Teal, F., 1988, "Domestic Policies, External Constraints and Economic Development in Nigeria Since 1950", *African Affairs*, 87, #346.

Turner, Terisa, 1978, "Commercial Capitalism and the 1975 Coup", in Panter-Brick, ed., *Soldiers and Oil: The Political Transformation of Nigeria*, London: Frank Cass.

World Bank, 1984, *Toward Sustained Development in Sub-Saharan Africa: A Joint Program for Action*, Washington, D.C: World Bank.

The Performance of Private Investment in the Changing Macroeconomic Policy Environment of Tanzania

Servacius B. Likwelile[*]

Abstract

This article examines trends in private capital formation in Tanzania in the changing policy environment of the period 1967-99. Its major argument is that the macroeconomic policy environment influences the investment decisions of private investors. Important variables seen to influence private investment are the rate of inflation, the exchange rate premium, openness and financial deepening. Uncertainty, captured by variations in the rate of inflation and the exchange rate premium, and country risk, measured by the foreign debt/GDP ratio, discourage private investment.

1. Introduction

Tanzania experienced an unprecedented and severe economic crisis, starting in the late 1970s and lasting generally for the whole period under discussion. This had its own lessons on the management of the economy, necessitating a critical re-examination of fundamental economic management principles. The crisis manifested itself in, among others, extensive and persistent macroeconomic imbalances, a widening saving-investment gap, unprecedented high rates of inflation, chronic balance of payments problems, a huge budget deficit, and a general slowdown in output growth (Ndulu, 1987). Agricultural output grew at an anaemic 2 percent per year, with industrial output falling by 15 percent while capacity utilization went down to less than 25 percent. In addition, there was a considerable deterioration in the country's transport system and other public services, such as telecommunications, water supply, education and health services (Mans, 1994). Responding like most other sub-Saharan African (SSA) countries, Tanzania embarked upon a reform process from the mid-1980s. These reforms were meant to reverse the trend and set the country on a course of sustainable growth. Conspicuous among the reforms has been the

[*]Lecturer in Economics, University of Dar es Salaam

need to address institutional rigidities that impose constraints on the adjustment process, and which frustrate operations of various economic agents in the country.

A successful reform process requires the removal of growth-stifling structural weaknesses that manifest themselves in the form of declining productivity in public investments and export performance, dwindling domestic savings, foreign exchange controls, and the erosion of private sector confidence. Indeed, the government of Tanzania saw the need, as evidenced by the adoption of economic reform programmes, to institute measures aimed at stimulating growth in the economy through easing the various growth constraints so as to maintain conditions favourable to sustained growth. Some significant successes have been registered in re-establishing internal and external balances (see Table 1 for macroeconomic performance indicators during the reform period).

Table 1:   Macroeconomic Performance Indicators in the Post Reform Era (1986 - 1999)

Indicator	86-89	89-91	1992	1993	1994	1995/96	1997/99
Real Growth of GDP	4.0	4.9	3.8	3.9	3	4.5	4.7
Real Growth Rate of GDP - revised	3.8	5.0	4.0	4.0	3.0	4.0	4.2
Real Growth of Agriculture	4.8	6.7	3.5	6.9	0.4	7	10
Real Growth of Manufacturing	2.5	5.5	4.3	2.1	-3.4	7	-
Investment/GDP - Total	25.4	33.6	32.7	32.2	30.7	16.1	-
Investment/GDP - Private	20	20.4	19.8	19.8	19.4	-	-
Domestic Savings/GDP	4.4	10	2.2	4.1	2.7	-	-
Current Account Deficit/GDP	0.9	0.005	0.02	0.028	0.026	-	-
Export/Import ratios	31.3	38.5	27.3	29.4	34.6	40.2	56.6
Money Supply (M2) Growth	24.3	36.5	38.5	28.8	32.5	26.2	12.1
Foreign Reserves (weeks of imports)	3.6	4.5	12.8	9.6	9.2	-	-
Food Reserve Position (SGR, tonnes)	112221	83773	97782	94500	65563	91742	83783
Inflation	31	31.6	22	25	33	29.8	7.0

Source: Annual Economic Surveys of Tanzania, various issues (1986-99)

There is no doubt that one of the important things a country needs to look at when faced with an economic crisis is investment behaviour, i.e., the extent and pattern of capital formation in the country. Investment determines the rate of accumulation of physical capital, which is an important factor in the growth of productive capacity and contributes to the growth of output in an economy. The magnitude, pattern, composition, and utilization of capital assets are crucial in this respect. The volume of capital formation and its productivity are important to the growth of output. It is in this context, therefore, that one attaches great significance to increasing the magnitude and productivity of investment. So, while macroeconomic reforms are important for economic recovery and growth, ensuring the sustainability of such recovery requires putting in place strategies and policies that create an enabling environment for investment promotion. Certainly the macroeconomic environment, as shaped by government policies (monetary, fiscal, trade, exchange rate, etc.) and institutional factors (administrative, legislative and regulatory), have a bearing on investment behaviour in a country.

The policy environment is a crucial factor of investment and economic activity in general. This suggests that there is a need to have appropriate policies on the exchange rate, trade, taxation, pricing, and credit. There is also a need to re-examine the appropriateness of government interventions and controls that have a bearing on investment performance, since they usually depress investment. There is a lot of evidence to show that private sector investment is more directly related to economic growth in developing countries than public sector investment is (Jaspersen *et. al.*, 1995; Serven and Solimano, 1992; Khan and Reinhart, 1990).

Findings in Tanzania show that the dominance of the public sector in investment activity led to great strains on the economy. This was manifested in massive increases in productive capacity, declining rates of growth, capacity enhancement without the realization of real production, and the exacerbation of resource gaps that inevitably led to a decline in the rate of investment (Mans, 1994; Bagachwa, 1991; Ndulu and Hyuha, 1984). The recent emphasis on promoting and nourishing private investment in Tanzania, thus scaling down public sector involvement, stems from this realization.

This study provides an account of domestic private capital formation in Tanzania, covering the period 1967-99. The main objective is to examine

trends in private investment in the changing macroeconomic environment. In the process, we investigate the relationship between private investment and macroeconomic policy variables, with the contention that these have a bearing on the magnitude and pattern of investment. We also examine the nature, character, composition, and behavioural pattern of private investment. This enables us to identify the main determinants of private capital formation in Tanzania in order to derive implications for policies that are supportive of higher investment efforts and the attainment of sustainable growth. To guide our discussion, we present a conceptual framework of investment behaviour in the next section.

