Causal Analyses: Debt and Structural Adjustment Programme.

By
John Pastor Ansah
University of Bergen, Norway, Bergen
Faculty of Social Sciences, the System Dynamics Group
Postal address: Fantoft studentboliger
Post Office Box 752
5075 Bergen, Norway
Email: John.Ansah@student.uib.no
pastorkobina@yahoo.com
Phone: +47 92439011

Abstract
The impact of structural adjustment programme on the economic situation in many African countries can not be overemphasised. Over more than a decade of implementing neo-liberal economic policies by the Bretton Woods institution it is of great importance to document the lessons learnt. This paper explains how the expected effect of structural adjustment policies produced unintended effects which cut back the gains of the programme. Using causal analyses, the assumptions and hypotheses implicit in the six main structural adjustment policies are clearly elicited with a causal loop diagram. The paper concludes, though structural adjustment programme was not a complete failure, the policies generally did not deliver the expected promises due to lack of systematic analyses and understanding of the policy responses by stakeholders.

Keywords: Structural Adjustment Programme, Debt, Causal loop, IMF, World Bank

1.0 Introduction

The neo-liberal policies as utilised by the International Monetary Fund (IMF) in its dealings with countries of the developing world, tend to facilitate the conditions for financial crises. This can be traced by examining the economic crises of Mexico in 1982, Asia in 1997 and Africa in the late 1990s. It is evident that the financial vulnerability that these countries suffered from existed due to, and not in spite of, these policy prescriptions (Apps 2002). The IMF continues to present these policies as proven success, a view this paper contests.

That Africa is undergoing major debt crises is not in doubt. What is in debate among researchers and scholars are the exact causes of the problem and the best solution to adopt in overcoming the debt crises (Olusanya G.O and Olukoshi 1989). Understanding the main causes of debt crises in Africa is as important as finding solutions to overcome the crises. This paper adopts a descriptive approach of the system dynamics methodology of problem presentation to explain how the expected effect of structural adjustment policies produced unintended effects which cut back the gains of the programme. Using causal analyses, the assumptions and hypotheses implicit in the six main structural adjustment policies are clearly elicited with a causal loop diagram. The use of causal analyses helps in conceptualising and communicating the structure that govern the debt dynamics and capture a possible hypothesis about the debt problem and how structural adjustment policies intend to facilitate exit from the debt trap. Many people find causal analysis with causal loop diagrams helpful even without simulation, others feel causal loop diagrams can be harmful if done in isolation without simulation. While accepting the argument of the latter, this paper serves as an introduction to the concept and logic underpinning the Structural Adjustment Programme (SAP[1]). Because there is no simulation with the causal analyses in this paper, causation will be carefully interpreted without being judgemental on the strength of one variable on the other.

The analysis of the debt crises will be limited to SAP a brain child of the IMF and the World Bank. In the early 1980s, countries in Africa were subjected to SAP with the aim of seeking to address a wider range of obstacles to growth, and the increasing debt stock. The structural adjustment programme consists of two parts;

1. Stabilisation - shorter-term measures and
2. Adjustment measures - Longer-term measures.

Stabilisation measures are primarily designed to reduce short term imbalances between demand and supply, which are normally manifest in balance of payment and budget deficits. Adjustments measures seek to address a wider range of obstacles to growth, many of them limiting the ability of the economy to increase supply (Konadu-Agyemang 2001).

[1] Structural adjusment programme

1.1 Structural Adjustment

From the perspective of the Bretton Woods Institutions, and other supporters of structural adjustment programs, the problems of underdevelopment and inefficiencies in the developing countries are primarily generated and sustained by internal factors. These factors such as state interference in the working of the price mechanisms, over bloated public service, exchange controls, corruption, state ownership of manufacturing enterprises and investment in social services only serve to clog the wheels of efficiency (Konadu-Agyemang 2001). This ills pertaining in the developing countries were intended to be address by the policies contained in the SAP. There are six main adjustment policies that are identified among all adjustment programmes. These policies are:

1. trade liberalisation policy
2. privatisation policy
3. financial liberalisation policy
4. public expenditure reform policy
5. industrial reform policy
6. agricultural reform policy

Addressing the problem of high and increasing debt stock, SAP adopted immediate measures such as debt and interest payment rescheduling and granting of loans from IMF and World Bank to pay debt owned to the private financial market with less interest rate.

