications except for the constants that were contrary to the logic of the economic theory for each behavioral equation from equations Estimated form.

Table 4. *The White-and-Arch test of Heteroskedasticity*

Model	- statisticF	Prob of "F"	R^2	Prob of " R^2"
Exchange Rate	4.88	0.081	21.99	0.075
Volume of Exports	1.84	0.138	9.67	0.139
Volume of Imports	2.88	0.202	16.03	0.084
Inflation Rates	2.22	0.059	16.45	0.087
Money Supply	0.744	0.619	4.86	0.561
Foreign Exchange Reserves	0.761	0.571	3.468	0.482

From the above table, we notice that the level of significance of the test (F) for each of the six behavioral equations in the exchange rate model in Sudan is greater than (5%) and this indicates, according to White's test, that the complete logarithmic model does not suffer from the problem of difference in variance.

Conclusion

In the exchange rate equation for the cash flows of foreign capital, it has an effect on achieving stability at the exchange rate, and this result supports the objectives of the study related to the existence of an impact of monetary policy tools on achieving stability in exchange rates in Sudan. The degree of openness to the outside world affects the exchange rate and this effect supports the objectives of the study in the impact of monetary policy tools in achieving stability in exchange rates in Sudan .In the money supply equation it was found that the exchange rate had a clear effect on the money supply, and this result supports the objectives of the study, which is the mutual effect of monetary policy tools, the most important of which is the amount of money offered by the banking system.

These findings are strong evidence in support of research advocating a more tailore, country-specific set of macroeconomic policies for the relationship between Monetary And fiscal Policy tools and Exchange Rate. Additionally, we uncover substantial heterogeneity in terms of

interactions between our conditioning variables in each equation and institutional quality and Sudan- and time-specific effects. Is it well-known that neglected heterogeneity can lead to misleading inferences on the parameters of interest. Thus, our findings underscore the importance of accounting for different sources of heterogeneities in a flexible – rather than the traditionally ad hoc parametric – manner to obtain consistent and generally reliable results. In essence, our new-fangled semi parametric system of simultaneous equations model coupled with its instrument-based estimator seems appropriate for assessing empirically the types of interactions between Monetary And fiscal Policy tools and Exchange Rate.

In theory, Monetary And fiscal Policy tools can have positive, negative or no effect on Exchange Rate, and vice versa. If within a country Monetary And fiscal Policy has a positive effect on Exchange Rate and Exchange Rate has a positive effect on Monetary And fiscal Policy. Estimating the relations between variables through system equations takes into account the simultaneity of the variables and the estimation problems, offering the advantage of simultaneously estimating the coefficients from the system using its whole information. Another advantage of using SEM is the important economic background they have.

Acknowledgment

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5 The problematic of Africa's industrialization, the need for reformulation

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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 to it (Onudi, 1990; 1991).

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

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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 first part of the study presents the traditional paradigm of import substitution industrialisation (ISI) and its unfitness for Africa. The second 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.

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 resource 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) distinguishes two 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 inn 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. Three themes prevailed then (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 (Steel & Evans, 1984). 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 OMUDI and CEA[2]. 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

[2] 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

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 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, 1989). Among the most affected countries we have Benin, Ghana, Liberia, Madagascar, Mozambic, Tanzania, Togo and Zaire.

In some countries, the capacity of industrial production used fell below 30%[3]. 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 (Hugon, 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 (Oman, 1994).

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[3] 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 industrial dysfunction

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

- *the choice of economic policy*

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 mot 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 macroeconomic factors*

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 (Giri, 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 World Bank (1991) 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 economyand 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, theaptitude 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 Brander & Spencer (1983), 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: industrial economy*

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 (Kindlebergerand & 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

- *Regional integration*

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 reallymentioned 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 [4]. But as indicated by Mbonjo (1993) on the

[4] 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

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 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[5]. 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

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[5] 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, Bariatsaid 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.

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 (ADB, 1993).

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

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 (Harold, 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 Ille 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 gainfrom 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 Emmanuel (1982), 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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6 The struggles and constraints of competitiveness of small and medium entrepreneurs in the city of Dar es Salaam, Tanzania

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Introduction

The growth of the Africa economy has shown a remarkable achievement despite the global recession. Although the continent is on the course of achieving economic growth of around 4.5% this year, a rate higher than predicted for the mature economies of the world (Florida, 2005). Amazingly, this has shown a remarkable expansion against other economies such as the Eurozone crisis and the stagnation of wages in the West and a slowdown in China. Whilst other continents are struggling to boost their economies, for Africa there is something unique about what is happening on the continent now.

Despite all the efforts, the heart of the story is the boom in small and medium size enterprises (SMEs). Currently, these small and growing businesses create around 80% of the

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Africa region's employment, establishing a new middle class and fuelling demand for new goods and services. The scale of this transformation should not be underestimated. The IMF's Regional Economic Outlook for Sub-Saharan Africa, released in April 2015, says: "Over the next 20 years… sub-Saharan Africa will become the main source of new entrants in to the global labour force (Audretsch *et. al.*, 2012)." This is an emerging Africa that is absolutely determined to succeed. As a follow up to their bold commitment to infrastructure investment, African governments have now turned to entrepreneurs to support future growth.

Angola is a case in point. Its government and associated bodies have launched many initiatives over recent years to support entrepreneurs and the SME sector. Since last year, Angola's sovereign wealth fund (FSDEA) has been establishing a social impact platform, called *Kijinga*, which will support start-ups and the expansion of new products and services in the outskirts of its cities. Programmes such as these could transform the dreams of inexperienced entrepreneurs to develop successful businesses into reality. Initiatives such as these are spreading all over the continent, providing capital support and guidance on how to manage and grow businesses.

With all the efforts of transforming SME sector, Tanzania has created strategies for enabling entrepreneurs to acquire skills and technologies to increase its economy toward middle income country. This study, therefore will highlight the main initiatives of SMEs sector with main emphasis in the areas of small and medium scale entrepreneurs that will attract them to increase their income at the same time will create a chain of commodities for low income earners to buy products at an affordable price. In the long run, small and medium entrepreneurs will compete with other entrepreneurs in Dar es Salaam and other cities in the

country and regionally for increase of the GDPs of the country.