2. Conceptual Framework

This section attempts, rather briefly, to present the theoretical underpinnings of the determinants of investment, and the role of policy in capital formation in an economy. There are a number of theories on investment behaviour that one finds in the literature on the subject.

2.1 The Traditional View

Traditional theories of investment behaviour date back to the writings of Keynes in the 1930s. The Keynesian analysis offers the observation that savings and investment must be identical *ex-post* (closed economy type), but the fact that savings and investment result from two independent decisions clearly demonstrates their difference *ex-ante*. A theory linked to growth led to the formulation of the accelerator model, which makes investment a linear proportion of changes in output, tying capital to output in a fixed ratio. A more general form of it is referred to as the flexible accelerator model, whose basic notion is that the larger the gap between the existing stock of capital and the desired capital stock the greater a firm's rate of investment. This calls for a mechanism to effect a gradual adjustment in net investment (I). The essence of the flexible accelerator model is to systematically eliminate the existing discrepancy between target capital stock (K*) and actual capital stock at time t, K(t) as follows:

$$I(t) = \delta[K^* - K(t)], 0 < \delta < 1.$$

One other theory is the neo-classical theory of investment formulated by Jorgenson and others. This represents the cost of capital view. According to this theory, investment spending depends on the level of output and the user cost of capital (which in turn depends on the price of capital goods, the real

interest rate, and the depreciation rate). Thus, a firm's desired stock of capital is found by equating the marginal product and the user cost. An alternative theory to this is the Q Theory, associated with Tobin, in which the main force driving investment is the Q ratio, i.e., the ratio of the market value of existing capital stock to its replacement cost.

2.2 Recent Developments: Accommodating What Obtains in Developing Countries

Of interest to the Tanzania is what happens in developing countries. Testing these kinds of models in developing countries has been hard due to the fact that key assumptions (such as perfect capital markets, perfect flow of information, little or no government investment) have for the most part been inapplicable. Typical of developing countries is the absence of equity markets and the prevalence of financial repression; the existence of a debt overhang; a big role for public capital stock; the importance of imported capital goods; and macroeconomic instability, seen via high inflation rates, exchange rate variations, exchange rate misalignment and huge foreign debts (Schmidt-Hebbel, 1996; Agenor and Montiel, 1996). These factors inhibit private capital formation, but are not captured by the traditional models. As Stiglitz and Weiss (1981) have argued, private investors in developing countries face enormous resource constraints, both financial (e.g., credit rationing) and physical (lack of supportive infrastructure).

In the 1970s McKinnon and Shaw pointed to the fact that developing countries suffer from financial repression which is generally equated with controls on interest rates in the downward direction, and thus the relaxation of such conditions would greatly increase savings and investment (via the conduit effect), postulated to be positively related to the real rate of interest (unlike the case in the neo-classical formulation). This has made it necessary for research concerning developing countries to concentrate on identifying the economic variables that might be expected to affect private investment. There is, however, a line of research that has attempted to retain the neo classical model while addressing the analytical and data problems involved in its application to developing countries, in particular the lack of data and the resource constraints facing private investors in these countries. Applying the neo-classical model leads to the conclusion that the private investment rate is negatively related to the real per capita growth rate but positively related to public investment in infrastructure; negatively related to the external debt burden but positively related to income per capita; and negatively related to domestic inflation (Greene and Villanueva, 1991).

Monetary, fiscal, and exchange rate policies directed at correcting unsustainable macroeconomic imbalances affect private investment. For instance, earlier measures in response to the economic crisis in sub-Saharan Africa (SSA) attempted to reduce resource gaps via autonomous cuts in aggregate demand and a reduction in economic activity. Because of import dependency in both production and investment, reduced import capacity resulting from a combined decline in exports and cuts in net foreign resource inflows led to import compression and the strangulation of economic activity (Ndulu, 1993). This had an inevitable negative effect on investment activity in those countries. With regard to monetary policy, stabilization packages that advocate restrictive monetary and credit policies affect investment. This happens in two ways: (i) by raising real cost of bank credit, and (ii) by raising interest rates, thus increasing the opportunity cost of retained earnings. Both mechanisms raise the user cost of capital, leading to a reduction in investment (Serven and Solimano, 1992).

However, there are studies that find a more direct effect of credit policy on investment, i.e., through preferential credit allocation in the case of repressed financial markets, a feature common in developing countries (Blejer and Khan, 1984). Equally important is the institutional structure of financial markets. The observation is that interest rates also affect firms that borrow in unofficial money markets (van Wijnbergen, 1983). Three major channels transmit the effect of fiscal policies on private investment.

The first of these is a public deficit, in which a high fiscal deficit pushes up interest rates or reduces credit available to the private sector (preferential treatment given to the public sector), or both, thus crowding out private investment. It is self-evident that the reduction of a public deficit during macroeconomic adjustment should allow expansion in private investment. Crucial, however, is the manner in which a fiscal deficit is rectified.

The second channel is public investment. Public capital may raise or drive down the return on private investment. Empirical evidence shows that complementary public investment, especially on infrastructural projects, has a positive effect on private investment. That is, the higher the complementarity of public and private capital (providing an enabling operating environment), the more likely that public investment will have a net positive effect on private investment, since it raises the rate of return on private capital, thus raising the private rate of capital accumulation (Easterly and Schmidt-Hebbel, 1993; Greene and Villanueva, 1991; Serven and Solimano, 1991; Blejer and Khan, 1984)). The third is the user cost of capital,

which rises due to increases in real interest rates resulting from deficit financing by domestic borrowing, thus diminishing investment profitability. Studies on investment in developing countries indicate that variations in output are the most important determinants of private investment, with the strong association between gross domestic investment ratios and long-term growth performance well established (Blejer and Khan, 1984; Greene and Villanueva, 1991; Schmidt-Hebbel *et. al.*, 1996). It is argued that the contraction in demand induced by adjustment measures is likely to have an adverse short-run effect on investment because of its negative effect on output growth. This is in accordance with the Q Theory of investment.