2.0 Causal Analysis

In trying to make sense of the plausible connection between structural adjustment programme and unsustainable debt in Africa, the notion of cause and effect are important tools to use. Regularities observed in the flow of events are interpreted as a result of a prior event influencing a latter (Hellevik 1995). The use of causal analysis to understand SAP polices and its impact on debt crises prompts to elicit embedded assumptions and wisdom underlying the policies and reforms introduced. Causal analysis helps to capture and structure the theoretical underpinning of SAP in a systematic and diagrammatic, rather than in linear or statement form. This approach of putting together the logic behind SAP enhances the debate about the validity of the assumptions and how realistic they are given the situations prevailing in the adjusted countries.

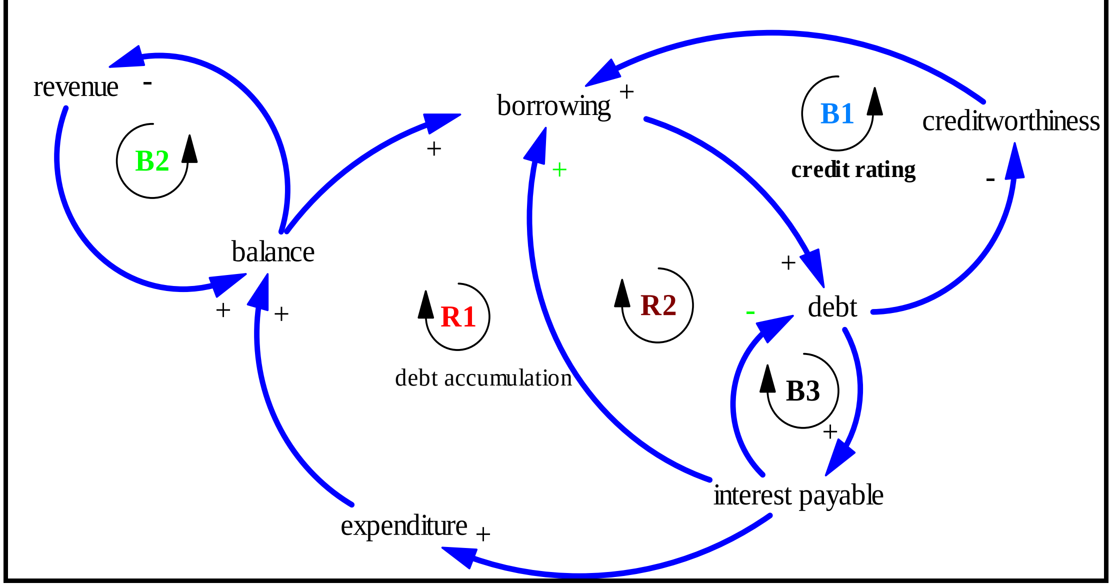
Causal loop diagram is the tool used in this causal analysis. A causal loop diagram is important system thinking tool used to represent the feedback structure of system. The diagram consisting of arrows shows how one variable affect another. The causal analysis illustrates the hypothesis of the cause and effect of SAP policies and how it impact on debt.

Note: the causal loops with **blue arrow** indicate the intended effect of the policy. On the other hand, the causal loops with **red arrow** shows the unintended effect of the policy.

2.1Debt Accumulation

The causal loop diagram below shows the conceptual model of accumulation of debt in the reinforcing loop (R1). Debt is built-up through borrowing and accrual of interests. As Debt increases, service of debt consisting of the amount borrowed and interests, rises. These invariably increase the government expenditure which draws down the government money balance, which in effect necessitates the need for borrowing. In the other reinforcing loop (R2), an increase in borrowing will increase the debt, which will subsequently increase the interest payment on the debt. As interest payment increase money is borrowed to service the debt which in turn increases the debt. The two reinforcing loops (R1, R2) are the simple positive feedback loops, portraying the driver behind the exponential growth of debt stock.

figure 2: debt accumulation



The debt growth depicted by the causal loops, however, contained several negative feedback loops striving to balance revenue with expenditure. From the causal loop diagram, increase in borrowing increases debt to a level which in turn reduces the creditworthiness and the amount of borrowing (B1). Loop (B1) was particularly effective in the private financial market. Due to poor credit rating, most of the borrowings in countries implementing SAP are multi-lateral and bi-lateral loans. An increase in revenue increases money balance above what it would have been which may call for populist measures that will reduce revenue through tax cuts (B2). Moreover, payment of interest and principal amount borrowed decreased debt, which limits the interest payment in the following years (B3).