Photo 1. *(Courtesy of Zoom, Tanzania August, 2020).*

The recent experience in Tanzania reveals that activities with SME have also been rapidly emerging in the private, public and non-profit or social sectors over the last few years, and hence, interest in SME among researchers is starting to grow. It is furthermore believed that the existence of strong SE initiatives will generate and support radically new and effective ways of dealing with social problems and consequently promoting Small and Medium Enterprises (SMEs) development in the country (Olomi, 2006). It is estimated that about a third of the GDP in Tanzania originates from the SME sector. The International Finance Company (IFC) of the World Bank *estimates that* there are approximately 2.7 million enterprises in the country. A large majority of these (98%) are micro enterprises (employing less than 5 people). Though data on the SME sector are rather sketchy and unreliable, it is reflected already in the above data that SME sector plays a crucial role in the economy. This implies that if these enterprises get more support

through the initiatives of SE, the country's economy will grow significantly.

The economic distress of African cities may be one of the most pressing issues that face the nations. Lack of businesses and jobs in the disadvantaged urban areas give rise to social problems such as crime and drug abuse as well as fuel the crushing cycle of poverty (Gardine, 2005: 17). Moreover, the push factors are factors that compel a person, due to different reasons, to leave that place and go to some other place. The common push factors are low productivity, unemployment and underdevelopment, poor economic conditions, lack of opportunities for advancement, exhaustion of natural resources and natural calamities. The pull factors are factors which attract the migrants to an area. Opportunities for better employment, higher wages, facilities, better working conditions and attractive amenities are pull factors of an area (Kainth, 2009). The pull and push factors of rural and urban migration have forced the poor urban dwellers to resort to small-scale entrepreneurship, and Tanzania has been experiencing constraints and challenges in improving the competitiveness of Dar es Salaam city. This study still regards that both forces of pull and push factors could be used by competitive cities to encourage increase of income to the residence. Hence, more efforts need to be explored so as to aid Dar es Salaam city small entrepreneurs increase their income for livelihood.

In the past, the effectiveness of the small and medium entrepreneurs (SME) support institutions in Tanzania was severely hampered by the inadequate macroeconomic environment (Wangwe, 1999). After a successful stabilization of macroeconomic environment, it was expected that the effectiveness of the institutional frame work would improve as well, but this was not the case. The effectiveness of the support institutions seems to be minimal. This raises questions as to whether they have the capacity to deliver

adequate and relevant services sufficient and effective institutional framework for supporting the growth of SMEs.

The aim of this paper is to explore the empirical and theoretical literature on the constraints and challenges of the small scale entrepreneurs in Dar es Salaam city. The paper is divided into nine sections. The first section is the introduction and historical background of competitive cities and meaning of concepts. Section two covers the theory of competitive city, while section three discusses the empirical studies on the SMEs. Section four explores the Dar es Salaam city administration, strategies for strengthening competitiveness of the city, and ensuring Dar es Salaam city for all. Section five deals with the role of local leaders in creating a competitive Dar es Salaam city. The new tasks for Mayors and Directors are explored in section six. Section seven analyses the case study of the United States of America small entrepreneurs, whilst section eight points out to the Dar es Salaam city of tomorrow. The paper is concluded in section nine.

Historical background to the competitive city and small scale entrepreneurs

Small entrepreneurs

During the "roaring" 1920s, the President of the United States Calvin Coolidge declared that the "the business of America is business". Until the 1880s, the business of America was small business since virtually all businesses in the nation were small in those years (Scudamore, 2005: 93). Large-scale enterprises have eclipsed small business to a significant degree since then, of course, but the vast majority, almost 90 percent of American employers had fewer than 20 workers which are still small. Moreover, small businesses continue to have a strong hold on the American imagination. Businesses had no choice but to be small in America's early

days. Transportation was slow and inefficient, keeping markets too fragmente d to support large-scale enterprise (Schiffman, 2005: 58). Financial institutions also were too small to support big business. And productive capacity was limited because wind, water, and animal power were the only sources of energy. Whatever the reason businesses were small, Americans liked it that way. Small business, they believed, cultivates character and strengthens democracy. As Thomas Jefferson, the third president of the United States, put it, a nation of farmers and small businesspeople would avoid dependence, which "begets subservience and venality, suffocates the germ of virtue, and prepares fit tools for the designs of ambition" (Spruell & Johnson, 2005: 124).

The American belief in small business was put to the test beginning in the late 1800s. Where railroads, the telegraph, the development of steam engines, and rapid population growth all created conditions in which some businesses, especially capital-intensive ones such as primary metals, food processing, machinery-making, and chemicals could become bigger and, in the process, more efficient. Many people celebrated the higher wages and lower prices that came with large-scale enterprise, but others worried that the qualities Jefferson extolled might be lost in the process. "Even as they embraced what they viewed as the superior efficiency and productivity of big business, "wrote historian Mansel Blackford in *A History of Small Business in America*, "Americans continued to admire small Business people for their self-reliance and independence" (Schiffman, 2005).

Poverty is still a common phenomenon in both urban and rural areas in Tanzania. Kilindo *et. al.*, (2006) shows that some decades after independence, following a socialist period and various attempts at more market-oriented reform, Tanzania remains a country still struggling to find an effective development path. Although its economy has recorded impressive growth in the recent years, both

agriculture and manufacturing have lagged behind. The conditions for businesses are also not particularly good (ibid.). The National Strategy for Growth and Reduction of Poverty (NSGRP) has set targets to reduce income poverty in both rural and urban areas. For the urban areas the goal is to reduce the proportion of the population below the basic and food poverty lines from 25.8% and 13.2% in 2001 respectively to 12.9% and 6.6%, respectively by 2010.