2.3 *The Role of Uncertainty and Irreversibility*

Another important development provides for a departure from the traditional focus on the cost of capital and replacement cost, and introduces the characteristic features of investment expenditure, namely that:

(a) Most investment expenditures are partly or completely *irreversible*, since they involve sunk costs that cannot be recovered, making most fixed investments easily done than undone

(b) Investment decisions have to face *uncertainty* about their future rewards and the best that investors can do is to attach probabilities to possible outcomes

(c) The issue of *timing*, which means that investments can be delayed, giving a firm an opportunity or option to wait for new information to arrive before it commits resources. Recent literature has shown that the option value of waiting can be considerable, especially in a highly uncertain environment, making uncertainty a powerful deterrent even to risk-neutral investors (Collier and Pattillo, 1996; Schmidt-Hebbel *et. al.*, 1996; Serven, 1996; Pindyck, 1991).

Investment decisions made by firms today bind them for several periods in the future. This renders investments sensitive to uncertainty about future economic situations, especially product prices, interest rates, trade regimes, exchange rate variability, inflation, taxation, regulatory policy, and the cost of timing the investment itself. This has implications for macroeconomic policy. If the goal is to stimulate investment, stability and credibility are important, and any equivocality about future policy direction is detrimental to investment growth. One needs to establish a policy environment and an incentive structure fostering investor confidence. Indeed, policies that increase credibility and which reduce uncertainty and instability would be expected, *ceteris paribus*, to boost private investment.

3. Investment Behaviour in Tanzania in 1967-99

This section discusses investment behaviour in Tanzania covering the period 1967-99. The focus is on the policy configuration and its effect on capital formation and the private-public sector divide in capital formation.

3.1 Investment in the Pre-reform Era: General Policy Stance and Effects

Following the adoption of the Arusha Declaration in 1967, Tanzania embarked upon a state-led development strategy, pursuing policies that encouraged public sector participation in economic activities actively discouraging private initiatives. For nearly two decades, private investors had to face a complex regulatory system that was erected to pursue the stated strategy. The system was characterized by, among others, entry restrictions via a complex and restrictive licensing system, preferential credit allocation to public operators, and high barriers to domestic and foreign trade. All these were primarily aimed at discouraging private sector participation. Although the share of private GDP still remained substantial, standing at an average of 65.2 percent during the period 1967-87, there was a vast expansion of the public sector into most spheres of economic activity (Bagachwa, 1991).

The institutional and policy environment then confronting the private sector was unfavourable, insecure, and unpredictable. Further evidence of this was the passing of a number of restrictive legislations on private sector initiatives. They included the 1967 Nationalization Act, the 1967 Party Leadership Code, and the 1975 Ujamaa Villages Act. These legislations favoured and protected public sector undertakings while limiting the room for expansion and nourishment of private sector activities. As for sources of development finance, importance was attached to parastatal financial institutions. The greatest mobiliser of investible resources among them was the banking system (Ndulu and Hyuha, 1984; BOT, 1981). Also practised were controls on foreign exchange, regulation of interest rates, credit rationing in favour of public enterprises, and trade confinement to a few parastatals (Moshi and Kilindo, 1995).

This policy stance had to have a bearing on the investment pattern in the country. The most conspicuous aspects of this were the composition and structure of investment, together with the utilization of capacity, all crucial to investment productivity. Emphasis was on large and capital intensive undertakings as opposed to labour-intensive micro-enterprise activities, for

which the private sector is suited. Investment in the directly productive sector comprised only 31 percent of the total fixed capital formation (GFCF) in the period 1970-73. Economic infrastructure comprised 53.4 percent of GFCF (Ndulu and Hyuha, 1984).

The composition of investment for the period 1970-80 was as follows: 41 percent in the directly productive sector, 42.7 percent in economic infrastructure, 11.7 percent in commercial services, and 4.6 percent in government administration. As a proportion of GDP, gross fixed capital formation was 24.5 percent in the pre-crisis period (1967-80). In the crisis period (1981-1985) its share stood at 20.7 percent.

Another noteworthy development was the adoption of the Basic Industry Strategy (BIS) in 1975, a long-term industrial strategy covering 20 years to 1995. Its orientation was structural change and self-reliance, and its target essentially the domestic market (Skarstein and Wangwe, 1986). The influence of the BIS was to be seen in the investment arena. Ndulu and Hyuha (1984) observe that, following the BIS, investment declined in infrastructure, increased in public administration, and remained constant in commercial services.

The distribution of such investments left a lot to be desired, since it favoured urban centres and politically sensitive areas with infrastructural services at the expense of rural areas and those lacking political clout. With regard to investment productivity, a downward trend could be observed. While it stood at around 23.3 percent during 1966-70, it dropped to 19.8 percent during 1971-75, to 11.5 percent in 1976-80, and further down to 4.4 percent during 1981-85 (Ndulu, 1994). The decline was not inconsequential.

There are two issues that one can address in view of the above. The first concerns the *narrowing effect* government policies had on the investment resource base due to its restriction of private sector initiatives, making it dependent on public institutions for investment resources. This means that it will take time, intensive efforts and consistency to win the required positive response from the private sector in widening the investment resource base. The second is the *effectiveness* or *productivity* of investments. As is widely acknowledged, public sector investment is less directly related to economic growth. Studies show that the marginal productivity of public sector capital is negative (although not significantly so), whereas that of private investment is significantly positive (Khan and Reinhart, 1990). Thus a credible opening

up, i.e., allowing private sector investment through the institution of reform containing an appropriate policy package, would address these problems. The impact of such opening up would then be seen through increased private investment.

3.2 Private and Public Sector Investment, 1967-99

We now examine the private and public sector investment in Tanzania in the period under study. The public sector in this sense is comprised of the central government, non-profit making bodies, and parastatal enterprises. Our aim is to capture the investment behaviour of both the private and public sectors in terms of their contributions to GDP and GFCF. The period is divided into three sub-periods: the pre-crisis period (1967-80), the crisis period (1981-85), and the reform period (1986-99). The picture, as captured in Table 2, shows that public sector investment contributed an average of 10.5 percent to GDP during the period, the highest contribution being 13.2 percent, which was registered in the pre-crisis period. Its contribution fell to 8.1 percent during 1981-85, and rose slightly to 10.3 in the reform period. In the case of private sector investment, a different pattern is observed. Its share of the GDP had a rising trend. Registering an average of 13.8 percent during the period, it rose from a low of 11.3 percent in 1967-80 to 12.5 and 17.6 percent in the crisis and reform periods respectively.