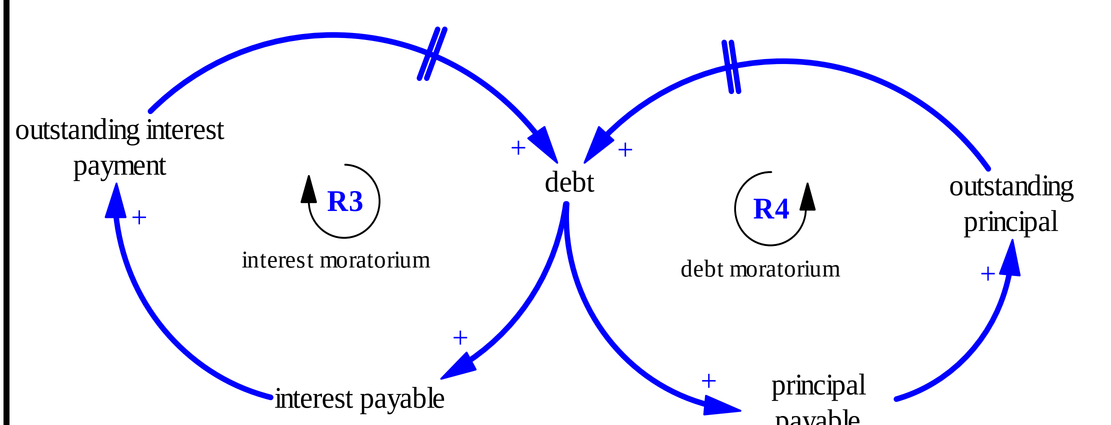
A critical look at the causal analysis above shows the basic structure of debt. The growth or decline of the debt stock will depend on the relative strength of the loops identified. The plausible strength of each loop can be traced to the policies designed towards debt management and economic growth in general. SAP policies designed in the early 1980s were primarily to address the balance of payment problem which directly affect debt stock.

2.2 Debt Rescheduling

Debt rescheduling is the re-ordering, by mutual agreement between a creditor and a debtor, of the conditions and terms for the repayment of debts owned by the latter to the former. In practice, such a re-ordering involves the lengthening of the repayment period and the lowering or raising of interest chargeable on the principal loan (Olusanya G.O and Olukoshi 1989). The causal loops below show two reinforcing loops illustrating the effect of debt rescheduling on debt.

The reinforcing loop (R3) implies that, as debt accumulates interest payable as a result of the debt increases. With the SAP policy of interest moratorium[2] debtors are allowed to delay interest payment to subsequent years which increases the outstanding interest payment. This then increases the debt with a delay at the future year. The delay in the causal relation shows that debt is calculated as the liabilities due for payment for the year in question. As a result, future liabilities are not considered as debt hence the delay.

figure 3: debt rescheduling



[2] This is agreement where a debtor country and its creditors permitting the former to delay or defer its interest payments to the latter.

The reinforcing loop (R4) shows that as debt increase, principal payable increases subsequently. Applying SAP policy of debt moratorium[3], principal payment is deferred to later years which then increase the outstanding principal. With a delay, as explained above in the case of interest moratorium, invariably increases the debt stock.

Debt rescheduling can be an advantage and disadvantage. In cases where no interest is charged on the outstanding payment, debt rescheduled can be invested to increase repayment ability. On the other hand, where interest is paid on the outstanding debt, it is beneficial when returns on investment are higher than interest rate. However, higher interest rate to returns on investment becomes a disadvantage. This was the situation in Africa that resulted to higher debt stock.

2.3 Financial liberalisation and Debt Relief Policy

Financial liberalisation reforms which took place since the 1990s and consist of tax reform and construction of better systems of public expenditure management. One of the key policies of the financial liberalisation was the devaluation of the currency. An overvalued exchange rate according to the IMF, discourages exports, however, and can frustrate the achievement of the goal of trade liberalisation.