To achieve these goals a broad range of actions in production and marketing were undertaken. The National Strategy for Growth and Reduction of Poverty (NSGRP) has indicated that the development of small and medium enterprises (SMEs) much of which are SMEs is one of the key strategies to attain the goals. Although the strategies have focused on studies on poverty reduction, studies by workers of Mnenwa & Maliti (2005) have indicated that broad-based MSEs development provides an effective means for both reducing poverty and accelerating economic growth. This is normally achieved not only by increasing incomes for entrepreneurs and but also by creating demand for non-tradable goods, namely services and local products through links with other sectors for creation of chain of products. It is this indirect effect on demand, and the associated employment creation in the small businesses in rural and urban areas, that appears to be the main contributing factor to the reduction of poverty (Mnenwa & Maliti, 2005).

Historical background of competitive cities

Competitive cities have grown from mere economies of scale where different types of activities transformed these cities. Here we see that most cities have a comparable mix of industries (high-end services, agriculture, manufacturing, and so on), regardless of which category they fall under. The study by Florida (2015) argues that most cities do not necessarily need to overhaul their economies, but instead to

improve and expand their existing structure. The real challenge for cities, then, is how to upgrade their economies from a market town to a production center, or from a production center to a financial and creative services industry.

Interestingly, the six cities that the report by Florida (2015) identifies as exemplifying global competitiveness are far from the usual suspects. They include Bucaramanga, Colombia; Coimbatore, India; Kigali, Rwanda; Changsha, China; Gaziantep, Turkey; and Tangier, Morocco. Despite many of them being landlocked or situated in relatively poor nations, these cities have made extraordinary strides in growing the income of their residents. Gaziantep, for example, has increased its GDP by producing 57 percent of all machine-made carpets. And in Tangier, the city has used its port to expand a number of industries such as chemicals, textiles, and mechanical engineering.

While the report takes pains to note that there is no silver bullet for urban competitiveness, it identifies some key factors and strategies that bear on it. The most competitive cities focus on higher-skill tradable industries, attracting foreign investment, creating new businesses, and growing their existing, already competitive firms (which usually has the biggest impact on job creation). They also have strong growth coalitions of elected leaders, civic officials, and the private sector. Most importantly, they have a clear strategy to exploit their competitive advantages. In Bucaramanga, Colombia, for instance, the city has used its oil revenues to invest in universities known for their research on the oil industry in turn generating technical skills and boosting human capital. It's this kind of creative and independent thinking that allows cities to do a lot with a limited amount of resources (Florida, 2015).

Cities become competitive through shared services and infrastructure, or other services that are provided in the

cities (Frost & Morner, 2005): in the reality of urban infrastructure, communications, and public services; access to natural resources and skills; location relative to markets; risk management; social capital; quality of life. These factors are not all present, and not to the same degree, in all cities, especially in the developing world. Governments and private businesses alike must understand better the importance of these factors to economic development to compete in the globalizing economy, grow sustainably, and reap other benefits.

In this regard Singapore is an example of one of the most competitive cities in Asia and in the world. Many, many other cities want to be the next Singapore. In fact, Singapore has been so successful that some believe that its success cannot be emulated. They forget that in the 1960s, Singapore faced several challenges such as high unemployment, a small domestic market, limited natural resources, not to mention that most of the population lived in overcrowded unsanitary conditions in slums. Challenges that would sound very familiar to a large number of cities in the developing world

Meaning of concepts
Competitiveness

The Oxford Compact English Dictionary defines competitiveness as "having a strong urge to win" (Oxford compact English Dictionary). When planners and consultants speak of competitiveness they tend to accept an externally defined goal of the competitive activity and orient all policies and resources toward meeting that objective. They tend to measure their performance against that of others and often generate a ranking system in which all of the participants are ranked, as in a horse race – there are win, place and show finishers, and one that is 'dead last' (United Nations Human Settlements Programme Nairobi, 2013).

Alternatively, if an entity exhibits a high degree of competitiveness we can also think that this entity can "play the game" with the best of them, but not necessarily beat the others. It has skill, plays hard and is respected by the others. It will make a good showing. Here competitiveness is a way of conducting one's activity, rather than just the result of that activity (United Nations Human Settlement Programe, 2013). This definition may be applicable to Tanzania as well. Cities can all increase their competitiveness at the same time, so that all cities and the national economy can simultaneously grow and benefit. This study concurs with the first definition as it is useful for the study.

Photo 2. *(Kariakoo DSM for the courtesy of Zoom, Tanzania June, 2019)*

Definition and nature of small scale entrepreneurs

Small and medium-sized enterprises (SMEs) are a very heterogeneous group. According to Ogechukwa (2011: 26) small scale business, small scale industries and small scale entrepreneurship are used interchangeably meaning a small scale industry firm. SMEs are found in a wide array of business activities, ranging from the single artisan producing agricultural implements for the village market, the coffee

shop at the corner, the internet café in a small town to a small sophisticated engineering or software firm selling in overseas markets and a medium-sized automotive parts manufacturer selling to multinational automakers in the domestic and foreign markets. The owners may or may not be poor; the firms operate in very different markets (urban, rural, local, national, regional and international); embody different levels of skills, capital, sophistication and growth orientation, and may be in the formal or the informal economy. This study defines SMEs as a group which is a mixture of self-employed and micro enterprises with less than 10 employees which are found in the informal sector.

What do we mean by a 'city'?