Table 2: Private and Public Sector Investment Behaviour, 1967-99 (% share)

	GDP			GFCF		
	1967-80	1981-85	1986-99	1967-80	1981-85	1986-99
PUI	13.2	8.1	10.3	54.1	32.8	37.6
PINV	11.3	12.5	17.6	45.9	50.6	62.4

Note: PUI - Public Investment; PINV - Private Investment
Source: Own Computations

It is important to note here that on average private investment figures (investment to GDP ratios) for Tanzania are higher than the average SSA standards of around 9 percent, a picture that emerges also for total investment (18 percent for SSA, and around 25-30 percent for Tanzania). This provides an important pointer to the low productivity of investment in Tanzania. The country's growth record (among the lowest) does not seem to reflect the level of capital formation capital formation.

The public sector trend observed with respect to GDP is also reflected in the GFCF. Having contributed a lot to GFCF during the pre-crisis period (54.1

percent), public investment fell to 32.8 percent (1981-85) and slightly rose to 37.6 percent (1986-99), the average for the entire period being 41.5 percent. The private sector also replicates the earlier pattern. Its contribution to GFCF rose from 45.9 percent (1967-80) to 62.4 percent in the reform period, with an average of 53 percent for the period. One observable fact, suggestive of the positive impact of the reform measures, is the shift of positions between the two agents. The dominance of the public sector in the 1967-80 period, both in GDP and GFCF terms, was replaced by private sector dominance in the later periods.

Under the new set-up the role of the private sector has become central, since the sector is experiencing a rapid expansion in production, commerce and finance (Ndulu and Wangwe, 1997). However, the quest for a more open and liberal environment is still being expressed among prospective investors, the policy environment still being considered by a notable section of investors as being not quite receptive and facilitative of a vibrant private sector. It has been reported, for example, that Tanzania is one of the most difficult African countries in which to do business. Problems cited include poor infrastructure, complicated tax laws, and an uncompetitive business culture (Coopers and Lybrand, 1997). Although it has shown significant improvement (from 10.9% in 1987 to 17.7% in 1996), the investor risk rating index for Tanzania is still low compared to countries like Botswana (50%) or South Africa (49%) (Ndulu and Wangwe, 1997; Serven, 1996; and Table 3 below). This suggests that further and deliberate efforts need to be made to improve and entice effective private investor response.

There is, nevertheless, a clear movement away from a controlled economy with a dominant public sector to an increasingly liberal and market oriented economy (Ndulu and Wangwe, 1997). The inability of the government to continue financing public sector investment, together with the relaxation of entry requirements for private agents, has strengthened the latter's position. Both in terms of GDP and GFCF, the private sector is taking centre stage. In this way it is helping in streamlining the role of the government to one of providing an environment that is conducive to private sector development.

4. Measures Taken to Improve the Investment Climate

In 1986 the Tanzanian government adopted an economic reform programme (ERP), which was built on the following assumptions: the recovery of the investment/GDP ratio, an increased share of the economy by the private

sector, a positive response of the private sector to the liberalized economic environment, and the assurance of sustained investment expansion. One of the targets was to raise the GFCF/GDP ratio to 30 percent by 1998/99. During the reform period (1986-99) it has stood at an average rate of 28 percent.

One of the major items in the ERP is the development of the private sector, a sector that is described as an important ingredient and key to the success of the economic recovery package (Mans, 1994). The government reform policies have thus been geared towards providing an enabling environment for the development and nourishment of the private sector in the country. Among the measures proffered in government policy in this regard include those that: (i) permit private traders to enter various stages of agricultural marketing and export; (ii) improve the competitive environment for the private sector by holding parastatals to the same commercial standards; (iii) encourage private entrepreneurs to invest and operate in production and trade; and (iv) improve the general business environment by revising and simplifying regulations governing private sector activities. Also measures aimed at facilitating the efficiency and growth of private sector activities, such as strengthening the banking sector, rehabilitating infrastructure and improving public services are all in the ERP package (URT, 1994; URT, WB and IMF, 1996).

Notable policy shifts directed at encouraging private sector development include the adoption of the National Investment Promotion policy to promote and protect private sector investments; the encouragement of private sector participation in industrial parastatals through the formation of the Parastatal Sector Reform Commission (PRSC); the recognition of the role of the micro-enterprise/informal sector as a legitimate sector; and the decision to allow private banking (Bagachwa, 1991). Also important are policies removing exchange controls (with the determination of rates now achieved through the inter-bank foreign exchange market), the establishment of own-fund import and foreign exchange retention schemes, the removal of credit controls, the establishment of the stock exchange market, and the liberalization of interest rates. The government has also established the Investment Promotion Centre (IPC), now the Tanzania Investment Centre (TIC). The purpose of the TIC is to advise on, among others, the role, scope and need for investment in Tanzania; the appropriate investment and priority areas for the country; and the rights and obligations of investors (Moshi, 1993).

5. Empirical Examination

5.1 Definition of Variable s and Their Rationale

This draws mainly from the theoretical exposition and recent empirical works done elsewhere, as summarized in section two, with appropriate consideration for the structural features obtaining in Tanzania. Investment data used are made of constant-price (1976 prices) private investment, with all the other macroeconomic variables reflecting the same base year. Data employed in the study have been obtained from the Bank of Tanzania (various issues of its *Economic and Operations Report* and the *Economic Bulletin*); the Bureau of Statistics (*Statistical Abstracts and National Accounts*); and the Investment Promotion Centre (IPC), together with the Barro and Lee series on human capital development, and the Nehru and Dhareshwa series on the stock of physical capital.

Deserving special mention is the inclusion of variables to capture uncertainty, which, in the Tanzanian context, has a decidedly economic orientation since the political situation has always been a stable one. The volatility of the macroeconomic environment tends to heighten the risk for potential investors (Collier and Pattillo, 1996). Two sources of risk and uncertainty are considered.

The first is a source that can inhibit or cause the postponement of private investment. This is examined through exchange rate instability, which is captured by the exchange rate premium (EXPM). EXPM has the potential of influencing the direction of capital flow and the domestic rate of inflation (RINF), since high and variable inflation is an indicator of instability and an important decision variable for investors (Serven, 1996).