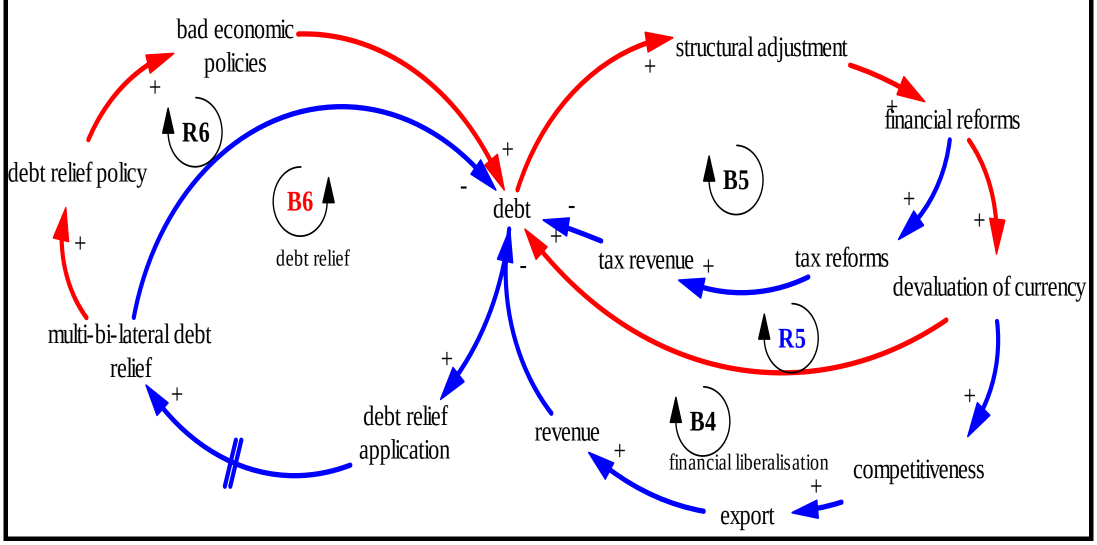
The intended dynamics of the financial liberalisation reform is: as shown in the causal loop diagram below (B4), increasing debt stock necessitates the implementation of structural adjustment. With more adjustment, a financial reform increases to characterise the shift from state control financial sector toward a market-driven sector. One of the key components of the financial liberalisation is the devaluation of currency. Implementation of financial reforms expedites the deregulation of the currency market which is perceived to be overvalued by IMF. It is believed that with the right exchange rate determined by demand and supply for foreign currency, market competition will emerge which will invariably favour more production for export. Rise in export quantity will increase revenue which will help in addressing the debt problem at hand. The balancing loop (B5) posits that, with structural adjustment and its subsequent financial reforms, tax reform is a critical part of the financial policies. The aim of the tax reform is to boost revenue mobilisation. Tax reform increases tax revenue and subsequently increases the ability of the state to deal with its debt obligations.

The unintended effect of the financial policy can be seen in reinforcing loop (R5). The loop directly links devaluation to debt. This is because, as local currency is devalued, more revenue needs to be mobilised to service the debt. In most cases in Africa, currencies were devalued more than 200 percent which means that twice as much is

[3] This concept refers to an agreement between a debtor country and its creditors permitting the former to delay or defer its debt payments to the latter. The delay or deferment can be a short period (e.g. 90 days), or a long rage of time (e.g. 10years) or even ad infinitum.

needed for debt servicing than before. This dynamics has contributed to the unprecedented increases in debt stock (in local currency denomination) in many countries that implemented excessive devaluation.

figure 4: financial liberalisation and debt relief



Debt relief was one of the components of SAP. It is seen as an incentive for enrolling into the SAP, however, it is worth nothing that debt relief have strict conditionality attached. The intended aim of the debt relief (B6) was to offer debt relief to countries under the SAP with unsustainable debt. As a result, high debt stock considered as unsustainable qualifies for debt relief application for assistance. When granted by the IMF, some fraction of multi-lateral and bi-lateral debt is forgiven which in turn reduces the debt stock. However, it is widely reported that moral hazards on the part of state government became an unintended effect. The reinforcing loop (R6) explains the dynamics. The incentive to receive debt relief introduces complacency which resulted in implementation of bad economic policies. The theory is to increase the debt stock in order to qualify for debt relief.