There are many definitions of a city. 'City' can refer to an administrative unit or a certain population density. A distinction is sometimes made between towns and cities – the former are smaller (e.g. between 10.000 and 50.000 inhabitants) and the latter larger (above 50.000 inhabitants) (European Union, 2011) . 'City' can also refer more generally to perceptions of an urban way of life and specific cultural or social features, as well as functional places of economic activity and exchange. 'City' may also refer to two different realities: the *de jure* city– the administrative city – and the *de facto* city – the larger socio-economic agglomeration. The *de jure* city corresponds to a large extent to the historic city with its clear borders for trade and defense and a well-defined city centre. The *de facto* city corresponds to physical or socio-economic realities which have been approached through either a morphological or a functional definition. A Morphological Urban Area (MUA) depicts the continuity of the built-up space with a defined level of density. A

Functional Urban Area (FUA)[2] can be described by its labour market basin and by the mobility patterns of commuters, and includes the wider urban system of nearby towns and villages that are highly economically and socially dependent on a major urban centre.[3]

In Africa, cities are source of creativity and technology and they are engines for economic growth. However, they are also source of poverty, inequality and health hazards from social and physical environment (City profile of Dar es Salaam, 2004). New cities were also established in the post-colonial period, but not for the same reasons as in the colonial period. The seaport Tema in Ghana was built awaiting great industrial growth. Later, new capitals were built, inspired by the planned city of Brasília in Brazil (Areal, 2003). This happened in Malawi (Lilongwe), Côte d'Ivoire (Yamoussoukro) and Nigeria (Abuja) (Stock, 1995; Ogechukwu, 2011). The new capitals were meant to give the nation a 'fresh start', they were supposed to be the beginning of a new golden future promised by the liberation politicians.

Fundamentally, I also need to ask what a city is. It's a place to live, which means somewhere to grow, to develop and to enjoy. But it's also a place to work, to educate, to socialise and to relax. My focus is, of course, on these aspects, but history teaches us that the construction of many old cities was motivated by fear and the search for protection. All these trends influence the development of a modern city. Cities aim to provide a warm atmosphere, welcoming people to stay, enjoy themselves and in doing so

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[2] An alternative but similar concept is 'metropolitan areas' – cf. Opinion of European Economic and Social Committee, *European metropolitan areas: socio-economic implications for Europe's future*, rapporteur: Joost van Iersel, April 2007.

[3] Tosics, Ivan, *Cities of tomorrow* issue paper, January 2011 – reference to ESPON 1.4.3 study (ESPON, 2007).

spend their money. At the same time social disunity, crime and poverty cannot be ignored. These factors motivate the ongoing struggle for the city that improves people's lives and meets their needs in all areas of life as pointed out in the study of competitive cities by Prize waterhouse Coopers in 2005.

Theory of competitive city

Porter's theory of the competitive advantage of clusters

Porter (1980) began by exploring techniques to analyze industries and competitors and to develop strategies for achieving competitive advantage. The strategies were based on an understanding of the four forces driving industrial competitiveness such as potential entrants, buyers, suppliers, and industry competitors resulting in the concept of internal and external environmental analysis. The environment in Porter's model was the economic and business environment, given his realization that the study of companies and industries alone was insufficient to explain competitive advantage. Further research on the competitiveness of global industries (Porter, 1985) and of nations (Porter 1990: 321) followed. Porter (1990: 321) introduces his diamond model of competitiveness. In Porter's model the following are the four broad determinants of the competitive environment for business:

• factor conditions such as skilled labor, resources, technology, and infrastructure;

• demand conditions such as local and overseas demand for products and services;

• related supporting industries, suppliers and distributors in support of the industry sectors or clusters; and

• firm strategy, structure, and rivalry conditions that govern how companies are created, organized, and managed, and the nature of domestic rivalry.

These four elements, according to Porter (1990: 321), are part of a system that shapes the competitive elements of the strategy for gaining competitive advantage: These determinants individually, and as a system, create the context in which a nation's firms are born and compete: the availability of resources and skills necessary for competitive advantage in an industry; the information that shapes where opportunities are perceived and the directions in which resources and skills are deployed; the goals of the owners, managers and employees that are involved in and carry out competition; and most importantly the pressures on firms to invest and innovate. The determinants in the 'diamond' and interaction amongst them create the forces that shape the likelihood, direction and speed of improvement and innovation by a nation's firms in an industry.

Two other factors identified in the model affect competitive advantage: chance and government. Chance relates to events or occurrences that have little to do with the country's circumstances, but may be influenced by individuals, such as Microsoft's location in Seattle. Governments may aid competitive advantage through public policies that are favorable to investment and profit performance. Clustering competitive industries, for example, is important in creating rivalry and stimulating innovation. Porter theory for Dar es Salaam competitiveness lacks circumstances in which small entrepreneurs such as food vendors and vegetable sellers can which provide products at low cost and lack skills to be able to take part in competition with other businesses. Hence, other theories can be used in analyzing clusters such a (Delgado *et al.,* 2010: 497), economics (Glaeser, & Gottlieb, 2008: 157), firm size (Pull, 2003: 286), immigration (Hunt & Gauthier-Loiselle, 2010: 40),

and innovation (Kerr & Nanda, 2011: 89). The diamond model is a useful framework for strategic thinking about local economic development and has been widely applied in many countries to analyze clusters. The model can be used to identify the factors that underlie local competitiveness, analyze their interaction, and formulate strategies for regional economic and industry cluster development based on the identified elements of competitive advantage (Porter, 1990: 325). It is therefore important to use this diamond model theory for identification of competitive cities like Dar es Salaam.

Photo 3. *Zoom, Tanzania, August 2020.*

Emprical studies on small and medium scale entrepreneurs

A study in Tanzania by Mnenwa & Maliti (2005) argues that despite the role played by SMEs in poverty reduction, there are serious constraints limiting their growth and thus their contribution to poverty reduction. The most important constraints inhibiting the SMEs sector growth have always been non-conducive, non-transparent and complicated legal

and regulatory frameworks coupled with bureaucracy. Although these constraints are also faced by large firms, they affect SMEs more. Another constraint SMEs are facing is inadequate markets due to unstable market value chains and reliance on small and localised markets. Purchasing power is low, transport infrastructure poor, and most SMEs have limited knowledge of markets beyond their immediate locality. Productivity (including quality) is low, due to a variety of reasons, which include inadequate and outdated technology, low levels of technical and vocational skills, and weak business management capabilities. Competitiveness is therefore low, especially when comparing products imported from neighbouring countries and beyond. Most enterprises lack access to capital that would allow them to address some of these weaknesses.