Table 3: Volatility Indicators

	Standard Deviation of Inflation	Standard Deviation of Real Exchange Rate
Tanzania	11.04	28.87
SSA	3.0	3.3
Latin America and Caribbean	3.7	2.2
East Asia	2.4	1.7
South Asia	2.7	1.7
OECD	2.0	n.a
Other (Oceania and Middle East)	2.7	1.2

Source: Own computations for Tanzania, Collier and Pattillo (1996) for all others

Exchange controls were employed in Tanzania in the past, and these led to the emergence of parallel exchange markets, a wide exchange premium and tendency, therefore, towards capital flight, with investment activity concentrated in areas requiring little initial capital. Beginning in the late 1970s and lasting for a long period, domestic inflation (RINF) kept rising and reached an unprecedented level. A high inflation rate reflects instability in the macroeconomic environment, and it has the tendency of causing a-wait-and-see attitude among economic agents. So it is an important decision tool for an investor. Uncertainty is due, in this case, to large variations and so EXPM variability (EXPMV) and RINF variability (RINFV) are included in the estimation as measures of deviations from trend. It is important to explain how these variabilities have been calculated. A method used by Serven (1996) is borrowed. Standard deviations of EXPM and RINF are calculated over a three-year time horizon (i.e., the current plus the previous two years). This provides a time series for the variables (losing in the process the first two annual observations).

The second is a source that reflects country risk. The foreign debt to GDP ratio (FDGDP) is used for the purpose of measurement. Tanzania's total external debt stands at US$ 8.3 billion, with overall debt service averaging 35-40 of goods and services during 1989-94. This has implications for the country's access to sources of finance. Commitment to the repayment of foreign debt tends to leave very little for other important services in the economy. It is a pointer, therefore, to the country's inability to provide a supportive environment (e.g., infrastructure) that is conducive to domestic investment. It is also an important indicator of the degree of the country's vulnerability to external pressure, with a high probability of policy reversals as it tries to cope with such pressures.

It is clear that credit is important as a source of investment financing. There has, however, been credit rationing in Tanzania in favour of the public sector, thus limiting private sector access to the financial system (Aryeetey et. al., 1997). So, for the private sector, bank credit has been of less importance as a source of investible finance. Reliance has been on investors' own sources. This reality notwithstanding, credit to the private sector as a proportion of total domestic credit (PCR/DCR) is included in the model to reflect the financial dimension of investment decision-making, and in particular to indicate investment financing possibilities. Although domestic credit is expected to relate positively to private investment, one would not expect any statistically significant relationship. However, the economic meaning remains.

Two important variables are left out of the regression equation. One conspicuous omission relates to the cost of capital (or the real interest rate in this case). For most of the history of Tanzania, interest rates have been tightly controlled, and borrowing has not been a common practice for private agents. The dominance of public institutions on the investment scene have caused some complacency by banks in looking for private borrowers, as evidenced by wide interest rate spreads (Ndulu, 1997). This makes the observed interest rate a very poor indicator of the cost of capital as far as private investors are concerned. Naho (1993) also points out that in the case of Tanzania it is the quantity rather than the cost of capital that is a principal constraint on investment.

The other variable left out is the tax structure. Clearly the tax environment is crucial to investment. The management of the economy in the past gave operational legitimacy to public firms, making most private activities operate 'underground', with no proper records of the actual volume (or the private sector taxable base) of such undertakings. Available and reliable corporate tax figures are for parastatal firms only. Since tax evasion has also been rampant (Mpango, 1996), the ability of a tax variable to capture the direction of private investment has been rendered less meaningful.

Other variables included in the investment equation relate directly to private investment. These are the growth of GDP (GGDP), used for capturing the buoyancy of domestic demand; openness (OPEN), defined as the sum of exports and imports as a percentage of GDP. OPEN also indicates trading possibilities, and thus the extent of marketing potential. Also included in the equation is complementary government investment as a proportion of GDP (PUI/GDP), which in this case relates to public investment in economic infrastructure (transport, electricity, communications and water), an important element indicating how conducive the operating environment is. One needs to note here that the government's neglect of the economic infrastructure (a lack of maintenance and improvement) has always concerned investors, both public and private, thus creating the possibility of a negative influence on the direction of investment in the country. On the other hand this may not have had any significant influence on investment decisions - investors taking it as a given and passing any costs involved to consumers.

Additional variables include one reflecting financial depth (M2GDP), which is the ratio of broad money (M2) to GDP, and a variable to capture human capital (HUM) by the use of mean years of education.

The specification containing these variables is made with the recognition that while private investment may be explained by such factors as GDP or its growth, the direction of causality is not unequivocal. There is need also to specify an equation that explains GDP growth (for which private investment is an explanatory variable). Furthermore, it is to be noted that most of the variables are shares, a strong indication that the data are stationary. The model is, therefore, specified in the ratio levels of the variables.

The specification takes the following form (with dummies reflecting periods 1967-80 (D1), 1981-85 (D2) and 1986-99 (D3)):

$$PINV/GDP = f(GGDP, RINF, RINV, OPEN, PUI/GDP, FD/GDP, DEF/GDP, EXPM, EXPMV, M2/GDP, PCR/DCR, HUM, D1, D2, D3)$$

5.2 Diagnostic Testing and Estimation Procedure

Diagnostic tests of the time series behaviour, unit roots and co-integration (for non-stationary series designed to show whether there is a meaningful, constant, long-run relationship among the levels of variables) were carried out despite priors with regard to data used in the estimations. Since they are all ratios, they have a tendency to converge. Without prejudice to the strong priors, the aim here was to reconfirm the characteristics of the data, i.e., find out if they are stationary or not, and so ensure that the inferences drawn from the estimations are non-spurious. This is done for each series. The Augmented-Dickey-Fuller (ADF) test for unit roots has been used (one lag, as we are using annual data). The ADF takes the following form:

$$\Delta y_t = \beta y_{t-1} + \Sigma \gamma_j \Delta y_{t-j} + \mu_t,$$

in which case we reject the null of I(1) if the t-value for γ is less than the critical value and vice versa. To test for co-integration, the 'stationarity' of the residuals has to be determined - the argument being that if the regressor of two I(1) variables produces residuals that are stationary then we have co-integrating variables (Adam, 1992). The results of these tests are presented in Table 4.

Unit root tests indicate that except for two variables, PINV/GDP and PUI/GDP, all variables are non-stationary, as shown by the ADF-statistic (see comparison with the critical value -3.612 at 5% significance level).