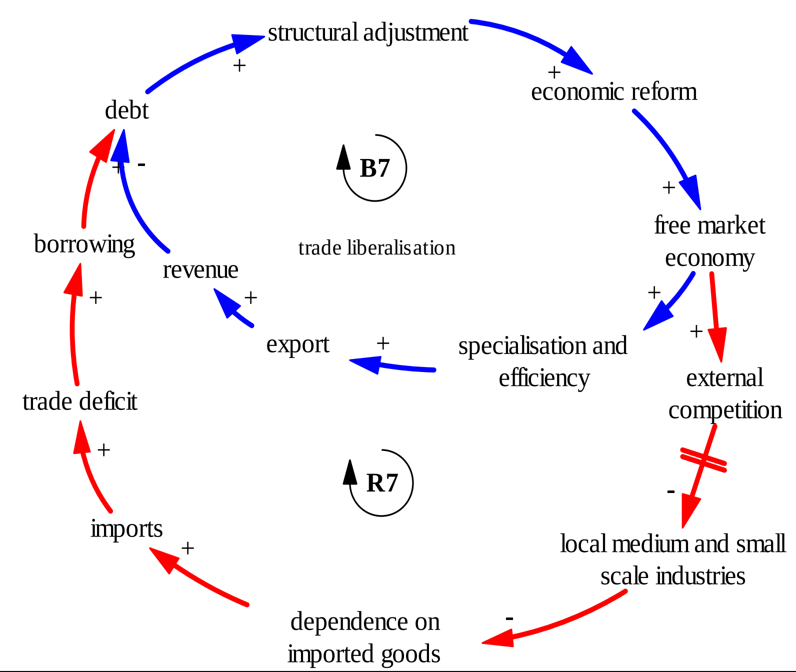
Careful observation and empirical finding of the financial and liberalisation and debt relief produced mixed results. Debt relief as the name implies reduced the burden of debt on countries which the IMF and World Bank believed was necessary to stimulate economic growth. On the contrary, financial liberalisation did not deliver the promised effect. Lack of basic infrastructure and unequal competition worked against the policy. Moreover, the policy of devaluation generally increased the burden of financial mobilisation to service debt and reduced the purchasing power of the citizens.

2.4 Trade Liberalization

Trade liberalisation is one of the integral policies of the structural adjustment program. Trade liberalisation is based on the neo-classical notion of high relative supply elasticity that elicit speedy and sizeable response in investment and output under improved price incentives and free markets (Saprin 2002). The neo-liberals justify liberalisation of trade on the premise that

- Competition from imports leads to specialisation and efficient allocation of resources while cleansing the economy of inefficient producers, thus removing the burden of society of sustaining such entities.
- With greater openness, small economies, it is argued, tend to have higher shares of trade in their gross national product(GNP) than do large countries and gain more than those nations that restrict trade.
- Trade liberalisation enhances the welfare of consumers and reduces poverty as consumers find opportunities to choose from a wide variety of quality goods and cheaper imports.

figure 5: trade liberalisation



The causal loop diagram above highlights the above arguments. The aim of trade liberalisation as shown in the balancing loop (B7) is to introduce free market economy and increase the export revenue to service debt. The introduction of structural adjustment comes with economic reforms. Under the umbrella of trade liberalisation, the vital policy to achieve the aim of liberalisation is free market economy. Implementation of free-market economy helps producers to specialise and improve efficiency. With efficient production culminating in increased production, export increases to raise foreign currency for debt servicing. On the other hand, reinforcing loop (R7) shows that, the implementation of free-market economy introduces external competition to local industries. With traditional production technology and lack of capital, coupled with high level of inefficiencies, local small and medium scale industries are gradually squeezed out of the market. Non-existence of small and medium industries as a result of competition increases the reliance on imported goods which invariably increase import. High imports without corresponding increase in export increases trade deficit. High trade deficit means borrowing is necessary to finance imports. High borrowing therefore leads to increased debt stock.

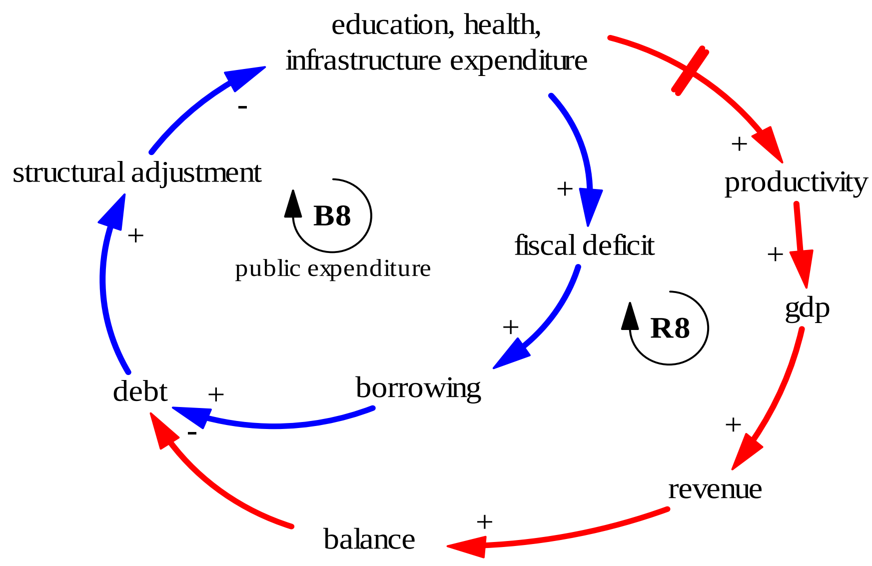
Critics of trade liberalisation contend that world trading environment is grossly uneven and characterised by unequal exchange, transfers-pricing practices, manipulation of prices by monopolies, imperfect competition etc. Under such circumstances trade liberalisation, in the absence of policies and institutions to ensure equitable distribution, results in hardships and an increase in poverty (Saprin 2002). It is a general knowledge that trade liberalisation did not work well in Africa despite it success in the export sector.