Despite their existence, SMEs in Tanzania continue to weaken, raising questions as to whether the institutions have adequate capacity to support the SMEs. The major issue is that previous studies had focused on the identification of the institutional constraints facing SMEs without assessing the capacity of the support institutions and requirements and delivery systems of their services. Studies like one by Wangwe (1999), Lund *et al*., (2005), and Kimuyu (2002) have investigated the role of the institutions in promoting SMEs, but do not explain why the institutional framework for the promotion of SMEs is poorly integrated, or what constraints the SME support institutions themselves face. The quality of the institutional framework depends on the capacity of the players within it. It turns out therefore to be important to conduct a critical assessment of the capacity of the existing MSE support institutions so as to understand the factors underlying the dismal performance of the institutional framework for SMEs development. Though this study focuses on the constraints and challenges of the small scale enterprises, some of the causes of the dismal performance of

the SME support institutions could also be found in the demand side. Accordingly, their study was extended to include issues related to MSEs' service needs, awareness and utilization which are crucial for competitive study such as Dar es Salaam city.

Access to finance is necessary to create an economic environment that enables firms to grow and prosper. SMEs in developing countries, however, face significant barriers to finance. Financial constraints are higher in developing countries in general, but SMEs are particularly constrained by gaps in the financial system such as high administrative costs, high collateral requirements and lack of experience within financial intermediaries. Increased access to finance for SMEs can improve economic conditions in developing countries by fostering innovation, macro-economic resilience, and GDP growth (Peters & Fisher, 2002). Although SMEs can bring economic changes, the Tanzanian government need to have lay down strategies which will attract investment that will be useful for economic growth.

Accessibility to finance is one of the driving factors of an enabling economic environment. The World Bank and the International Finance Cooperation (IFC) rank economies according to their ease of doing business; in this framework, the ability for business to get credit is an important criterion (World Bank, IFC, 2011). The Global Entrepreneurship Monitor (GEM) Entrepreneurship Framework Condition also highlights entrepreneurial finance, defined as the availability of financial resources for SMEs in the form of debt and equity, as one of the key factors for stimulating and supporting entrepreneurial activity (GEM, 2010).

Access to finance helps all firms to grow and prosper. The important question to ask is how can SMEs access to financial assist in managing the business? The Investment Climate Surveys of the World Bank show that access to finance improves firm performance. It not only facilitates

market entry, growth of companies and risk reduction, but also promotes innovation and entrepreneurial activity (Klapper *et. al., 2006*). Furthermore, firms with greater access to capital are more able to exploit growth and investment opportunities (Beck *et. al., 2008*). In other words, aggregate economic performance will be improved by increasing the access to capital.

SMEs face disproportionate barriers to finance, especially in developing countries. SMEs face a financing gap**.** Financing for SMEs is limited, particularly when compared to commercial debt for large firms and microfinance. Often, the costs and risks of serving SMEs are perceived to be too high by commercial finance. Importantly, microfinance loans, on the other hand, are too small to meet SME capital needs (Beck *et. al., 2006*). For example, if a rural 10 coffee producer needs a loan of $300,000, the request may be too large for the local microfinance institution, but too small, risky and remote for commercial banks.

Increased access to finance will foster efficient growth in the SME sector as in the case of Dar es Salaam city. This is due to the fact that small firms face the challenge of lack of finance, but they receive a stronger boost in growth than large firms if financing is provided. Financing obstacles affect small firms more than large firms. Small firms not only report higher financing obstacles, but they are also more adversely affected by these obstacles. This might be due partly to a lack of other financing sources, and partly because it hinders SMEs from taking advantage of economies of scale (Stephan & Sharon, 2001).

Overview of the SMEs in the Tanzanian economy

The term small-medium entrepreneurs ("SMEs") is usually adopted to contrast this sector with large business

(Calcopietro & Massawe, 1999: 9). As a consequence of the co-existence in Tanzania of formal and informal activities, the SME sector is highly diverse, with structures, problems, growth potential and access to support differing widely between segments (Calcopietro & Massawe, 1999: 9). This situation is not exclusive for Tanzania. The various SME policies that already are in place in some Eastern and Southern African countries show similar patterns (ibid, 1999). The most important distinction found among SMEs is between survivalist activities, craft and microenterprises, small enterprises and medium-sized enterprises (Mnenwa & Maliti, 2005).

Photo 4. *Courtesy of Zoom Tanzania, LUXURY HR-Foam mattress, Ilala, Gerezani, Dar Es Salaam Tanzania, 30 Nov. 19.*

Dar es Salaam city administration

Dar es Salaam has a unique status, being the largest city of Tanzania and the center of government administration, industry, commerce and banking activities, despite of the government decision to move its capital to Dodoma (URT, 2004). Dar es Salaam is also the major port city of Tanzania.

It has more than 575 major industrial establishments, a central bank, commercial banks, foreign exchange bureaus, insurance companies (including one state-owned) and the Dar es Salaam Community Bank, a Microfinance Bank jointly started and owned by City Council and the five municipalities. Administratively, Dar es Salaam has a regional administration headed by the Dares Salaam Regional Commissioner. It also has a City Council administration headed by City Director. The city also has five Municipal Councils namely, Ilala, Kinondoni, Kigamboni, Ubungo and Temeke. The five Municipalities are also the five districts of Dar es Salaam Region.

The Mayor of Dar es Salaam holds an important position due to the unique status of Dar es Salaam metropolitan city. The Mayor is the head of the largest metropolitan centre in Tanzania which hosts the highest government offices including the head of state, ministries, foreign diplomatic missions and international organizations.

Dar es Salaam vision is to build a city with sustainable development, managed on the principles of good governance, where residents do not live in poverty and have decent standards of living and a city with a competitive environment which attracts investors (City Council of DSM, 2004).

Strategies for strengthening competitiveness of Dar es Salaam city

Despite the challenges presented by globalisation, economic restructuring and institutional change, Tanzanian cities have substantial economic, social and cultural assets and potential. Much remains to be done but already much has been achieved which can be built upon. Many of the factors which attract investment and people to particular places, the quality of labour, education and training, the

cultural, residential and physical environment, the planning and fiscal regimes, the communication and transportation infrastructure remain under the influence if not sole control of cities and the government. They can be affected by city policies, although increasingly in collaboration with other actors.