Table 4: Unit Root Tests for Individual variables

Variable	t-ADF
PINVGDP	-4.0234*
GGDP	-3.5206
RINF	-3.3085
OPEN	2.2336
EXPM	-2.3867
M2GDP	-0.80392
PUIGDP	3.6584*
FDGDP	2.3023
HUM	-2.6991
DEFGDP	-2.8504

Note: Critical value: 5%= -.3.612, 1% = -4.394

An OLS estimation (using ratio levels) of the private investment equation was carried out. Residuals were then tested for 'stationarity'. Results show that the residuals are stationary, as indicated by the ADF-statistics (t-ADF(1) of -4.3485 and t-ADF(0) of -4.0246) that are less than their critical values. The diagnostic tests for the OLS estimated equation are as follows:

AR (1-2)	F(2,18)	= 1.3849 [0.2758]
ARCH(1)	F(1,18)	= 0.6643 [0.4257]
Normality $\chi 2$		= 0.10839 [0.9472]
RESET	F(1,19)	= 2.8292 [0.1089]

There is ample indication of the absence of autocorrelation, since the AR-statistic is less than its critical value. The ARCH (1) test suggests the absence of autoregressive-conditional heteroscedasticity. Normality test results are also favourable to the model specification test, indicating that our model is correctly specified. (In all these cases the respective statistics are less than their critical values, at 5% significance level). The fact that most of the variables used in the estimation are highly correlated, as can be seen in the correlation matrix (Table 5), required carrying out a kind of stepwise regression to find out the best model, in terms of variable combinations, to explain investment behaviour. OLS estimations were conducted. Results obtained, as shown in Table 5, are extremely poor; t-values are very low as one would expect in the presence of multi-collinearity.

Some testing downwards was carried out on the 'general' specification until a 'preferred' model was determined. This procedure was also applied while estimating the equations using the IV technique.

Table 5: Correlation Coefficients

	GGDP	FD/ GDP	PINV/ GDP	PUI/ GDP	DEF/ GDP	M2/ GDP	HUM	PCR/ DCR	RINF	EXPM	CSTK	OPEN
GGDP	1.00											
FDGDP	0.19	1.00										
PINVGDP	-0.08	0.62	1.0									
PUIGDP	0.21	-0.28	-0.27	1.00								
DEFGDP	-0.21	0.60	0.55	-0.32	1.00							
M2GDP	-0.56	-0.26	0.11	-0.24	0.49	1.00						
HUM	0.01	0.84	0.54	-0.36	0.75	0.07	1.00					
PCRDCR	0.40	0.11	-0.22	0.19	-0.55	-0.78	-0.26	1.00				
RINF	-0.10	0.59	0.41	-0.58	0.72	0.27	0.73	-0.36	1.00			
EXPM	-0.32	-0.10	0.31	-0.34	0.35	0.57	0.07	-0.63	0.44	1.00		
CSTK	-0.12	0.79	0.63	-0.43	0.85	0.26	0.92	-0.49	0.81	0.34	1.00	
OPEN	0.26	0.97	0.55	-0.19	0.51	-0.41	0.78	0.19	0.49	-0.24	0.69	1.00

Similarities were recorded in results obtained by the two techniques. This testing downwards was appropriate, as evidenced by the falling sigma (σ-) value. The plot of residuals (Figure 1) reinforces this argument. It depicts the white noise character of the error term.
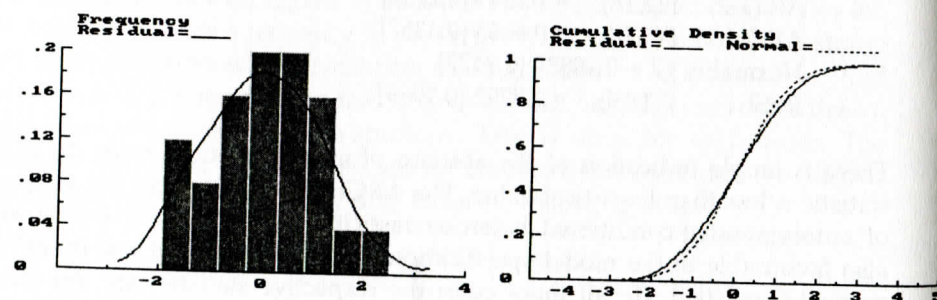

Figure 1: *Residuals of the Private Investment Equation*

5.3 Regression Results

The estimation results are shown in Table 6. As it may be recalled, apart from the traditional explanatory factors, this study sought to establish the role of uncertainty as captured by variability in inflation and the exchange rate premium. It also sought to establish private investment behaviour in different policy regimes by the use of dummy variables. All these were attempted, but no meaningful results were obtained. The structure of the economy and the data generation process may provide some of the

explanation. A different way of capturing these was followed, including testing for the constancy of parameters over the study period to determine if there were any significant structural breaks.

Table 6: Investment Function Estimation Results

Variable	Coefficient	t-value
Constant	6.31	2.47
GGDP	-0.07	-0.18
RINF	-0.14	-1.96
OPEN	0.01	4.59
PUIGDP	-0.09	-0.30
FDGDP	0.04	0.62
DEFGDP	-0.03	-0.29
EXPM	0.02	2.89
M2GDP	0.15	1.71
PCRDCR	-0.01	-0.05
HUM	-0.69	-0.09
Adj. R2	0.63	

The results in Table 6 show that there were four main driving factors of private investment in Tanzania for the period under study. All of them are statistically significant at conventional levels: Openness (elasticity of 0.39), exchange rate premium (elasticity of 0.149), financial deepening (elasticity of 0.339) and high inflation rates (elasticity of -0.212). The first three have had a positive impact on private investment. Openness provides a pointer to investors of the potential for foreign trade. Financial depth provides a measure of the availability of finance for investments purposes, i.e., the depth of the local financial sector in mobilizing funds. The existence of a reliable financial sector that enjoys a high degree of government protection (Aryeetey *et. al.*, 1997) and the current efforts at opening up the Tanzanian financial sector to private operators seem to be working favourably for private investment.