2.5 Public Expenditure

Under the Structural adjustment fiscal policy was directed not only at resource mobilization, but also focused on better control, monitoring and reporting of expenditure to achieve greater efficiency in public resources management. The main goal of the public expenditure policy is to address the problem of fiscal deficit. Government spending must equal revenue over time to achieve fiscal discipline.

From the causal loop diagram below, the balancing loop (B8) shows the perceived effect of the public expenditure policy to address fiscal deficit. With structural adjustment policies, social sector expenditure (education, health, infrastructure etc) are reduced to reduce government expenditure since these are the main sector which absorbs majority of the expenses. Reduced social sector expenditure improves the fiscal deficit which reduces the borrowing to supplement the fiscal gap. Less borrowing implies non-increase of debt.

figure 7: public expenditure



Looking at the policy from a different angle shows that the policy unintendedly reduced productivity (R8). Education, health and infrastructure availability are important determinants of productivity of any given population. Less investment in the education sector together with less doctors and lack of basic medication in the health sector clearly indicate a condition where the population is unhealthy and lacks the needed skills to engineer economic growth. Productivity reduction decrease gross domestic product and in most cases affect investment. Gross domestic product affect revenue and this in turn affect the balance of revenue and expenditure. Negative balance implies increase debt.

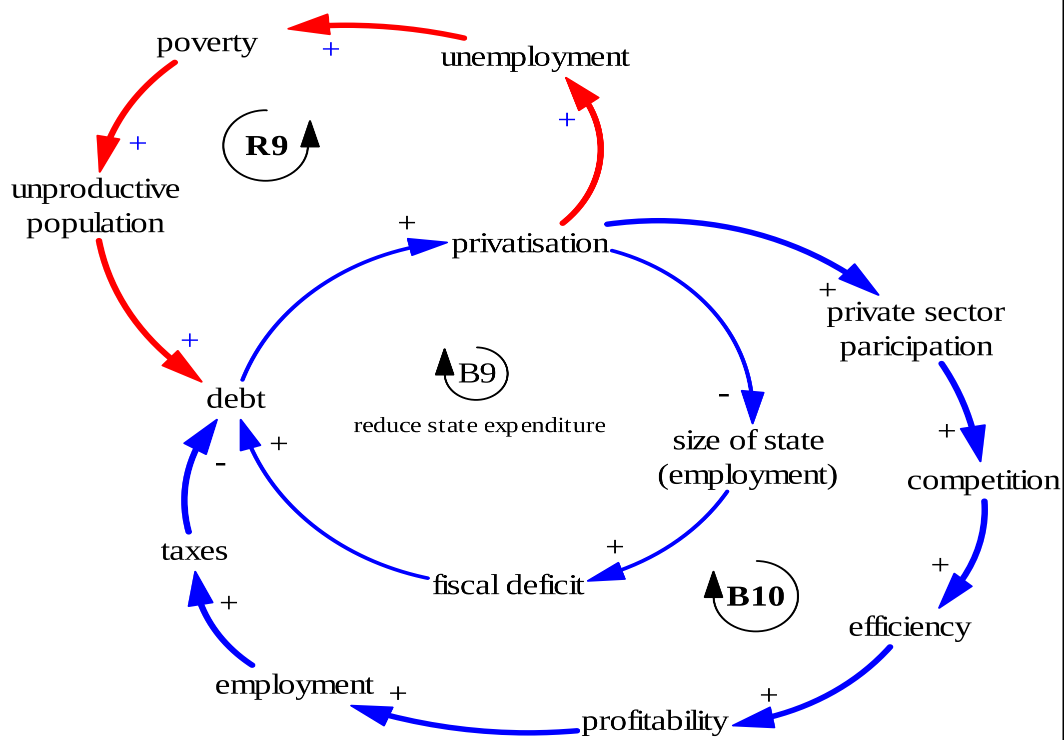
Though fiscal discipline improved as a result of public expenditure reform its effect was only felt in the monetary sector for a short period. In the long run, the real effect of the policy shows that real GDP growth was very disappointing. In the extreme cases some countries under SAP did not grow and others get even worse off.