Dar es Salaam has many substantial cultural resources, which are increasingly the source of economic growth and job creation such as Msasani and Mwenge where Wamakonde residents are famous for their art in carving of sculptures. Mbagala area for example, has a large concentration of people from Mtwara, and Lindi (Calcopietro & Massawe, 1999: 64). Within many areas of the city there are flourishing neighbor hoods and communities with extensive levels of social capital which are the source of community empowerment. These communities offers entrepreneur skills in furniture, vehicles repair, and artisans in Gerezani area in Ilala municipality.

There are a number of areas where, directly or indirectly, the Dar es Salaam city has to adopt concrete measures to achieve its objectives in SME development, although many steps are to be taken by the private sector, NGOs and local authorities. Effective support will often require different programmes, tailor-made for specific SME target groups

Ensuring Dar es Salaam city for all

There is a rich and diverse cultural supply offered by both established art institutions and grass-roots artistic groups and movements. Culture is the way inhabitants 'live' their city: their use of public spaces, street art, gastronomy, community events, festivals, are all assets that contribute to a lively cultural life (Audretsch *et al.*, 2012: 382). It manifests itself in various forms, from creative use of public spaces to distinct urban furniture and street lighting. Cultural expression is encouraged. Within the creative city, culture is

mainstreamed into the provision of public services. Distinct urban design and labeling systems help identify places. The dominance of messages from the private sector (advertisement) is counterbalanced and replaced by the increased visibility of public and community amenities and services (Bagnasco, & Le Gales, 2000). Such visibility may benefit from unified urban orientation systems.

In the creative city, entrepreneurship by newcomers will been couraged not only as an economic resource but also asa cultural challenge, represented in social events, and in a constant political and cultural effort to weave links not only within communities, but also with the rest of the world (Audretsch *et al.,* 2012: 382).

Role of local leaders in creating a competitive Dar es Salaam city

Increasingly, attention is being given to the importance of the local business environment. It is at the local level that most SMEs come into direct contact with government bureaucracy. Local institutions and procedures can become another layer of bureaucratic burden, or they can facilitate and support SMEs as they navigate the regulatory framework (Ndanshau, 1999). Local leaders must encourage the expansion of business initiatives that contribute to improving environmental conditions at a local level.

In addition to low cost of doing business, market is one of the primary reasons for the mushrooming of SMEs in a given city. The population and the heavy traffic that the city generates draw businesses such as fast food establishments, which in turn lead to the setting up of branches of banking institutions. However, leaders in Dar es Salaam can increase their efforts in the establishment of the small scale entrepreneurs.

Local government plays a critical role in developing urban areas and enabling business environments. Private

sector enterprises first assess the ability of the local government to respond to short-lived as well as systemic issues before deciding to invest in a business in the locality. The initiatives comprises the governance structures and organizational arrangements that define the rules of engagement for business and economic development in specific jurisdictions. Enabling environments are shaped by public policies, rules, regulations, plans, standards, and other operating requirements set by governments, but especially by politics and leadership. Each requirement has some influence on local production systems and markets and on decisions made by businesses and investors. All local enabling environments are unique creations, but some will have a greater impact on stimulating economic development than others (Bannock, Gamser, & Juhlin 2005).

The tasks of mayors and directors of Dar es Salaam city in 21st century

Three of the paramount challenges for Dares-Salaam over the next ten years all derive from the projected expansion of the city: public transport, non-planned housing and solid waste management. The 100,000 cars in the city today, which already cause significant traffic jams, could rise to 500,000 in ten years. Unless properly managed, this volume of private cars will seriously impede the ability of the taxi-vans (daladalas) and buses to ferry people to and from work.

Photo 6. *Courtesy of teknokona, Tanzania Teknolojia UDRT Bus Project in Dar es Salaam, June 20, 2018.*

Today around 70% of Dar's inhabitants live in unplanned housing, much of it in poor condition and nearly all of it, unplumbed for solid waste, which creates serious health and environmental problems. Meeting the challenges Mayor s and Directors need to share a strong vision for their city which includes promoting transparency, integrity and inclusiveness in city governance, raising the physical standard of living for citizens and making Dar-es-Salaam an attractive and pleasant place in which to live and spend leisure time.

To try and lessen its dependence on diminishing central government resources, the government, along with a pool of development partners, has set up the Local Government Reform Project (LGRP). The project is searching for innovative ways of financing essential social services. To address the issue of the diffusion of management and decision making across the three municipalities, the LGRP is looking into ways of integrating some of their functions and making local government more inclusive by actively involving women's organisations, youth and other civil society organisations.

For public transport, Mayors has to come up with a masterful scheme. Borrowing from the experience of Dar es

Salaam friend of other cities, and working with minimal funds from the World Bank, Mayors need to make plans to install bus trains in the city. These will be cheap enough to discourage cars from the centre of town. The resulting decongestion of the city centre will allow other plans for the enhancement of city life, to go forward.

The City Council is taking a consultative approach to the problems of unplanned housing and slum clearance. While some of the international donors prefer the option of upgrading slum dwellings, the Mayor and Council need to initiate the construction of low-cost housing using private sector funds, offers a more sustainable solution and allows for the installation and monitoring of the infrastructure that will reduce environmental and health hazards in the future.

In the quest for appropriate environmental management systems, the Council should work closely with UN Habitat and the Safer Cities Programme, the Canadian-led, global network of city managers. Brokering public-private partnerships around solid and liquid waste disposal will remain a priority for the Council in the medium term. Priorities for the next decade:

• Aggregate the powers of the five municipal councils and the City Council for more coherent, transparent and decisive governance;
• Manage rural-urban migration through an inclusive system of governance and partnerships with NGOs, community-based organisations and the private sector;
• Mobilise the private sector to remove and reconstruct slums and install waste disposal systems; and
• Bring the Dar-es-Salaam Rapid Transport System (DART) to a successful conclusion and undertake related work to make life better for both inhabitants and tourists in the city centre. Mayor and the City Council will continue to consult with their peers in other cities around the world to find the

smartest and most appropriate solutions to assure Dar's quality of life for the next 10 years.