Contrary to expectations, the exchange rate premium is positively related to private investment, throwing into doubt the view that this could be a source of uncertainty in investor decision making. The explanation here could be that the presence of a high premium was a pointer to the magnitude of 'proceeds unnoticed by Government' (in terms of foreign exchange acquisition), which can then be reinvested or siphoned out of the country. In this case investors would most likely take advantage of the weak monitoring system, and the low likelihood of being caught and reprimanded. Just as

expected, high inflation rates (elasticity of -0.212) have been discouraging to private investment. The behaviour of recursive least squares coefficients for the four variables is shown in Figure 2. They all lie within bounds, thus suggesting some level of stability.
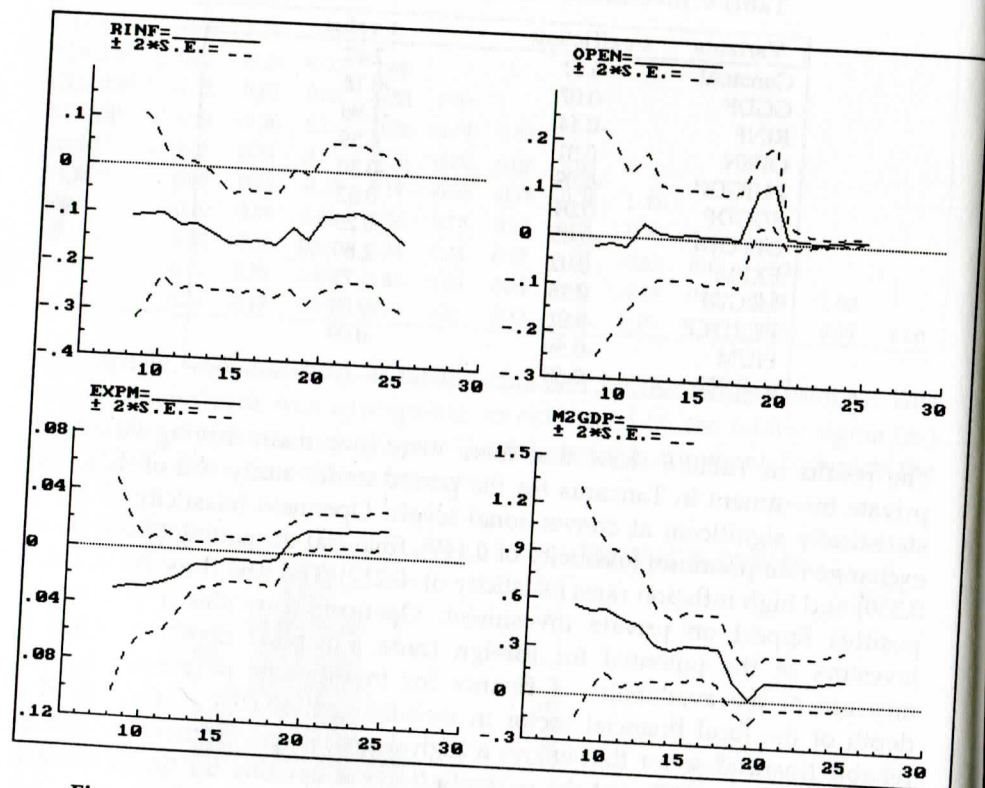

Figure 2: *The Behaviour of Recursive Least Squares (RLS) Coefficients*

Uncertainty, as represented by variations in the rate of inflation and the exchange rate, has also been shown through the standard deviations (see Table 7). There have been wide variations in the two variables relative to the situation in other countries as pointed out before (refer to Table 3). Real exchange rate (RER) variations remained somewhat steady between 1967 and 1985, but heightened during the period 1986-90. Drastic devaluations effected with economic reforms are likely to have contributed to that. Vacillations in the policy stance—i.e., whether or not to allow market determined rates— were likely to have been detrimental to the investment drive. Allowing

private exchange bureaux and leaving exchange rate determination to market forces led to a decline in RER variations in the period 1991-99, a positive development for private capital formation.

Table 7: The Variability (Standard Deviation) of the Exchange Rate and Inflation

Period	Real exchange rate	Inflation rate
1967-76	4.68	7.90
1977-80	3.69	9.82
1981-85	4.45	3.90
1986-90	31.31	2.19
1991-99	14.27	5.09

5. Conclusion and Policy Implications

This article has examined the behaviour of private investment in Tanzania, covering the period 1967-99, on the premise that certain policy variables were good for the promotion of private investment, while others were not. It is clear from the analysis that policies opening up the economy to international trade and strengthening the domestic financial sector—thus providing an important funding source for investors—are important to the promotion of private investment. In addition, the continued liberalization of the exchange rate regime, the stabilization of the macroeconomic environment and the development of human capital are important for capital formation.

An important aspect that needs special attention is the role of risk and uncertainty in the process of capital formation. Uncertainty, as captured by the variability of the inflation rate and the exchange premium, has a detrimental effect on private investment. Ensuring stability in the policy-making environment, stabilizing the exchange rate, correcting misalignment, and working for price stability are critical policy interventions in favour of private investment

References

Adam, C.S., 1992, "Recent Developments in Econometric Methods: An Application to the Demand for Money in Kenya", African Economic Research Consortium, Special Paper 15.

Agenor, P.R. and P.J. Montiel, 1996, *Development Macroeconomics*, Princeton University Press.

Aryeetey, E., H. Hettige, M. Nissanke, and, W. Steel, 1997, "Financial Market Fragmentation and Reforms in Ghana, Malawi, Nigeria and Tanzania", *The World Bank Economic Review*, Vol. 11, No. 2, 195-218.

Bagachwa, M.S.D, 1991, "The Challenges and Potentials of the New Investment Promotion Policy", Paper Presented at the 7th National Economic Policy Workshop, Dar es Salaam.

BOT (Bank of Tanzania), 1981, *Tanzania: Twenty Years of Independence 1961-81; A Review of Political and Economic Performance*, Dar es Salaam.

Blejer, M.I., and M.S. Khan, 1984, "Government Policy and Private Investment in Developing Countries", *IMF Staff Papers* 31(2), 379-403.

Collier, P., and C. Pattillo, 1996, "Private Investment, Risk and the Policy Environment: What Can African Governments Do?", A Report for the African Development Bank, December.

Coopers and Lybrand, 1997, "Investor Roadmap: Phase Two", A Report to USAID, Dar es Salaam.

Easterly, W., and K. Schmidt-Hebbel, 1993, "Fiscal Deficits and Macroeconomic Performance in Developing Countries", *World Bank Research Observer* 8(2), 21-37.

Greene, J., and D. Villanueva, 1991, "Private Investment in Developing Countries: An Empirical Analysis", *IMF Staff Papers*, 38(1), 33-58.

Jaspersen, F.Z., A.H. Aylward and M.A. Sumlinski, 1995, "Trends in Private Investment in Developing Countries: Statistics for 1970-94", *International Finance Corporation*, Discussion Paper 28.