2.6 Privatisation

The primary stated goal of privatisation policy is to promote the private sector as an engine for growth and to increase efficiency and productivity in the economy. The intended purpose was to introduce greater efficiency into the economy which according to SAP, require the reduced role for the state in the productive sectors. Loan agreement under SAP often has privatisation of state enterprises as conditionality. The two main objectives of privatisation under SAP are, to reduce the size of the state and introduce efficiency into the economy.

The two balancing loop shows the intended policy intent of the privatisation policy. In (B9), privatisation leads to the reduction of the size of state. With state enterprises privatised, the state wage budget is reduced to a manageable size. This reduction in size of state improves the fiscal deficit which leads to less debt stock. The balancing loop (B10) shows that, privatisation leads to private sector participation in the economy which leads to competition with the state enterprises and the other monopolist. It is believed that competition leads to efficiency in production which increases profitability. More profitability for business leads to employment for the jobless. More employment leads to more taxes and tax revenue, which directly helps in financing debt.

figure 8: privatisation



The reinforcing loop (R9) depicts the unintended effect of privatisation. With large scale privatisation, more of the population becomes unemployed due to restructuring in the privatised enterprises. Unemployment leads to poverty which reduces the productivity and production of the population. Unproductive population produces less and contribute less to the national income which then reduces the state ability to raise revenue and also increases social sector expenditure which increases debt.

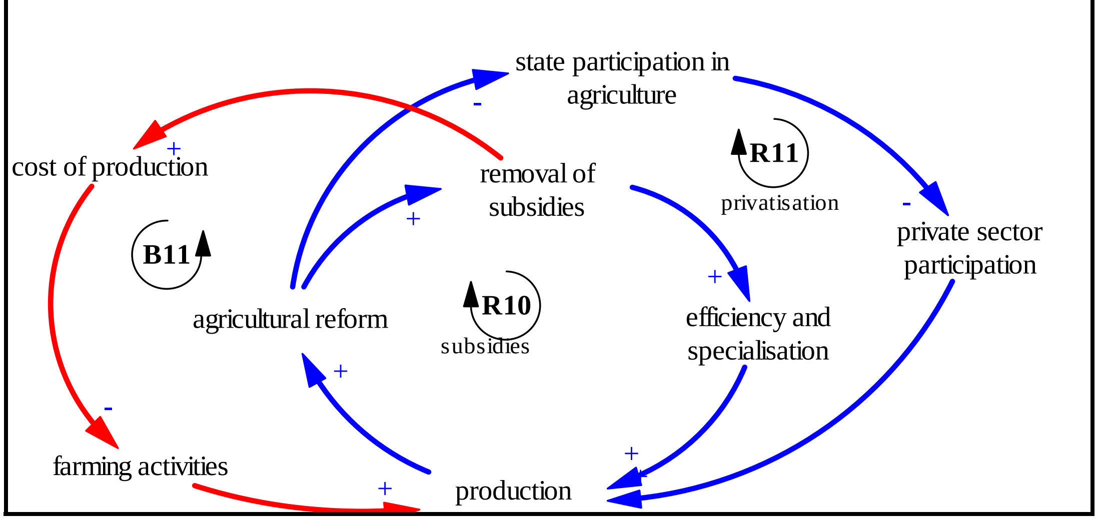
Most of the objectives of privatisation reform were achieved. The size of the state was reduced and significant proportion of the economic activities was controlled by private sector. In most cases efficiency was significant which is measured by the profitability of the companies' privatised compared to earlier figures. However, the social impact of privatisation policy such as unemployment, less wages, job insecurity became very significant in many post-SAP studies.

2.7 Agricultural Reform

The agricultural policy reform were initiated to reduce direct state involvement in the production, distribution and marketing of agricultural inputs and commodities, removal of subsidies on agricultural inputs and credit, liberalisation of export and import trade and export promotion (Saprin 2002). The principal objective of the agricultural policy reform under SAP is to increase agricultural productivity and production, boost agricultural exports as a basis for national economic growth, improve farmers' incomes and ensure food security.