• Work closely with the municipalities to enable SMEs to have access to soft loans, places to undertake their work an provision of skill in order to do better in their work.

Local leaders in Dar es Salaam need to create one million of new jobs a year by supporting small scale entrepreneurs (PWC, 2005): 'To create a higher economic growth path, they will need to bring investments from 19 per cent of GDP to 28 per cent of GDP, and increase their exports of goods and services from $38 billion to $50 billion within two years. To achieve these objectives, government will provide the policy environment that will reduce the costs and risks of doing business and nurture Dar es Salaam competitive enterprises that will produce goods of high quality in a cost-efficient manner. It will also provide the marketing and logistical support to facilitate domestic and international trade and effect transfer of knowledge that will increase the productivity of our people' (Edmiston, 2007: 75).

Case study of Tanzania SMEs

The 1991 National Informal Sector Survey revealed that micro-enterprises employed about 20 percent of the total labour force in Tanzania. The 1996 NIGP -ESRF study on micro and small enterprises confirmed that there is high concentration in petty trade and commerce and that the informal sector and women are important actors among SMEs (Calcopietro & Massawe, 1999). Women are increasingly starting business enterprises, mostly in the urban areas, with the objective of raising income. Concerning the formal SME sector, the national industrial statistics only keep record of those firms employing more than 10 people, leaving unrecorded a large group of small companies.

The constraints that hampered the development of a vibrant SME sector in Tanzania can be summarized in five main categories according to this study: the macro-economic and policy environment; physical and technological infrastructure; the banking and finance structure; the legal and regulatory framework; and the marketing capabilities and associated linkages. Most of the existing literature on SMEs has emerged from supply-driven research focused on poverty alleviation, the informal sector and micro-enterprise development, employment generation, microfinance, etc. The study by Calcopietro & Massawe (1999) has contributed to a good understanding of the needs of informal sector activities and other emerging business in Tanzania. The missing component of the research agenda on SMEs is on the upper-scale of the sector. Very little exists in terms of opportunities for technology development, innovation, business incubation, innovative facilities to promote SME access to long-term finance, joint ventures with foreign firms, etc.

Dar es Salaam small entrepreneurship and small business has been on the increase since the economic hardships in the 1980s. In this decade most of the urban migrants to Dar es Salaam city embarked on small business, however, entrepreneurship and small business especially itinerant trading were evident even during colonial period. Hawking and peddling were, according to Leslie (1967) 'the standard expedients of those unable to find paid employment.'

The first major attempt to promote the small industries sector in Tanzania was undertaken in 1966 when the National Small Industries Corporation (NSIC) was formed under the National Development Corporation (NDC). The NSIC set up small industrial clusters, which were basically training cum production workshops. Thereafter, the Small Industries Development Organization (SIDO) was established in 1973 by Act of Parliament to plan, coordinate,

promote and offer every form of service to small industries (Calcopietro & Massawe, 1999).

SIDO remains the main government arm for promoting SMEs in the country. SIDO in collaboration with other stakeholders supported establishment of SME association to empower the private sector. Some of those associations include Tanzania Food Processors Association (TAFOPA), Tanzania Small Industries Organisation (TASISO) and 'Vikundi vya Biashara Ndogo' (VIBINDO). These associations have been useful in involving the members in all issues related to advocacy as well as accessibility to market, information, raw material, packaging and micro credit services (Calcopietro & Massawe, 1999).

Other initiatives/programmes have been also initiated by the government. Apart from SIDO, various institutions were established to support enterprise development in Tanzania. These institutions cater for the whole enterprise sector including SMEs. They include the Tanzania Industrial Research Development Organisation (TIRDO), which supports local raw materials utilisaltion; Centre for Agricultural Mechanization Rural Technology (CAMARTEC), which is involved in promotion of appropriate technology for rural development; Tanzania Engineering and Manufacturing Design Organisation (TEMDO) responsible for machine design; Tanzania Bureau of Standards (TBS) mandated to promote standards; Board of External Trade (BET), which is instrumental in promotion of exports mainly through trade fairs; and the Institute of Production Innovation (IPI), now known as Technology Transfer Centre, which is active in prototype development and promoting IPIs their commercialization (URT, 2003).

Another important programme is the Vocational Education and Training Act of 1994, which provides the framework for the vocational training system in Tanzania. This Act led to the formation of Vocational Education

Training Authority which has over 630 centres in the country offering training in more 34 different trades. In 1999, the University of Dar-es-Salaam established Entrepreneurship Development Centre within the Faculty of Commerce and Management. The Centre provides consultancy and training in SME related issues. Furthermore the College of Business Education offers business training including entrepreneurship development (URT, 2003).

A number of initiatives have been designed by the Government to set up funding mechanisms and schemes to address poverty and employment related problems through promoting SMEs. Such funds include National Entrepreneurship Development Fund (NEDF), Youth Development Fund (YDF), which is managed by the Ministry of Labour, Youth Development and Sports and the Women Development Fund (WDF) that is managed by the Ministry of Community Development and Women Affairs and Children. Apart from these, there are other related programmes that were established through Government/ donor joint efforts including the Small Entrepreneurs Loan Facility (SELF), National Income Generating Programme (NIGP), Presidential Trust Fund and Community Development Trust Fund. Another initiative towards this direction has been the establishment of the National Micro-finance Bank (NMB), meant to cater specifically for micro enterprises (URT, 2003).