Khan, M.S. and C.M. Reinhart, 1990, "Private Investment and Economic Growth in Developing Countries", *World Development*, 18(1), 19-27.

Mans, D., 1994, "Tanzania: Resolute Action", in I. Husain and R. Faruqee (eds.), *Adjustment in Africa: Lessons from Country Case Studies*, World Bank.

Moshi, H.P.B., 1993, "The Commercialisation and Privatisation of Public Enterprises in Tanzania: Successes, Problems and Prospects", in M.S.D. Bagachwa and A.V.Y. Mbelle (eds.), *Economic Policy Under a Multiparty System in Tanzania*, Dar es Salaam University Press.

Moshi, H.P.B., and A.A.L. Kilindo, 1995, "The Impact of Government Policy on Macroeconomic Variables: A case Study of Private Investment in Tanzania", Final Report for AERC, June.

Mpango, P.I.N., 1996, "Evasion of Import Duties: An Economic Analysis of the Case of Tanzania", PhD Thesis, University of Dar es Salaam.

Naho, A., 1983, "The Demand for Money in Developing Countries: Empirical Evidence from the East African Countries", *Economic Research Bureau Paper 85.2*, Dar es Salaam.

Ndulu, B.J., 1987, "Stabilisation and Adjustment Policies and Programmes", *WIDER Country Study* No. 17, Helsinki.

—, 1993, "Exchange Rate Policy and Management in the Context of Economic Reforms in Sub-Saharan Africa: Tanzania as an Illustrative Case", in G. Hansson (ed.), *Trade, Growth and Development: the Role of Politics and Institutions*, Routledge, London.

—, 1994, "Tanzania's Economic Development: Lessons from the Experience and Challenges for the Future", in L.A. Msambichaka *et. al.*, (eds.) *Development Challenges and Strategies for Tanzania: An Agenda for the 21st Century*, Dar es University Press, Dar es Salaam.

—, 1997, "The Challenging Path of Transition to a Low Inflation Economy in Tanzania", The Second Gilman Rutihinda Memorial Lecture, Bank of Tanzania, Dar es Salaam.

Ndulu, B.J., and M. Hyuha, 1984, "Investment Patterns and Resource Gaps in the Tanzanian Economy, 1970-82", in N.H.I. Lipumba *et. al.*, (eds.), *Economic Stabilisation Policies in Tanzania*, Economics Department and Economic Research Bureau, University of Dar es salaam.

Ndulu, B.J., J. Semboja and A. Mbelle, 1998, "Promoting Non-traditional Exports in Tanzania, A Paper for the UNU/WIDER project "Growth, External Sector and the Role of Non-traditional Exports in Sub-Saharan Africa".

Ndulu, B.J., and S.M. Wangwe, 1997, "Managing the Tanzania Economy in the Transition to Sustained Development", Paper Presented at the Workshop on Economic Management in Tanzania, Dar es Salaam.

Pindyck, R.S., 1991, "Irreversibility, Uncertainty, and Investment", *Journal of Economic Literature*, Vol. XXIX, 1110-48.

Schmidt-Hebbel, K.., 1996, "Fiscal Adjustment and Growth: In and Out of Africa", *Journal of African Economies*, Vol. 5, No. 3, 7-59.

Schmidt-Hebbel, K.., L. Serven and A. Solimano, 1996, "Savings and Investment: Paradigms, Puzzles, Policies", *The World Bank Research Observer* 11(1), 87-117.

Serven, L., 1996, "Irreversibility, Uncertainty and Private Investment: Analytical Issues and Some Lessons for Africa", Paper Presented at an AERC research workshop, May.

Serven, L., and A. Solimano, 1992, "Private Investment and Macroeconomic Adjustment: A Survey", *The World Bank Research Observer* 7(1), 95-114.

Skarstein, R., and S.M. Wangwe, 1986, *Industrial Development in Tanzania: Some Critical Issues*, Scandinavian Institute of African Studies.

Stiglitz, J.E., and A. Weiss, 1981, "Credit Rationing in Markets with Imperfect Information", *American Economic Review* 71(3), 393-410.

van Wijnbergen, S., 1983, "Interest Management in LDCs", *Journal of Monetary Economics*, 12, 433-52.

URT (United Republic of Tanzania) WB (World Bank) and IMF (International Monetary Fund), 1991, "Tanzania: Economic Policy Framework Paper for 1991-93/94", Government of Tanzania, Dar es Salaam

—, "The Rolling Plan and Forward Budget for Tanzania for the Period 1994/95 - 1996/97", Government of Tanzania, Dar es Salaam.

URT, WB and IMF, 1996, "Tanzania - Enhanced Structural Adjustment Facility - Policy Framework Paper for 1996/97 - 1998/99", Government of Tanzania, Dar es Salaam.

World Bank, 1994, *Adjustment in Africa: Reforms, Results, and the Road Ahead*, Oxford University Press, New York.

Social Protection for Older People in Tanzania: In Search of an Alternative

Felician S.K.Tungaraza*

Abstract

This article examines the social security of elderly people. It argues that the majority of the elderly people in Tanzania are threatened by chronic social insecurity emanating from structural poverty. Using in-depth interviews and documentary evidence to elicit information, the study shows that modern social security schemes cover a relatively small proportion of elderly persons in Tanzania, and that pension benefits are inadequate for the necessities of life. It argues that social protection provided by the traditional and informal systems of social security to elderly persons outside the formal sectors of the economy is gradually weakening and becoming ineffective. Non-formal support from the government is also dwindling, while support from non-governmental organizations (NGOs) and community-based organizations (CBOs) is inadequate, covering only a small proportion of elderly persons. The article concludes by discussing the policy implications of the findings and suggesting alternative support mechanisms.

1. Introduction

In the past few decades attention has been drawn to the question of ageing on a massive scale and the social protection of older people. This is due to the social insecurity facing elderly people. As a result, in 1999 the United Nations Organization issued the Plan of Action on Ageing, requiring governments all over the world to formulate policies and establish programmes for improving the well-being and status of elderly people.

Various studies on the social protection of elderly people in Tanzania have shown that the majority of them are afflicted with chronic social insecurity (Bossert, 1988; Mlyansi, 1991; Tungaraza, 1995). These studies have identified the root causes of social insecurity for the elderly people as old age risk and

*Senior Lecturer in Sociology, University of Dar es Salaam