There are two arguments for agricultural reform which are captured in the causal loop diagram below (R10, R11). Reinforcing loop (R10) implies that, agricultural reform leads to removal of subsidies which SAP believes will introduce efficiency and specialisation in agricultural production. Efficiency and specialisation increases production which fulfils the aim of the reform.

figure 9: agricultural reform



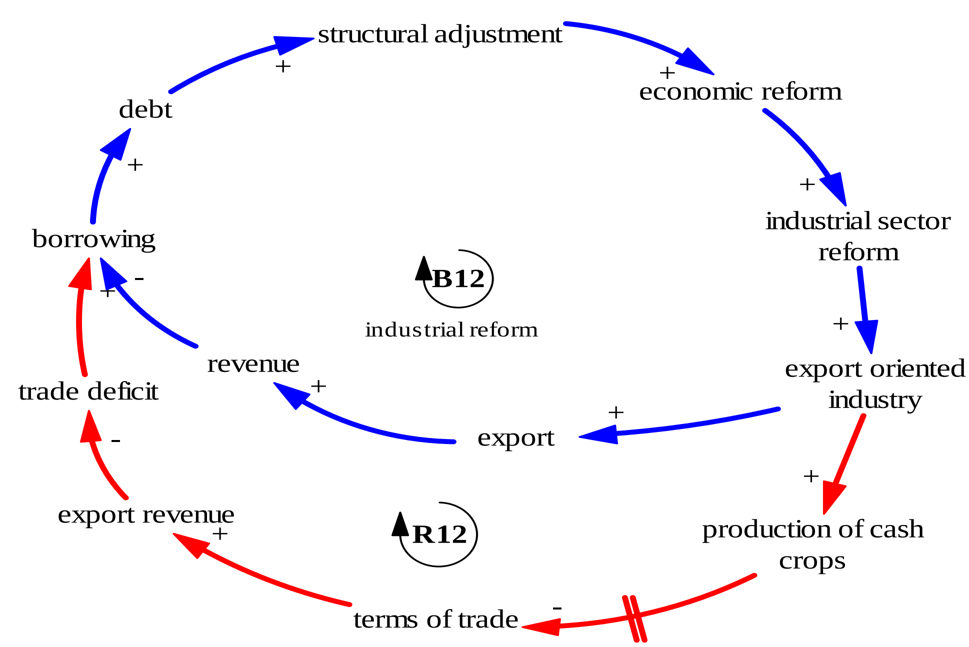
However, reinforcing loop (R11) shows that with the introduction of agricultural reforms, leads to reduced state participation in agriculture. Less state participation is balanced by the increased participation of the private sector. More private sector participation in agriculture will increase production. More production satisfies the objective of the reform. In spite of the argument, the other side of the policy (unintended consequences) which is captured by the balancing loop (B11) informs us that, removal of subsidies leads to increase cost of production in the agricultural sector. High cost of production reduces farming activities (land under cultivation) which reduced production.

Agricultural production under SAP increased significantly in most countries according to research findings. There were significant private sector participation in agricultural activities and the removal of subsidies improves the balance of payment of government budgets. The dark side was that, significant amount of farmers migrated to the urban areas for jobs due to the non-profitability of farming as a result of high cost of production. Only big farms producing for exports benefited enormously from the policy.

2.8 Industrial Reform

The industrial reform policies of SAP in Africa seek to ensure efficiency in the industrial sector and promote export oriented industries to increase the foreign market share of its exports. With more exports, foreign currency will be mobilised to service the high debt which is crippling economic growth.

figure 6: industrial reform



The balancing loop (B12) shows the intended effect of SAP industrial policy. Introduction of structural adjustment kick start the economic reform. Industrial sector reform constitutes an integral part of the economic reform. Debt being one of the main reasons for this reform, export oriented industries becomes a vital part of the industrial policies. More export as a result of investment in export oriented industries means more revenue which reduces borrowing and subsequently debt. The reinforcing loop

(R12) is the unintended effect of the industrial reform. The focus of the export oriented industries fell on cash crop production. With virtually all countries implementing SAP producing almost similar crops facilitated the deterioration of terms of trade. This clearly shows that diversification of export industries was not emphasised and implemented. Bad terms of trade reduce export revenue which exacerbated trade deficit. Trade deficit implies borrowing to close the gap which then increases debt.

3.0 Conclusion

This paper has demonstrated the theoretical and logical underpinning of structure adjustment programme of the IMF in a systematic way. Further, it is clear that the structural adjustment programme exhibited certain unintended effects which the policy did not take into consideration. In other words, the IMF and World Bank SAP ignore the long-term and cyclical effect of its policies which worked against the successful achievement of the programme targets.

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