Microfinance institutions operating in Tanzania provide financial services to the SMEs mainly in the form of micro credit with an exception of cooperative based microfinance institutions, which are predominantly savings based. The main microfinance institutions can be categorized as non-governmental organizations (NGOs), Cooperative based institutions, namely SACCOS and SACCA's while the third category is banks. The major players in the NGOs category include PRIDE Tanzania, FINCA (Tanzania), Small

Enterprise Development Agency (SEDA) and Presidential Trust for Self-Reliance (PTF). Others, which are relatively smaller in size, include Small Industries Development Organization (SIDO), YOSEFO, SELFINA, Tanzania Gatsby Trust, Poverty Africa and the Zanzibar based Women Development Trust Fund and Mfuko. There rest consists of very tiny programmes scattered throughout the country mainly in the form of community based organizations (CBOs). Banks that are actively involved in microfinance services delivery include the National Microfinance Bank (NMB), CRDB bank, Akiba Commercial Bank (ACB) and a few community/regional banks namely, Dar es Salaam Community Bank, Mwanga Community Bank, Mufindi Community bank, Kilimanjaro Cooperative Bank, Mbinga Community Bank and Kagera Cooperative Bank.

Former President Jakaya Kikwete made many promises to small working groups and other business enterprises that his government would empower them by giving micro credit facilities such as (*Mamilioni ya Jakaya*) to run up their businesses (Onyango, 2010). He also made promises to many small scale organizations who toils to gain their livelihood for a token f of USD 1 per day, that his government would improve their life standards. Under his newly introduced slogan that is aimed to achieve development targets by applying new strength, new vigor and with much faster pace for the attainment of the social and economic goals, the President also urged the working groups in the country to work in order to achieve their targets. Among the lowest working class in the community the president had promised to improve their lives, were the petty traders commonly known as *machinga* who he promised would be given created for good business environment. Better working environment was a major focus in line by the government to relieve their worries (Onyango, 2010).

Photo 6. *Machingas, in the courtesy of Zoom, Tanzania, Aug. 2020.*

In a move to implement the government's plans, the Dar es Salaam City Council (DCC) had initiated a major development project that would help few business member groups to fulfill their objectives into solving out their woes. To practice its move, the DCC built a business park with a view to accommodate the needs of few or many petty traders in the city of Dar es Salaam. A year has now passed since the construction of the business park known as "Machinga Complex" project with three units each with four storey was completed, but to the great surprise, one can see from far a distance floors of the buildings are empty and never occupied for business.

Machinga Complex was designed by the DCC for specific registered trade organizations of the petty traders who are recognized by a supreme group name known as VIBINDO who operates within the city of Dar es Salaam. The groups had earlier been promised by the City Directors to have such a state-of-the-art building of their own in a bid to improve their businesses and earn a better life standards like other business people in the country. But to the great dismay, most traders are surprised to have seen that the delays in opening the complex has taken so many days (Daily Newspaper 8 August 2013). Some say the arrangement might have some

political agenda behind the whole exercise. This is because they could see no action is being taken in order to clear out their worries. As a result most of them are desperate over what they think might have been perpetrated by corruption an aspect which has driven them into such an extreme bearing in mind that none of them has yet acquired a space to trade within the complex (Onyango, 2010).

Dar es Salaam city of tomorrow

Local leaders in Dar es Salaam need to create one million of new jobs a year by supporting small scale entrepreneurs (PWC, 2005): 'To create a higher economic growth path, they will need to bring investments from 19 per cent of GDP to 28 per cent of GDP, and increase their exports of goods and services from $38 billion to $50 billion within two years. To achieve these objectives, government will provide the policy environment that will reduce the costs and risks of doing business and nurture Dar es Salaam competitive enterprises that will produce goods of high quality in a cost-efficient manner. It will also provide the marketing and logistical support to facilitate domestic and international trade and effect transfer of knowledge that will increase the productivity of our people' (Edmiston, 2007: 75).

It is therefore, envisaged by the leaders in Dar es Salaam that there is good infrastructure in water and electricity supply systems which will continue to boost factory production. In general, the manufacturing sector targets primarily the domestic markets with more exports of manufactured goods, for which most industries are concentrated in Dar es Salaam. However, these industries will compete with other industries In Tanzania as well as in the East Africa (Audretsch *et. al.*, 2012).

In the case of collection of revenues, there will be a reduction on the cost of doing business or broad transactional costs which includes not only the money cost,

but also the time spent to comply with rules and regulations, which determines the entrepreneur's opportunity cost of doing business by medium and small-sized entrepreneurs as this study found out.

Conclusion

A key question for Dar es Salaam city is the extent to which it can improve its relative performance in relation to other cities such as Arusha, Mbeya and Nairobi, in relation to competitiveness. This study will articulate issues that there are structural characteristics of competitiveness, which are acquired over a long period of time and not lost quickly. The cities, which performed well a decade ago and were well regarded by the private sector as places to do business, still head the league (Chloe & Roberts, 2011). Physical and strategic renewal has changed its internal and external image. Improving of the areas the renaissance features of the city has made it more likely that it will be able to achieve greater long-term economic competitiveness by attracting investment and by improving its skill base. Dar es Salaam City Mayor and other actors of development need to lay down strategies that will improve the city's competitiveness.

Increasing immigration flows, an ageing population, a multiplication of real and virtual communities, and increasing economic, social and spatial segregation may lead to fragmentation of cities with isolated local communities, a loss of social cohesion and the formation of ghettos of all forms, both rich and poor (Katuli, 2002). The challenge for the Dar es Salaam city of tomorrow lies in enabling SMEs to increase revenue to the country as well income for their households and make Dar es Salaam a good place to live.

Although successful integration of communication is dependent on national policies and regulation, cities have a key role to play in countering the impacts and stimulating the positive effects to fully exploit the potential creativity

and innovation that may stem from diversity (Chatterji & Seamans, 2012). There are strong links to be exploited between the diversity and social and territorial cohesion of a city and its economic competitiveness and attractiveness (European Union, 2011). Cooperation across ethnic, socio-professional and socio-cultural boundaries, as well as across territorial boundaries within cities, needs to be encouraged (Chatterji & Seamans, 2012: 183). Social initiatives are needed to improve social relations and improve access to the potential opportunities of a diverse city, in order to avoid Dar es Salaam City to decay.

This suggests two things, first increased income inequality among Dar es Salaam residents and increased unemployment, poor living conditions and inaccessibility to health and water facilities and services. Reduced budget on health, water and education coupled with increased population may explain the deteriorating trend in Dar es Salaam (Kinabo, 2003).

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